
UNIVERSITY OF VIRGINIA

SUSTAINABILITY

ANNUAL REPORT



SUSTAINABILITY · UVA
From the Grounds Up

2020–2021

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The 2020-2021 UVA Sustainability Annual Report provides a snapshot of collaborative work accomplished by students, staff, faculty, and alumni to advance UVA's sustainability goals over the past academic year. Aligned with the UVA Sustainability Plan's Engage, Steward, Discover framework, this report describes progress achieved in each area of the Plan with an accompanying story to illustrate a few of the many highlights from the year.

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OVERVIEW

SUSTAINABILITY AT THE UNIVERSITY OF VIRGINIA CALLS FOR INGENUITY TO PROMOTE THE WELL-BEING OF THE COMMUNITY, SOLVE LOCAL AND GLOBAL CHALLENGES THROUGH SCHOLARSHIP AND PRACTICE, EDUCATE ETHICAL LEADERS AND STEWARD THIS SPECIAL PLACE.

The University of Virginia's leadership role in environmental stewardship and broader social and economic sustainability issues has evolved and expanded with significant acceleration over the past decade. UVA's prominence in sustainability continues to build upon many years of Board of Visitors leadership and the work of thousands of individuals.

The University's robust, interconnected approach to sustainability develops transformative and high-impact solutions across curriculum, research, operations and community engagement, with more than 370 sustainability-related courses, over 250 faculty involved in sustainability-related research (representing over 83% of academic departments), more than 30 sustainability-focused student groups, dozens of programs, over 100 annual events and countless individual actions. Strategic collaboration on pan-University sustainability initiatives leverages the combined strengths of the University Committee on Sustainability, Office for Sustainability, Environmental Resilience Institute, Student Council Sustainability Committee, Global Environments + Sustainability academic track and many other related efforts.

UVA's strategic sustainability framework seeks pan-University and interdisciplinary connections at all levels to ENGAGE our community and build sustainability awareness; STEWARD our resources on Grounds and beyond; and DISCOVER solutions to global challenges through research, curriculum, and using the Grounds for engaged learning.

Because of this collaborative and robust approach, UVA received its fourth AASHE STARS certification – STARS Gold – from the Association for the Advancement of Sustainability in Higher Education in early 2021. AASHE STARS (Sustainability Tracking, Assessment, & Rating System) measures an institution's sustainability performance across curriculum, research, engagement, operations, planning, administration and innovation. UVA is currently one of 50 institutions worldwide with Gold certification under the most recent version of the rating system.

A pan-University team led by the Office for Sustainability and the Office of the Architect compiled data for this year's submission, which is completed every three years. The AASHE STARS team develops its criteria in close consultation with a national steering committee and technical advisors and updates the criteria periodically throughout the years. UVA's performance was particularly strong across the following credits:

ACADEMICS AND RESEARCH

- Undergraduate Program
- Graduate Program
- Immersive Experience
- Sustainability Literacy Assessment
- Incentives for Developing Courses
- Campus as a Living Laboratory
- Support for Sustainability Research

ENGAGEMENT

- Student Life
- Outreach Materials and Publications
- Outreach Campaign
- Community Partnerships
- Inter-Campus Collaboration
- Participation in Public Policy
- Trademark Licensing

OPERATIONS

- Sustainable Dining
- Biodiversity
- Support for Sustainable Transportation
- Hazardous Waste Management
- Rainwater Management

PLANNING AND COORDINATION

- Sustainability Coordination
- Sustainability Planning
- Reporting Assurance
- Assessing Diversity and Equity
- Support for Underrepresented Groups
- Affordability and Access

INNOVATION

- Climate Action Together
- The Green Street & Green Building Standards
- Memorial for Enslaved Laborers & Racial Equity Goals
- Limiting the Community Spread of COVID

UVA Sustainability looks forward to continuing our connected and collaborative efforts to advance the University of Virginia as a global leader in creating equitable, replicable solutions to pressing, existential environmental challenges. For more detailed information, including on programs and initiatives, please visit www.sustainability.virginia.edu.

