



Postsecondary Sustainability Award Nominee Presentation Form

ELIGIBILITY CERTIFICATIONS

College or University Certifications

The signature of college or university President (or equivalent) on the next page certifies that each of the statements below concerning the institution’s eligibility and compliance with the following requirements is true and correct to the best of their knowledge.

1. The college or university has been evaluated and selected from among institutions within the Nominating Authority’s jurisdiction, based on high achievement in the three ED-GRS Pillars: 1) reduced environmental impact and costs; 2) improved health and wellness; and 3) effective environmental and sustainability education.
2. The college or university is providing the U.S. Department of Education Office of Civil Rights (OCR) access to information necessary to investigate a civil rights complaint or to conduct a compliance review.
3. OCR has not issued a violation letter of findings to the college or university concluding that the nominated college or university has violated one or more of the civil rights statutes. A violation letter of findings will not be considered outstanding if OCR has accepted a corrective action plan to remedy the violation.
4. The U.S. Department of Justice does not have a pending suit alleging that the college or university has violated one or more of the civil rights statutes or the Constitution’s equal protection clause.
5. There are no findings by Federal Student Aid of violations in respect to the administration of Title IV student aid funds.
6. The college or university is in good standing with its regional or national accreditor.
7. The college or university meets all applicable federal, state, local and tribal health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

U.S. Department of Education Green Ribbon Schools Postsecondary Sustainability Award

Public 4-Year Public 2-Year Private Non-Profit

Name of President/Chancellor: Dr. John D. Simon

(Specify: Ms., Miss, Mrs., Dr., Mr., etc.) (As it should appear in the official records)

Official College or University Name: Lehigh University

(As it should appear on an award)

College or University Street

Mailing Address: 27 Memorial Drive West, Bethlehem PA 18015

(If address is P.O. Box, also include street address.)

County: Northampton IPEDS Number*: 213543

Telephone: 610-758-3157 Fax: 610-758-3154

Web site/URL: <https://www1.lehigh.edu/> AND <https://sustainability.lehigh.edu/> E-mail: jds414@lehigh.edu

*Integrated Postsecondary Education Data System

I have reviewed the information in this application and certify that to the best of my knowledge all information is accurate.

DocuSigned by:

John Simon

(President’s/Chancellor’s Signature)

Date: 12/18/2020



Nominating Authority's Certifications

The signature by the Nominating Authority on this page certifies that each of the statements below concerning the college or university's eligibility and compliance with the following requirements is true and correct to the best of the Authority's knowledge.

1. The college or university has been evaluated and selected from among institutions within the Nominating Authority's jurisdiction, based on high achievement in the three ED-GRS Pillars: 1) reduced environmental impact and costs; 2) improved health and wellness; and 3) effective environmental and sustainability education.
2. The college or university meets all applicable federal, state, local and tribal health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

Name of Nominating Agency: Pennsylvania Department of Education

Name of Nominating Authority: Ms. Tamara E. Pepper

(Specify: Ms., Miss, Mrs., Dr., Mr., Other)

I have reviewed the information in this application and certify to the best of my knowledge that the school meets the provisions above.

A handwritten signature in black ink that reads "Tamara E. Pepper". The signature is written in a cursive style and is positioned above a horizontal line.

Date: 02/19/2021

(Nominating Authority's Signature)

SUBMISSION

The nomination package, including the signed certifications, narrative summary, documentation of evaluation in the three Pillars, and photos should be submitted online according to the instructions in the Nominee Submission Procedure.

OMB Control Number: 1860-0509

Expiration Date: March 31, 2021

Public Burden Statement

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. The valid OMB control number for this information collection is 1860-0509. Public reporting burden for this collection of information is estimated to average 37 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The obligation to respond to this collection is required to obtain or retain benefit P.L. 107-110, Sec. 501, Innovative Programs and Parental Choice Provisions. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the U.S. Department of Education, 400 Maryland Ave., SW, Washington, DC 20202-4536 or email ICDocketMgr@ed.gov and reference the OMB Control Number 1860-0509. Note: Please do not return the completed ED-Green Ribbon Schools application to this address.