2020-2030 GOALS



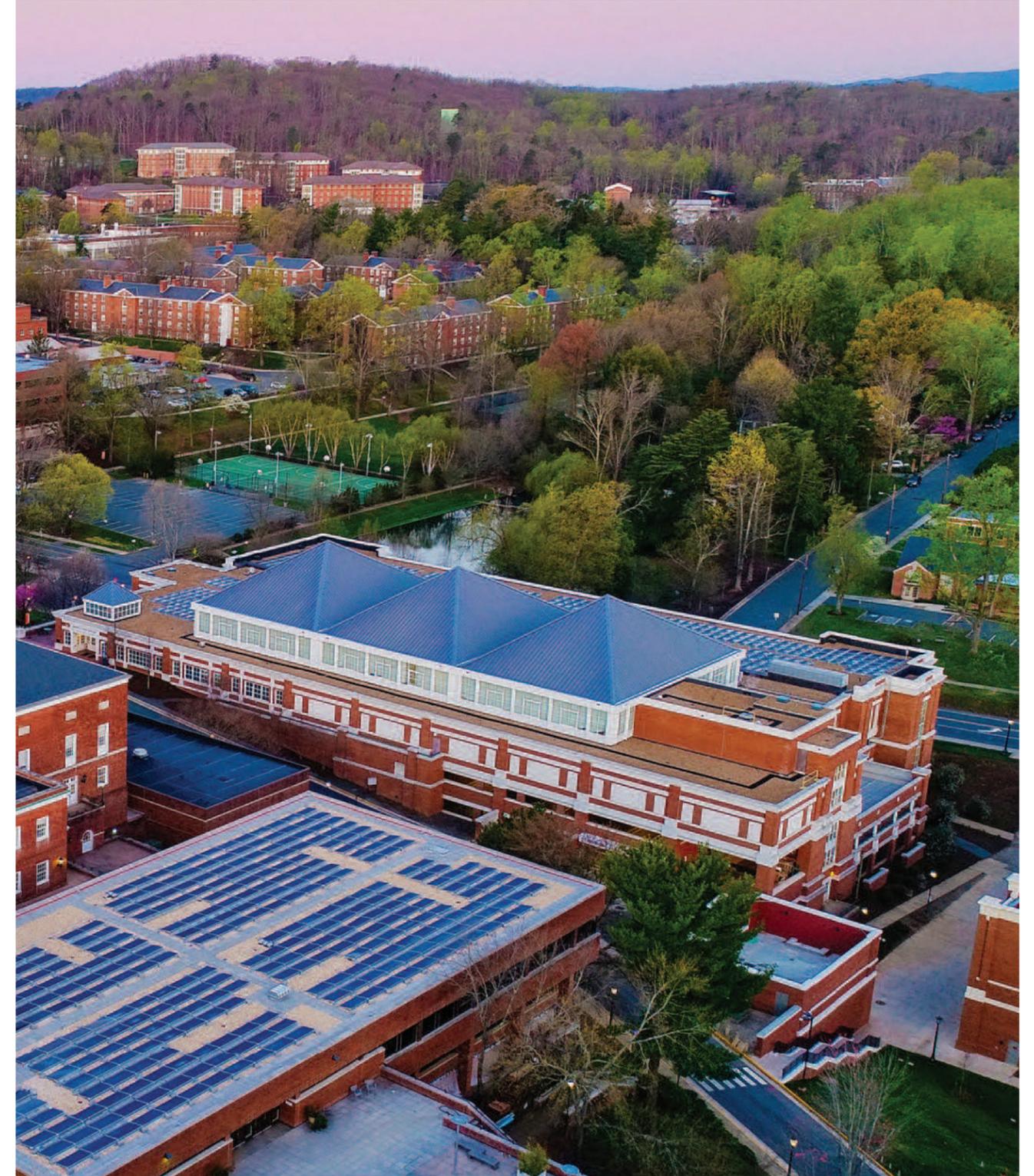
Building upon the Board of Visitors' December 2019 sustainability resolution, in October 2020 UVA announced the adoption of its second Sustainability Plan, outlining ten bold goals within a 'Steward, Engage, Discover' framework to guide progress for the next decade.

The 2020-2030 UVA Sustainability Plan is an important next chapter in UVA's sustainability journey and builds upon sustainability commitments in UVA's Great and Good strategic plan, previous Board of Visitors sustainability resolutions and the 2016-2020 Sustainability Plan. Schools and units, with guidance from the University Committee on Sustainability, are currently developing school and unit plans in alignment with the 2030 Sustainability Plan.

UVA is also working with William & Mary in a partnership focused on the carbon neutrality by 2030 goal and with the City of Charlottesville and Albemarle County on a coordinated approach to climate action.

UVA's goals:

1. Be Carbon Neutral by 2030 + Fossil Fuel-Free by 2050
2. Reduce Water Consumption 30% compared to 2010 by 2030
3. Reduce Waste Footprint to 30% of 2010 totals by 2030 (a 70% reduction)
4. Reduce Nitrogen 30% compared to 2010 by 2030
5. Increase Sustainable Food to 30% by cost by 2030
6. Advance Equitable Places
7. Build Accountability
8. Enhance Sustainability Teaching
9. Enhance Sustainability Research
10. Support Grounds-Engaged Learning



2020–2030 PLAN PROGRESS

ENGAGE: Many opportunities for engagement continued virtually this year. Food and Justice in Virginia, a virtual Martin Luther King Jr. Community Celebration event co-hosted by Morven Programs & Lifetime Learning in January, drew over 950 registrants for discussion about ensuring equitable access to fresh, nutritious and affordable food; protecting the health and safety of farm and food service workers; and addressing legacies of harm, particularly to Black and Indigenous farmers. April’s month-long “Earth Day Every Day” celebration focused on connecting and amplifying over 50 events planned by Charlottesville and UVA groups. Many of the events were led by students, including a tour of bee-friendly landscape features on Grounds, a discussion about justice, equity, diversity and inclusion in outdoor recreation and a webinar co-hosted by UVA and William & Mary students about the two schools’ carbon neutrality partnership.