Summary Narrative: An Overview of Your Work Encompassing All Three Pillars

Lehigh University has made tremendous strides as an institution to create a campus that merges environmentally responsible solutions with equitable community practices. One of the University's visions is a commitment to social, environmental, and economic sustainability. This is apparent throughout its operations, academics, administration, and community. The alignment of these sustainability values with Lehigh's practices embodies the university's motto, "Homo Minister et Interpres Naturae," which translates to "Man (now interpreted as Humanity), the servant and interpreter of nature."

Sustainability is a strategic initiative at Lehigh. This year, Lehigh adopted its [Sustainability Strategic Plan 2030](#), which establishes a long-term vision for sustainability and will improve operational efficiencies and promote cost savings. It encompasses 6 focus areas and 113 goals, with each goal aligning with one or more of the United Nations Sustainable Development Goals. This 10-year plan is based on a vision of an inclusive Lehigh community where sustainability is an integral part of the institutional ethos. It will inspire ecologically sound, socially just, and financially prudent action that improves the well-being of people and the environment and positions Lehigh as a local and global collaborator and leader.

This is the result of a full year of stakeholder engagement. This process included numerous meetings with administrative departments and colleges to establish goals and get buy-in. It also included a two-part series of campus workshops open to all faculty, staff, and students as well as engagement with the City of Bethlehem and Bethlehem community. Additionally, an Alumni Advisory Council made up of [nine alumni](#) offered their expertise to shape the plan. Throughout the process, the [Lehigh Sustainability Council](#) (faculty, staff, students, and senior administrators) provided crucial oversight and support.

While [Lehigh's Sustainability Strategic Plan 2030](#) demonstrates Lehigh's overall commitment to a long-term sustainability vision with near-term, intermediate, and long-term goals, the University's sustainability efforts are not just a vision, they are concrete and actionable. Sustainability is incorporated into daily campus life which reduces environmental impacts and costs, improves health and wellness, and supports effective environmental and sustainable education.

As climate change continues to pose an increasingly dire threat to the environment, public health, infrastructure, agriculture, and the economy, Lehigh is taking action to further its commitment to environmental sustainability. As part of its Sustainability Strategic Plan 2030, Lehigh has begun the process of creating a bold [Climate Action Strategy](#) and is currently assisting the local Bethlehem community with climate action



planning efforts. Additionally, Lehigh uses the results of its annual greenhouse gas inventory to guide decisions and has implemented numerous [measures to conserve energy and increase efficiency](#). This includes LED lighting projects and HVAC upgrades. Additionally, Lehigh will soon be offsetting 100 percent of its electricity emissions through a combination of offsite (pending legal reviews) and onsite projects, energy conservation, and renewable energy credits (RECs) and is mapping out a plan to transition its vehicle and bus fleet to run exclusively on renewable energy.

Lehigh University has a strong commitment to health and wellness as evidenced by the creation of the new [College of Health](#) and the inclusion of a 'Health and Wellness' focus area in the Sustainability Strategic Plan 2030. University programs such as the [Employee Wellness Program](#) which encourages the entire community to commit to a healthy and active lifestyle, dietician/nutrition services that include nutrition counseling and helping students create meal plans, and mental health services provide ongoing support for faculty, staff, and students. Through Lehigh Dining and the [Real Food Challenge](#), Lehigh students, faculty, and staff have access to food on campus that is local, organic, humane, and fair trade. Lehigh's health and wellness efforts go beyond faculty, staff, and students to the youngest members of our campus community, the children of Lehigh employees. Lehigh's Child Care Center, Bright Horizons at Lehigh University, was recognized as an [Eco-Healthy Child Care® facility](#) by the Children's Environmental Health Network in April 2020.

Lehigh University's mission is to advance learning through the integration of teaching, research, and service to others. One of Lehigh's visions is a commitment to social, environmental, and economic sustainability. Driven by this mission and vision and by Lehigh's motto, these sustainable principles are woven throughout Lehigh's curriculum, co-curriculum, research, and civic engagement opportunities. Lehigh is also actively assessing the sustainability competencies of its students and celebrating student work at an annual showcase of projects, the Lehigh Expo.

This application discusses the sustainability efforts mentioned below in greater detail. Lehigh continually seeks and embraces new solutions that support long-term sustainable change.

Narrative for Pillar 1: Your Efforts to Reduce Environmental Impact and Costs

Lehigh University's efforts to reduce environmental impact and cost have been holistic, intentional, and inventive. They encompass all aspects of sustainability - social, environmental, and economic. Some key highlights include: collaborating with three other Pennsylvania institutions to [sign a virtual power purchase](#)



[agreement for an offsite solar energy project](#) (pending legal reviews), pursuing the development of an onsite solar energy project, completing numerous [energy efficiency projects](#), developing a [Climate Action Strategy](#), establishing a student energy conservation annual competition, incorporating a water reclamation system as part of the design of Lehigh's new College of Health building, and transitioning from conventionally-fueled to electric vehicles and adding charging infrastructure.

In February 2020, Lehigh signed a [15-year virtual power purchase agreement \(VPPA\)](#) (pending legal reviews) to buy renewable energy generated by a 200+ acre solar farm. Muhlenberg College, Dickinson College, and Lafayette College were also part of this renewable energy purchasing agreement. This partnership, combined with other on-campus energy and efficiency efforts will enable Lehigh to match nearly 100 percent of its current electricity usage with renewable energy. Lehigh's share of the power will be the largest out of the four schools in the partnership. Collectively, the group's 45.9 megawatt share of the project is anticipated to help prevent over 70,000 metric tons of carbon emissions each year, which is equivalent to removing over 15,000 cars from the road. Together the four schools will be purchasing the largest amount of solar power of any group of independent higher education institutions nationally. All four schools also represent the first group of colleges and universities in Pennsylvania to enter into a power purchasing agreement. In addition to the offsite project, Lehigh recently signed a power purchase agreement to develop an onsite solar project on Goodman Campus. This project will include a dashboard to view live energy data, guest lectures, site tours, and student internships.

Lehigh is also actively working to increase energy efficiency and maximize capital investments in operations. Lehigh's building and land use philosophy incorporates our legacy and our historical character, while also taking into account connectivity and environmental stewardship. Over the last several years, Lehigh has been making investments in numerous energy efficiency projects. First, Lehigh has been reducing energy usage (and greenhouse gas emissions) throughout campus by replacing fluorescent light fixtures, bulbs, and ballasts with light-emitting diode (LED) fixtures, bulbs, and drivers. For some projects, lighting controls are also installed, such as occupancy sensors, vacancy sensors, or photoelectric (daylight) sensors. Second, Lehigh has been replacing old chillers with more energy efficient models in the Alumni Memorial Building and Zoellner Arts Center on the Asa Packer Campus. Third, Lehigh has been replacing older, fixed-speed air-handling fan motors with new variable-speed models in Maginnes Hall and Zoellner Arts Center on Asa Packer Campus and several buildings on the Mountaintop Campus including Iacocca Hall, Jordan Hall, and Building J. Lastly, Lehigh has also worked with Siemens to reprogram some HVAC control strategies used in laboratories. These changes were aimed at reducing energy while improving occupant comfort and maintaining consistent

indoor air quality. The strategies included reducing the number of air changes per hour and fume hood face velocities and setting back temperatures when rooms are unoccupied.

As climate change continues to pose an increasingly dire threat, Lehigh is furthering its commitment to climate action. In Fall 2020, Lehigh began the process of creating a bold [Climate Action Strategy](#). This strategy will build a detailed framework and serve as a comprehensive roadmap for measuring, planning, and reducing greenhouse gas emissions. It will uphold and expand on Lehigh's [2009 Climate Commitment](#), which vowed to create institutional policies and procedures to protect and improve the environment, and its commitment to the [We Are Still In Pledge](#) in 2017, a joint declaration of support for climate action that was signed by nearly 4,000 leaders, including CEOs, mayors, governors, and college presidents. The strategy is also providing experiential learning opportunities — using the campus as a living laboratory — for Lehigh students, both during its development and after it is adopted and implemented. Lehigh's Industrial Assessment Center is directly involved in the building energy audits, and Lehigh's Energy Systems Engineering program is involved in peer analysis and analyzing data from the audits.