UVA’s Equity and Environment Fund entered its fourth year and supported projects involving dozens of organizations at UVA and in the Charlottesville area. For example, the fund is supporting a UVA student intern who will hold a leadership role with the Community Climate Collaborative’s six-week K-12 summer climate justice education program, in partnership with the Boys and Girls Club.

STEWARD: The University is making great strides towards achieving UVA’s goals to be carbon neutral by 2030 and fossil fuel-free by 2050. Overall emissions in 2020 were reduced 43.9% compared to 2009 levels, although those reductions are expected to increase to some extent as the University returns to post-pandemic operations. In 2019 UVA was named the EPA Green Power Champion of the Atlantic Coast Conference for the highest total renewable energy portfolio in the ACC. UVA is currently ranked in the top 30 (#23) in the EPA’s top colleges and universities for annual total green power usage, in large part because of UVA’s two utility-scale solar projects (Hollyfield and Puller) as well as solar panels in six locations on Grounds. The Office for Sustainability is facilitating the development of an updated climate action plan, outlining strategies to achieve carbon neutrality by 2030, which will be informed by a strategic thermal energy study.

UVA also has a strong sustainable buildings program. UVA has earned 74 LEED certifications at all levels to date, including at the College of Wise. This represents over 1.3 million square feet of LEED certified space. Additionally, UVA Green Building Standards in the University’s Facility Design Guidelines outline prescriptive and process requirements for all projects. Since its inception in 2009, UVA’s internal retro-commissioning team, Delta Force, has saved \$31 million and avoided over 210,000 metric tons of greenhouse gas emissions through energy conservation projects in UVA buildings. In April 2020, after it became clear that University operations would be significantly scaled back for the semester due to COVID-19, a group of building energy stakeholders convened to evaluate opportunities to safely reduce building energy consumption. Representatives from FM Maintenance Zones, Systems Control and the Office for Sustainability developed a tiered system to set back underutilized buildings while prioritizing occupant safety. In all, nearly 100 buildings were set back, reducing energy use by over 20% and saving the University \$1.7 million in energy costs during a time of financial stress.

Waste minimization and diversion is also a major focus area. Since opening in April 2018, the UVA ReUSE Store has diverted 75,000 items of office furniture, general office supplies, electronics and more, the equivalent of 4.1 million pounds. In March 2021 Governor Northam issued Executive Order 77, which requires state agencies to discontinue buying, selling or distributing certain types of plastics (disposable plastic bags, single-use plastic and polystyrene food service containers, plastic straws and cutlery, and single-use plastic water bottles) by July 21. The order also requires state agencies develop a plan to eliminate the buying, selling or distribution of all non-medical single-use plastic and expanded polystyrene objects by September 20. UVA has formed a pan-University working group, facilitated by the Office for Sustainability, to develop and implement plans to ensure compliance with this executive order.

DISCOVER: The Environmental Thought and Practice major was reinvigorated this year and the interdisciplinary Global Environments + Sustainability program continues to grow and thrive, with 39 new students admitted through a highly competitive application process this year.

With many internships cancelled in summer 2020, students were seeking real-world learning and career experiences for this academic year and summer. The Committee on Sustainability’s Teaching and Research Subcommittee partnered with the Career Center to support 20 sustainability-related internships, enabled two new internships at the UVA Equity Center and funded five internships with the Virginia Scientist-Community Interface. The Environmental Resilience Institute’s Graduate Summer Fellows, Intern and Extern programs also provided many opportunities for students to gain experience with sustainability careers.

The Weldon Cooper Center’s Energy Transition Initiative is helping Virginia chart a path towards eliminating greenhouse gas emissions by 2050. With the help of nearly two dozen student researchers, the ETI has begun to identify possible decarbonization pathways for the state. In January, a major modeling exercise was published describing how Virginia might achieve zero energy emissions by 2050. This robust team has also created a decarbonization dashboard for the state.

The Environmental Resilience Institute recently commenced work on the Climate Restoration Initiative with support from the Jefferson Trust. The initiative’s network of faculty is working to understand how a portfolio of negative emissions strategies that remove carbon dioxide from the atmosphere can be integrated across Virginia and beyond. ERI also held a virtual Climate Ambition Summit, in partnership with UVA’s Office of Engagement, Career Center, Office of the President, Vice President of Research and Office of Graduate and Postdoctoral Affairs. The event series convened nearly 3,000 registrants. In June 2021 the University announced two initial Grand Challenge Research Investments, one of which is for Environmental Resiliency and Sustainability, and plans to make substantial investments in this research.

ENGAGE

“Engage” seeks to build unity and cohesiveness of communication, foster sustainability literacy and awareness across Grounds and with the broader community and convey the breadth and interconnectedness of sustainability.



ENGAGE

YEAR IN REVIEW

Despite the COVID-related challenges of the past year, UVA continued to strengthen sustainability on Grounds and beyond through creative communication, engaging virtual and in-person events and new collaborative partnerships. Three major themes guided engagement efforts: building connections, strengthening partnerships and centering equity. The following pages provide an overview of how UVA Sustainability worked to align programming with these engagement themes, the 2020–2030 Sustainability Plan, and President Ryan’s Great and Good Plan.