Lehigh continuously works to promote energy conservation across campus however, efforts are concentrated during the month of November, which Lehigh has dubbed [Energy Conservation Month](#). Every November, members of the Lehigh community are challenged to be conscious of their energy consumption behaviors, to commit to adopting new energy saving behaviors, and to engage with peers and coworkers on the topic of energy conservation. This challenge is designed to reduce university-wide energy consumption leading into the cold dark winter months when lighting and heating is heavily used. At the beginning of November, Lehigh community members are encouraged to sign the [Energy Conservation Pledge](#). In the pledge, individuals select the energy-conservation actions they will commit to in the hopes of developing new habits. The pledge also asks some baseline questions for participants to assess the habits they already have (e.g.: if personal computers are left on all night, if thermostats are constantly in-use, etc.). Energy Conservation Month also features a month-long competition among all residence halls and Greek houses to encourage friendly competition between students. This competition is managed by the Office of Sustainability and heavily supported by the [Eco-Rep Leadership Program](#). Lastly, the Office of Sustainability also collaborates with several departments and student organizations to provide energy-related events and programming all month long, which are marketed campus-wide in the form of the annual Energy Conservation Month Calendar.

Lehigh continues to make progress to reduce university-wide water usage, including process, irrigation, and potable water usage as well as waste generated on campus. One prime example of a water reduction strategy that Lehigh has incorporated into the design of its new Health, Science, Technology (HST) building,



the home of the new College of Health, is a rainwater reclamation system. This system will capture rainwater that will irrigate the green roof and indoor planters and be used for flush fixtures. Approximately 280,000 gallons of reclaimed water will be used in HST annually. With the reclaim system paired with efficient flow and flush fixtures, HST is estimated to save 688,000 gallons of potable water annually, equivalent to over 2.5 NCAA pools.

In terms of reducing waste, Lehigh recognizes the role that eliminating, reducing, reusing, and recycling serves in decreasing the consumption of virgin resources. Lehigh eliminated the use of plastic straws and Styrofoam on campus (in Lehigh-run dining and retail locations). Additionally, each year (except 2020 - cancelled due to COVID-19) the Community Service Office holds a move out collection drive along with the Great South Side Sale. This sale raises approximately \$20,000 per year for the South Bethlehem community and diverts 20 tons of goods, including 1.5 tons of food from going to waste. All of the proceeds from the sale go directly back into the community to benefit children and youth programs. The Sustainability Strategic Plan 2030 outlines specific near-term, intermediate-term, and long-term goals for water and waste at Lehigh, including developing a broader campus zero-waste strategy that outlines a roadmap to a zero-waste campus by 2030.

Transportation & Parking Services is actively working on implementing changes that build a campus community for the 21st century. In 2018, Lehigh and LANTA partnered to offer free bus rides to students, faculty, and staff with a Lehigh ID. This deal is the first for LANTA with an area four-year college or university. In 2020, Lehigh joined the [EV Purchasing Collaborative](#) to leverage the buying power of fleets to make electrification more simple, affordable, and accessible. In addition, Lehigh kicked off the development of an Alternative Fuel Study to develop a plan to fully transition the campus bus and vehicle fleet to run exclusively on renewable energy. Over the last couple of years, Lehigh has purchased an all-electric bus and eight hybrid/all-electric vehicles for its fleet. Lehigh's Office of Sustainability applied for, and was awarded, a [grant from the Pennsylvania Department of Environmental Protection](#) in 2020 to add two all-electric vehicles to the LU Facilities fleet. Additionally, four electric vehicle charging stations with two ports each have been installed across two of Lehigh's campuses. Transportation & Parking Services applied for and was granted a rebate under the Driving PA Forward - Level 2 EV Charging Rebate Program from the Pennsylvania Department of Environmental Protection Grants Center to help fund the cost of each new charging station.

Over the years, Lehigh University has been recognized nationally for its sustainability efforts through various national rankings. Lehigh is consistently ranked year after year in the Sierra Club's Coolest Schools list and in The Princeton Review's Guide to Green Schools. Additionally, since 2015 Lehigh has submitted a Sustainability Tracking, Assessment & Rating System (STARS) report annually to the Association for the

Advancement of Sustainability in Higher Education. The University's Sustainability Officer represents Lehigh on the Bethlehem Environmental Advisory Council and assists with the City of Bethlehem's climate action planning efforts. Lehigh's AVP the Bethlehem Environmental Advisory Council and assists with the City of Bethlehem's climate action planning efforts. Lehigh's AVP the Bethlehem Environmental Advisory Council and assists with the City of Bethlehem's climate action planning efforts. Lehigh's AVP of Business Services serves on the board of the National Association of College Auxiliary Services.