BUILDING CONNECTIONS

As the COVID-19 pandemic forced the University to adapt to new procedures and environments, UVA Sustainability emphasized the importance of staying connected and involved despite a constantly changing landscape. Through interactive social media campaigns, alumni features and numerous virtual programs – including over 50 events for Earth Day Every Day in April – the UVA community continued to develop a shared vision of a more sustainable Grounds.

STRENGTHENING PARTNERSHIPS

With the launch of the 2020–2030 Sustainability Plan, forging and strengthening partnerships became an essential priority in achieving ambitious goals. The “Balloon Brigade” serves as a great example; during the Class of 2020 and 2021 graduation ceremonies, the UVA Office for Sustainability partnered with Facilities Management, the President’s Office and UVA Health to collect and donate hundreds of balloons to the UVA Children’s Hospital, reducing waste and giving back to the community.

CENTERING EQUITY

There has been increased focus on racial equity and justice over the past year, steering the UVA community to explore conversations of diversity, equity and inclusion in all aspects of programming. Through anti-racism trainings, equity audits and conversations with Black and Brown leaders at the forefront of sustainability movements, many UVA Sustainability stakeholders dove into more honest and critical evaluations this year, with the hope to be better and do better now and in the future.

35+

SUSTAINABILITY STUDENT ORGANIZATIONS

96

SUSTAINABILITY VOLUNTEERS

102

EVENTS

113

ARTICLES

5,300+

NEWSLETTER SUBSCRIBERS

6,510

SOCIAL MEDIA FOLLOWERS

\$24,595

AWARDED TO STUDENT-LED PROJECTS BY THE EQUITY & ENVIRONMENT FUND

STUDENT ENGAGEMENT

The Office for Sustainability's three student leadership programs utilized creative and engaging outreach tactics to keep students excited and involved on Grounds despite social distancing and increased COVID protocols.

The Sustainability Advocates, one of the Office for Sustainability's longest standing student programs, invites around 40 students to join a campaign-based leadership program. Participants choose a sustainability-focused theme and organize an end-of-year outreach project. The themes this year were food equity and climate change, and students organized events ranging from food drives to alumni panels to art workshops.

The Eco-Leaders program, established in 2019 as a partnership between the Office for Sustainability and Housing and Residence Life, allows on-Grounds residents to serve as sustainability representatives in their dormitory spaces and connect fellow residents to sustainability. Twenty-five Eco-Leaders worked with their Association Councils to organize sustainability-focused programs, encourage waste minimization practices and share relevant communications with their peers.

Established in Spring 2021, the Zero Waste Ambassadors work to minimize waste by educating their peers on composting best practices. With COVID-19 necessitating UVA Dine to switch to all single-use compostable materials, the ZWAs monitored compost bins daily to avoid contaminants. This program allowed students to gain leadership skills and play a direct role in UVA's waste minimization goal.

SUSTAINABILITY CAREER RESOURCES

With COVID-19 impacting hiring across sectors, the Office for Sustainability and UVA Career Center developed programming and resources geared towards sustainability-focused career and internship preparation for UVA students. Two notable events, the LinkedIn to Sustainability Workshop and the Energize Your Job Search panel, attracted over 50 students interested in expanding their professional networks and connecting with alumni across various fields. The Office for Sustainability LinkedIn page increased followers by 50% and serves as one of the most active UVA Sustainability social media platforms.



ENGAGE

EQUITABLE PLACES

UVA STUDENT GARDEN

Throughout the academic year the UVA Student Garden became a gathering point for various student and community groups to learn about the intersection of food, equity and sustainability. A partnership between UVA Dine and the Office for Sustainability, the student garden team organized 48 volunteer workdays, attracting over 50 student volunteers to lay compost, maintain beds and harvest fruits and vegetables. Numerous student-contracted independent organizations, including Alpha Phi Omega, Bee Grounds UVA and the Environmental Science Organization, participated in educational events and garden workdays.

The UVA Student Garden also furthered conversations about food justice and equity on Grounds. Each week, volunteers collaborated with the UVA Food Pantry to harvest and deliver fresh produce to the five pantries across Grounds.



EQUITY & ENVIRONMENT FUND

This student-led fund for projects at the intersection of equity and the environment entered its fourth year and helped support more projects than ever in the spring 2021 semester. This year's 13 Equity & Environment Fund projects received a total of \$24,595 in support and involved dozens of organizations at UVA and in the Charlottesville area. Project highlights from this year include:

CLIMATE JUSTICE SUMMER PROGRAM

The Equity & Environment Fund is supporting a six-week summer climate education program operated by the Community Climate Collaborative (C3) in partnership with the Boys & Girls Club. \$5,000 was awarded for C3 to hire a UVA student intern to take a leadership role in the program. This intern will help teach area K-12 students about local climate impacts and engage them in activities such as taking surface temperatures with infrared thermometers, creating a climate-themed mural and making commitments to everyday actions that can help address the climate crisis.

UVA FOOD PANTRY FRIDGE PROJECT

Led by the Sustainability Advocates' Food Equity Team, this project secured funding for a new Energy Star-rated refrigerator for the UVA Community Food Pantry. This new fridge enables the pantry to store more vegetables and other fresh, plant-based foods – meaning easier access to healthy produce for students in need.

MENSTRUAL MOVEMENT: PERIOD EQUITY AT UVA

UVA Sustainability, the Women's Center and affiliated student groups co-organized a conversation about menstrual care products, sustainability and equity. The organizers also donated 70 reusable menstrual cups to community organizations like the Shelter for Help and Emergency as part of the event.



“ WE WANT TO FOCUS ON EQUITY AND EDUCATION, ENGAGING WITH STUDENTS BY PROVIDING THE SPACE, KNOWLEDGE, AND SUPPLIES TO EXPERIMENT WITH GROWING THEIR OWN FOOD WHILE ALSO PROVIDING FRESH PRODUCE TO THOSE IN THE UVA COMMUNITY WHO NEED IT. ”

Elizabeth Williams '21,
Student Garden Coordinator

GREEN ATHLETICS

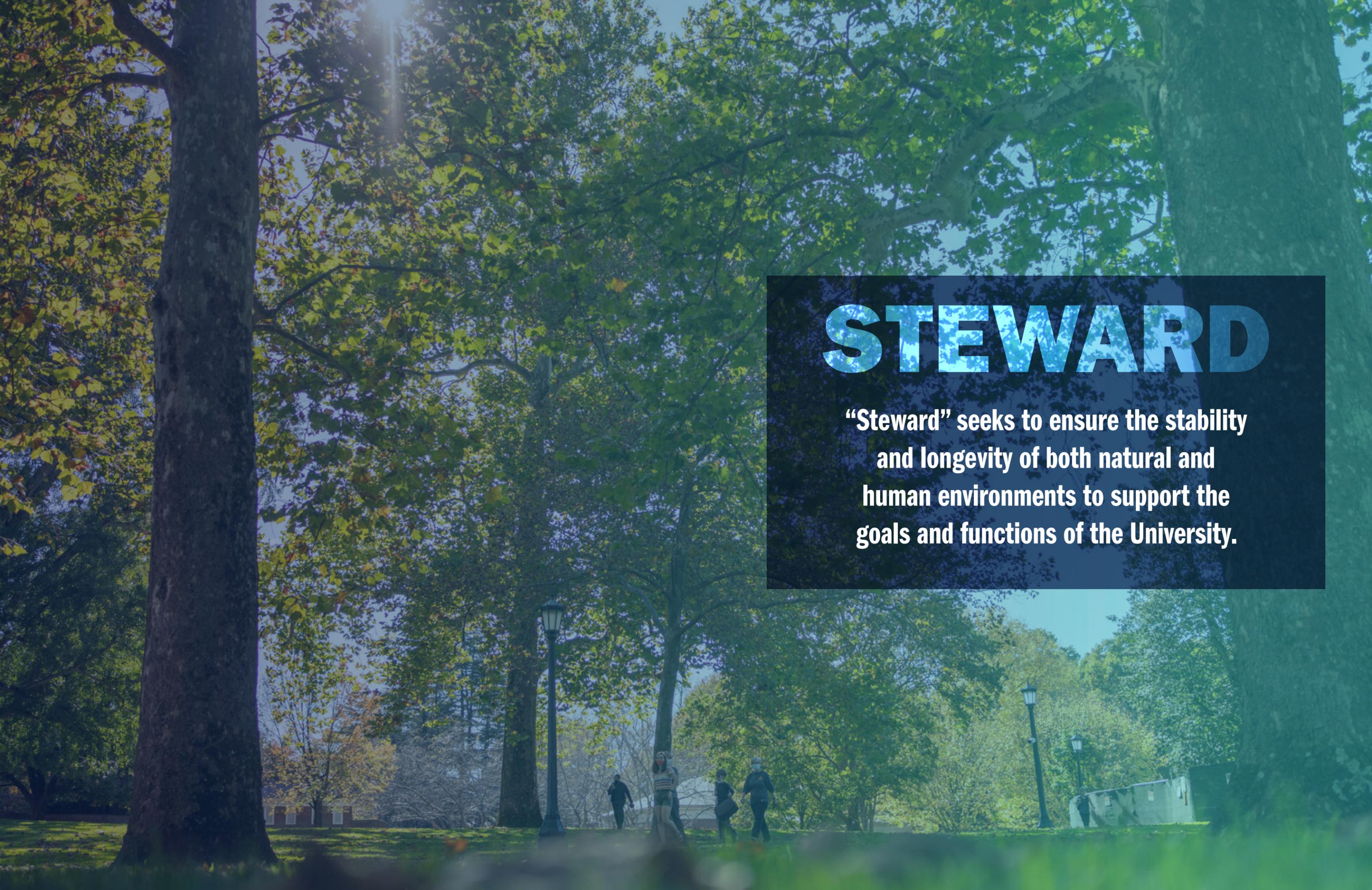
The student-led Green Athletics group typically focuses on waste minimization efforts inside athletic spaces, but this year the group prioritized topics of intersectional sustainability. Student-athletes from multiple teams organized programs aiming to giving back to the community, including a clothing drive with UVA's Soles4Souls organization which collected over 150 clothing items to donate to community members. UVA Green Athletics also connected with other Atlantic Coast Conference schools by creating and expanding the ACC Sustainable Athletes group. Group chair and UVA student-athlete Sadey Rodriguez organized a three-part speaker series discussing climate change and racial justice for ACC student-athletes.