Narrative for Pillar 2: Your Efforts to Improve the Health and Wellness of Students and Staff

Lehigh University has several health and wellness programs for students, faculty, and staff. Some of the key highlights include: Lehigh's new [College of Health](#) and its pending Fitwel and LEED certifications, achieving the [Real Food Challenge](#) goal, the [Employee Wellness Program](#), dietician/nutrition services and mental health, and the Lehigh daycare's [Eco-Healthy Child Care Certification](#).

In Fall 2020, Lehigh launched a new College of Health at a time of historic expansion within the healthcare industry. The mission of the College of Health is to understand, preserve, and improve the health and well-being of populations and communities through excellence and innovation in education, research, and service. This new college focuses on population health, which is dedicated to advancing our understanding of multiple determinants of health, and how they interact to produce health outcomes and health data analytics to drive proactive intervention to improve health for millions. The new home for the College of Health, the Health Science and Technology building, is targeting Fitwel three-star certification and LEED Gold certification. The Fitwel certification supports healthier workplace environments to help improve occupant health and productivity. This will be the first Fitwel certified building at Lehigh. There are several other LEED certified buildings on campus as well. Over the last few years, Lehigh established standards that require all new and existing campus construction be built to LEED Silver (or equivalent) standard or higher.

In 2020, in an ongoing effort to promote environmental stewardship and a healthy food system, Lehigh achieved its [Real Food Challenge Goal](#) by purchasing 20.3 percent of its food from local, organic, fair trade, and humane sources in the 2019-2020 academic year. Lehigh's Office of Sustainability, Dining Services, Sodexo, and Purchasing Services have collaborated on the challenge for the past seven years. Lehigh's efforts contribute to the overall vision of the Real Food Challenge, a national campaign to encourage campuses to increase the ratio of their food purchased from "conventional" to "real" food. Lehigh Dining is currently in the process of expanding on its commitment by collaborating with the Office of Sustainability and Purchasing

Services to develop the Lehigh University Sustainable and Healthful Food Purchasing Policy. This policy will be released in 2021.

Lehigh University encourages its entire community to commit to a healthy and active lifestyle. The university's Employee Wellness Program provides programs, resources, and activities that promote a healthy campus. One of the programs offered is Be Well: Mind, Body, Spirit. The program consists of a variety of activities and challenges that focus on key life areas that make up overall health and well-being: reaching potential, emotional, physical, capacity for change, work, and health. Each activity has a point value assigned to it and there are five possible levels to strive towards. Each level has a prize. An event that complements the Be Well program is the Benefits & Wellness Fair for faculty and staff members. Employees are able to take a few minutes from their day to meet Lehigh's benefits vendors as well as representatives from a variety of services on and off campus that staff and faculty have access to through their employment at the university. This event runs on a biennial basis.

Through Sodexo, Lehigh has an on-campus dietitian. The Registered Dietitian is trained in helping students create meal plans that work with their busy schedules. They provide nutrition counseling for a variety of topics including food allergies, food intolerances, weight management, diabetes, high blood pressure, gastrointestinal diseases, healthy eating habits, and much more. The Registered Dietitian is available for complimentary consultations on topics such as:

- Food allergies, celiac disease, diabetes, or other special dietary needs
- Eating healthy on campus
- Vegan and vegetarian nutrition
- Weight management

Lehigh also recognizes that mental health is critical. University Counseling and Psychological Services offers counseling (individual and group) and consultations (parents, faculty and staff, or regarding a peer or friend) in addition to workshops, outreach, and providing additional support.

Lehigh's health and wellness efforts go beyond faculty, staff, and students to the youngest members of our campus community, the children of Lehigh employees. Lehigh's Child Care Center, Bright Horizons at Lehigh University, was recognized as an [Eco-Healthy Child Care® facility](#) by the Children's Environmental Health Network in April 2020. Eco-Healthy Child Care® (EHCC) is a national program that partners with childcare professionals to eliminate environmental health hazards that can adversely affect children's health in or around



childcare facilities. The EHCC program endorses childcare facilities who comply with 24 of 30 simple, free, or low- cost environmentally healthy [best practices](#). These changes immediately benefit the well-being of young children.