EARTH DAY EVERY DAY

April's month-long "Earth Day Every Day" celebration focused on connecting and amplifying more than 50 events planned by Charlottesville and UVA groups. Many of the events were led by students, including a tour of bee-friendly landscape features on Grounds; a panel on equitable access to environmentally friendly menstrual hygiene products; a discussion about diversity and inclusion in outdoor recreation; and more. The UVA Office for Sustainability also collected over 20 Green Neighbor videos showcasing tips from across the community. These short videos allowed Charlottesville and Albemarle residents to inspire each other to adopt new sustainable practices and forge community connections despite physical distance.





STEWARD

“Steward” seeks to ensure the stability and longevity of both natural and human environments to support the goals and functions of the University.

STEWARD

YEAR IN REVIEW

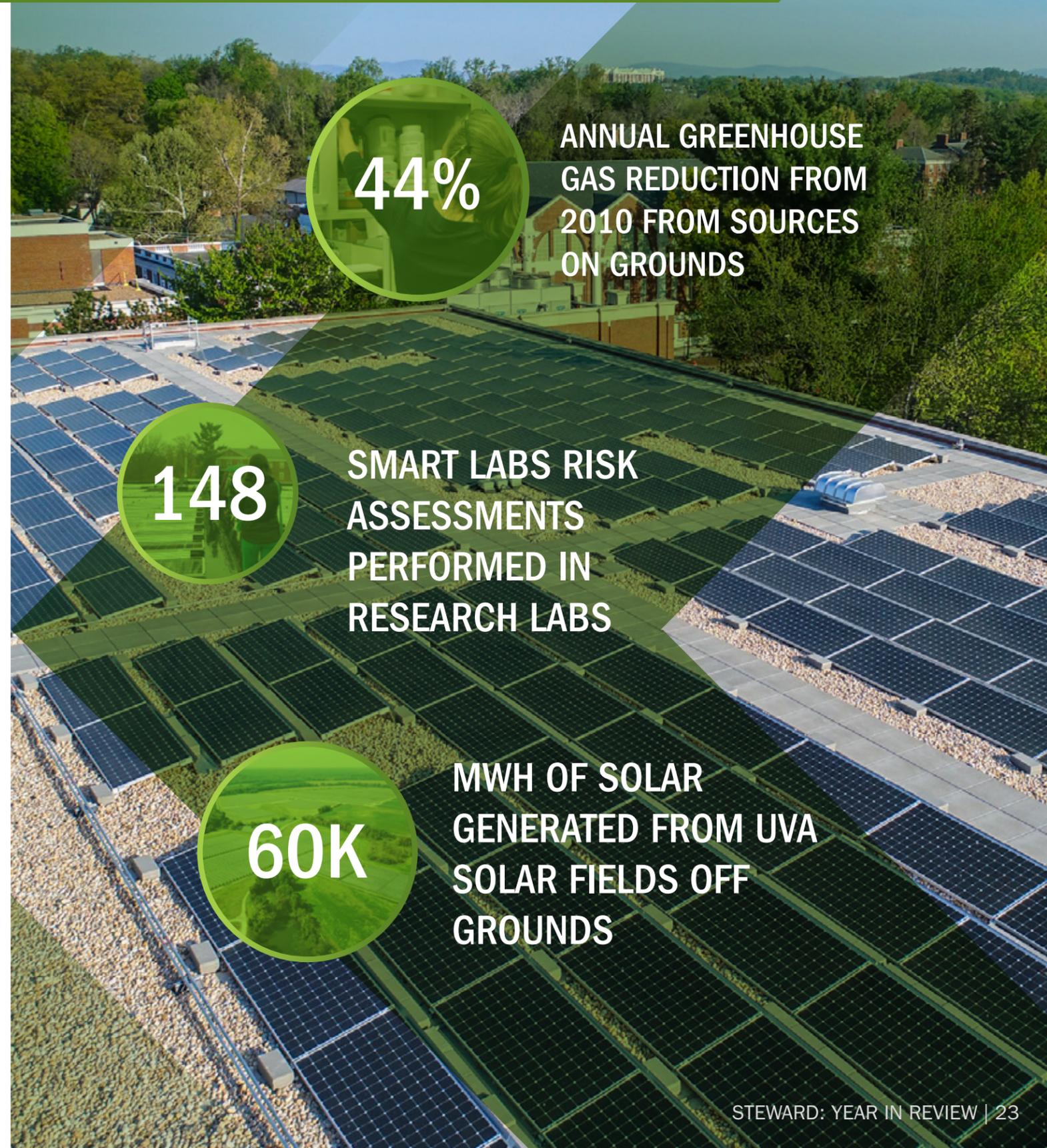
With 560 buildings spanning 18 million square feet and hundreds of active construction projects supporting a growing population, UVA's environmental footprint would continue to increase in tandem without deliberate action. UVA is reducing this impact through strategic planning and piloting initiatives to test for scaling within and beyond Grounds.