Lehigh University has an [Environmental Health and Safety \(EH&S\) office](#) that promotes a safe and healthful environment for the University through the development and implementation of health, safety, and regulatory compliance programs and procedures. This includes hazardous waste management, NRC License administration, inspections, training sessions, and emergency response action. EH&S staff conduct regular trainings to raise awareness of potential issues and they work closely with Lehigh faculty in research labs to ensure all safety procedures are followed. In the summer of 2018, the excessive heat and humidity introduced a new challenge for Housing Services, Facilities Services, and Environmental Health and Safety. Mold was found in a number of residence halls and apartments. Using LEAN methodologies, a cross functional team was formed to create a process to quickly address and resolve the many issues that arise when remediating mold. The team mapped out the current process, identified and eliminated waste (in time and resources), and developed new solutions to address the mold issues at Lehigh. In terms of cleaning products, Lehigh’s cleaning vendor uses green cleaning products in alignment with [Lehigh’s Sustainable Purchasing Policy](#). In terms of the campus landscape, Lehigh is starting to implement sustainable landscape measures including at the new residential halls, Singleton, Hitch, and Maida where a large percentage of the area is planted with native plants, shrubs, and trees to improve soil regeneration and reduce excess runoff. Additionally, some of the current maintained lawn landscapes on Mountaintop Campus will be transitioned to native meadow landscapes in 2021.

Narrative for Pillar 3: Your Efforts to Ensure Effective Environmental and Sustainability Education

Lehigh continues to build on the progress it has made toward a sustainable future while spurring innovation and encouraging new ideas for a better, healthier, and more equitable tomorrow. While Lehigh is taking the lead in creating a more sustainable campus, it is also in turn strengthening its core research and teaching mission. By integrating sustainability into the university’s educational experience, we prepare our students to solve today’s challenges, while identifying opportunities to create a healthier and more sustainable future. Lehigh students are engaged in sustainability research, internships, and campus as a living lab opportunities. Some of the examples below include: a leftover food app and web interface and smarter trash and recycling bins to eliminate recycling contamination. Students present this great work annually at the [Lehigh Expo](#), a university-wide showcase of project work. Student sustainability competencies are assessed twice a year through a Sustainability Literacy Assessment. The results are reviewed, knowledge gaps are identified, and solutions to narrow those gaps are then implemented.



Through experiential learning opportunities that use the campus as a living lab, we arm our graduates with premium skills for the workplace of the future. Three key examples from 2020 stand out. First, a group of Computer Science and Business students worked with the Office of Sustainability and a faculty member in 2020 to develop a Hungry Hawks leftover food app and web interface. Every day (pre-COVID-19) departments, offices, and clubs hold events and meetings across campus with food. There is often leftover food at these events and meetings that gets thrown away. This app and web interface will reduce the amount of leftover food that is thrown away on campus and reduced food insecurity. Second, a group of Technical Entrepreneurship students and faculty mentors are developing a prototype for smart, automated trash and recycling bins to help solve the campus recycling contamination issue. The smart bins can scan materials as they are inserted; recycling bins will be programmed to only accept allowable recyclable materials that are both clean and empty (free of food and liquid residue). Third, an interdisciplinary group of students are working to develop a food carbon footprint calculator for Lehigh Dining to be able to display an icon next to menu items indicating how carbon intensive the menu item is. This will help to drive behavior change among faculty, staff, and students when it comes to food choices.

Our students also gain invaluable sustainability-related internship experience throughout their time at Lehigh. There are two notable examples from 2020. A Lehigh graduate student in Lehigh's Environmental Policy Program applied for, and was accepted into, the University of New Hampshire's Sustainability Fellowship. He worked closely with the City of Kennebunk in Maine to develop its annual greenhouse gas inventory. He then returned to Lehigh and is assisting with the completion of Lehigh's annual greenhouse gas inventory. Additionally, another graduate student in that program was a community fellow with Community Action Development Corporation of Bethlehem. He worked with the Bethlehem Schools to support their Farm to School Program, environmental after school programming, and building a community garden program. Lehigh also incorporated education and research opportunities into both of its offsite (pending legal reviews) and onsite solar agreements. The project developers will conduct guest lectures, host summer interns, and provide access to real-time production data from the solar assets for research purposes.

In addition, Lehigh has been actively working to integrate sustainability throughout the curriculum. Each year, the Office of Sustainability and the Lehigh Sustainability Council host a sustainability [curricular integration workshop](#). Additionally, in 2020, the Office of Sustainability and the Lehigh Sustainability Council developed a College Level Sustainability Framework to guide colleges in incorporating sustainability into academics, experiential learning, and research. In working with Library and Technology Services, a [Teaching Sustainability Library Guide](#) was also developed to assist faculty in incorporating sustainability

into their classes. As part of Lehigh's Climate Action Strategy development process, the Office of Sustainability, in collaboration with faculty, developed a class toolkit (using the eight ways to change a course Piedmont/Ponderosa model) to assist faculty from all five colleges at Lehigh in integrating climate action into their classes.

As a premier research institution, Lehigh's Energy Research Center finds solutions to national and global energy and energy-related problems by collaborating with federal, state, and local agencies, energy businesses, technology developers and suppliers, the research community, and academic institutions. The Center is committed to innovative research and development, while recognizing the important link between energy and the environment. The Energy Research Center brings together faculty and professional staff within Lehigh University to conduct research, foster partnerships between government and industry, provide funding, research and educational opportunities to university graduate and undergraduate students, and promote international research collaboration.

Lehigh engineers are making cutting edge breakthroughs in technologies to produce green hydrogen. A team of researchers are the first to utilize a single enzyme biomineralization process to create a catalyst that uses the energy of captured sunlight to split water molecules to produce hydrogen. Solar-driven water splitting is a promising route towards a renewable energy-based economy. The generated hydrogen could serve as both a transportation fuel and a critical chemical feedstock for fertilizer and chemical production. Both of these sectors currently contribute a large fraction of total greenhouse gas emissions.

Amid the coronavirus shutdown, Lehigh engineers made an impact on the COVID-19 response within the local community and across their fields of expertise. In particular they answered a call to help hospitals weather a shortage of personal protective equipment (PPE), which also reduced the amount of PPE waste generated. A team of faculty in the Department of Electrical and Computer Engineering, staff and student volunteers from Lehigh's Center for Photonics and Nanoelectronics, as well as doctors from St. Luke's University Health Network came together, all practicing social distancing in their homes. Together, they developed a solution that they built in their garages all while collaborating via Zoom meetings, phone calls, and hundreds of emails and text messages. The team completed the fabrication and installation of a "High-Throughput Symmetrical and Non-Shadowing Ultraviolet Sterilization System" device at St. Luke's. This device exposes the masks to UV-C light. This specific range of ultraviolet light can cause changes in the DNA and RNA of viruses and other pathogens, including the coronavirus. The team has filed two patent applications associated with this invention.



Lehigh's Design lab team also took on an essential role early on during the pandemic in 3D printing face shields. These shields increase the life of the N95 masks that providers are wearing, thus reducing waste. A small team of faculty, staff, and students joined a product development team at Knoll, a local design firm, to design a 3D-printed dual headband with an adjustable, easily sanitized neoprene head strap so that it can be cleaned properly. Lehigh designated the team as essential workers, which allowed them to work on campus to 3D print the headband and support pieces and to use the laser printer to cut the shields, comfort guard, and neoprene strap. By the end of June, they had delivered more than 5,000 shields to local hospitals and emergency management agencies.

Additionally, Lehigh University is engaged in civic engagement work on climate action. The University works with the City of Bethlehem on climate action planning and was involved as a key stakeholder on the Larger Organization and Institution Working Group for the City's Climate Action Plan. Additionally, Lehigh supports the local community on other environmental activities such as developing and completing a Sustainability Impact Assessment on the potential closing of Packer Avenue (a major thoroughfare through campus) to vehicular traffic. This project helped bring together the community, while also bringing to light important potential impacts of closing this main thoroughway. Students in the U.S. Environmental Policy and Law class, under the mentorship of a faculty member, assessed traffic-related exposure to black carbon particulate matter on pedestrian routes that walkers and cyclists could avoid if a pedestrian bridge were installed as an alternative route for crossing the Lehigh River. Through Lehigh's Office of Creative Inquiry and the Lehigh Valley Social Impact Fellowship a group of students and a faculty mentor developed a highly immersive virtual reality space for educational settings, including Building 21 high school, that investigates the history, ecology, and environmental issues of the Lehigh River watershed. All three of these civic engagement projects emphasize Lehigh's commitment to engage students in sustainable principles that go above and beyond the campus community.