CLIMATE ACTION:

In 2019, UVA announced ambitious sustainability goals for 2030, including the goal to be carbon neutral in 2030 and fossil fuel-free in 2050. In calendar year 2010, the baseline year for emissions analysis, UVA's Scope 1 and Scope 2 greenhouse gas (GHG) emissions footprint was 291,124 metric tons of carbon dioxide equivalent (MTCDE). In calendar year 2020, emissions decreased to 163,327 MTCDE, resulting in a 43.9 percent reduction in emissions from the baseline. UVA's GHG footprint includes UVA Health, which contributes approximately 30 percent of the total emissions produced by energy consumption.

ENERGY:

UVA reduced its energy use intensity (defined as total source energy use divided by total square footage) by 22% between fiscal year 2010 and 2020. This goal was developed in association with the U.S. Department of Energy's Better Buildings Challenge.



44%

ANNUAL GREENHOUSE GAS REDUCTION FROM 2010 FROM SOURCES ON GROUNDS

148

SMART LABS RISK ASSESSMENTS PERFORMED IN RESEARCH LABS

60K

MWH OF SOLAR GENERATED FROM UVA SOLAR FIELDS OFF GROUNDS

STEWARD

YEAR IN REVIEW

NITROGEN:

Since 2010, the baseline year for nitrogen analysis, UVA has reduced its nitrogen footprint by 74 metric tons of nitrogen (MT N), a 26% reduction. Major initiatives driving the progress include decreases in nitrogen associated with food production as well as energy use, including both purchased utilities and on-site utilities.

MATERIALS AND WASTE:

Since 2010, UVA has reduced its waste generation by 2.8%. In 2020, UVA landfilled 7,227 tons of waste, a decrease compared to the 7,436 tons landfilled in 2010.

FOOD:

UVA Dine increased its sustainable food purchases measured as a percentage of total expenditures to 33%, an increase of 14% over the prior year.

736

SQUARE MILES OF
COMMUNITY NITROGEN
FOOTPRINTING IN
PROGRESS

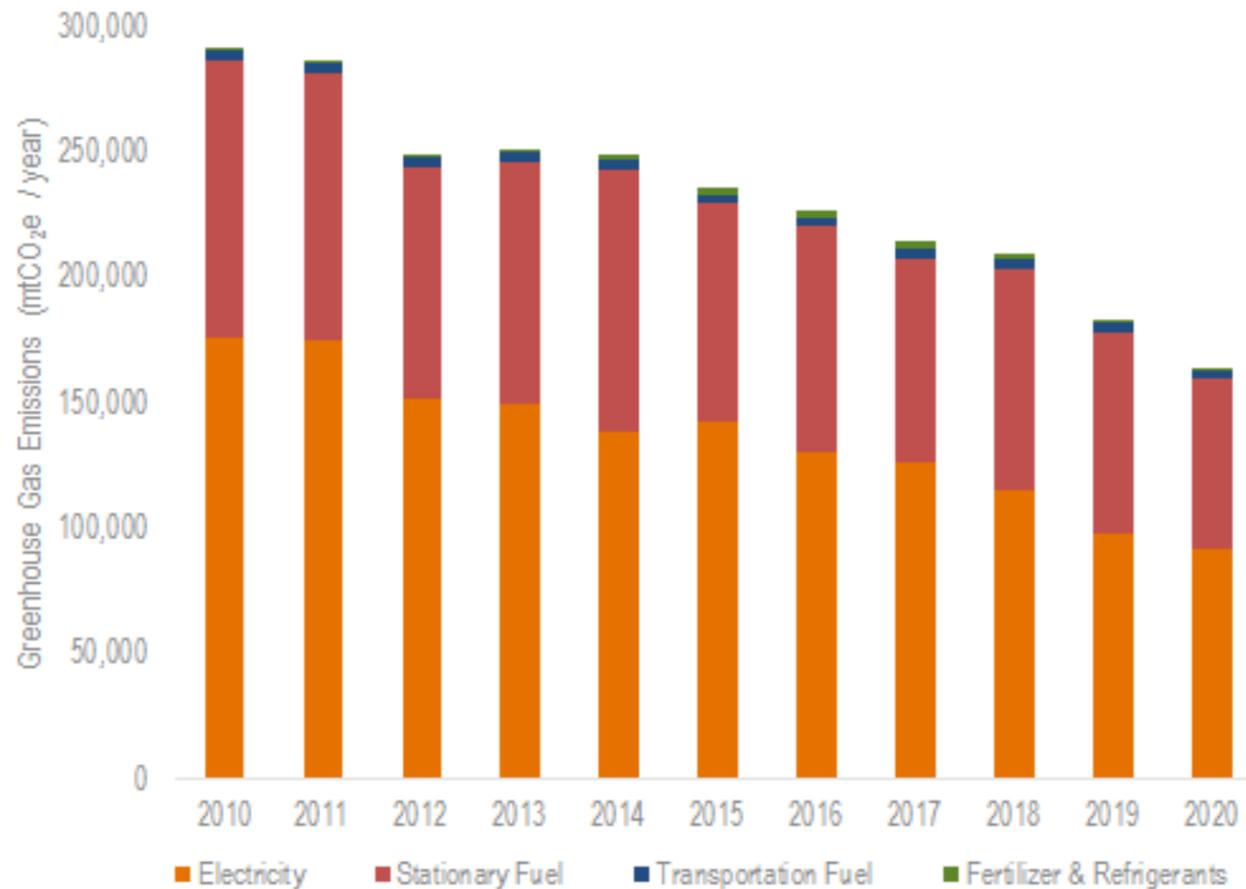
615

TONS OF
COMPOST
DIVERTED

10

YEAR ANNIVERSARY
OF THE MORVEN
KITCHEN GARDEN

GREENHOUSE GAS EMISSIONS 2010-2020



GOAL: CARBON NEUTRAL BY 2030 - FOSSIL FUEL-FREE BY 2050



REDUCING EMISSIONS

In 2019, UVA met its 2025 climate goal to reduce overall emissions by 25%. Spurred on by this overall success and the growing impetus for deeper climate action, UVA committed to carbon neutrality by 2030 and fossil fuel-free by 2050. To chart a path to carbon neutrality, UVA has been engaged in a collaborative climate action planning initiative. The culmination of this effort is the 2030 UVA Climate Action Plan, which is expected to be released in the coming months.

UVA's climate action plan includes a comprehensive list of decarbonization strategies that can be leveraged over the coming decade to set the University on a path to net zero carbon emissions by 2030. Student input was instrumental in developing an initial list of strategies, which were then evaluated and elaborated on by working groups of UVA subject matter experts.

Overall emissions in 2020 were reduced 43.9% compared to 2009 levels, although some of those reductions are expected to bounce back up as the University returns to post-pandemic operations.

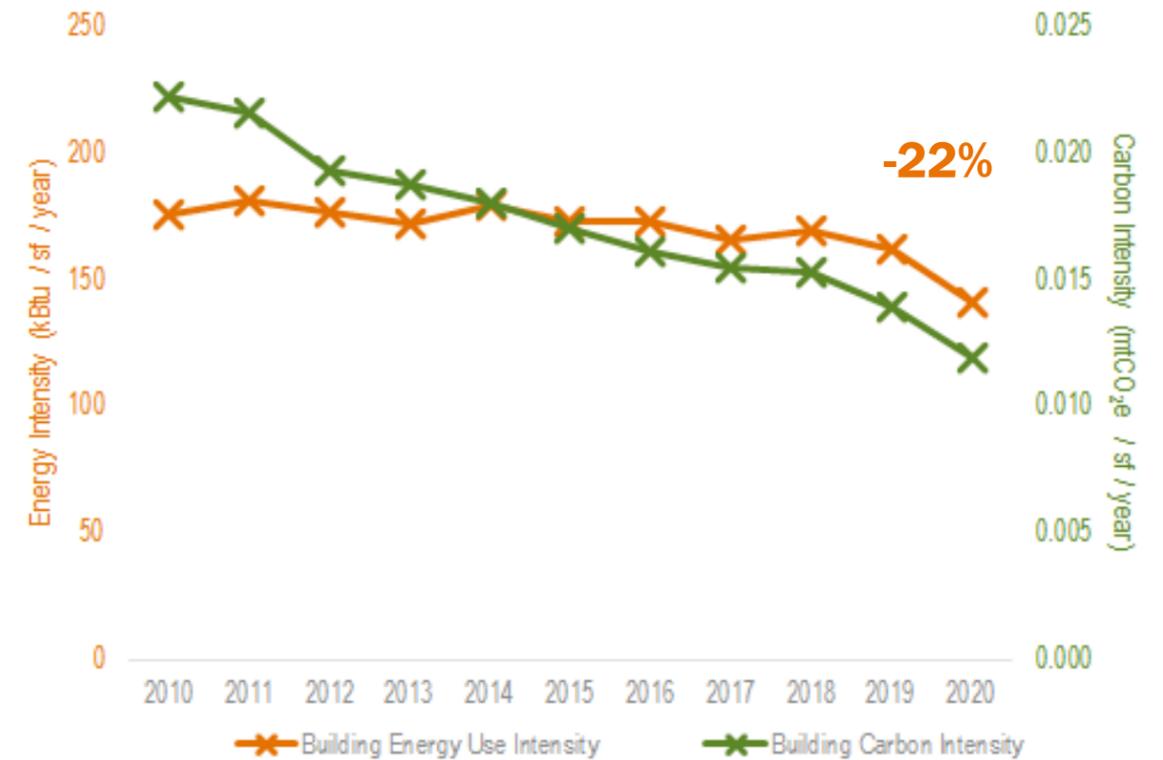
BUILDING SETBACK INITIATIVE

In April 2020, after it became clear that University operations would be significantly scaled back for the semester due to COVID-19, a group of building energy stakeholders was convened to evaluate opportunities to safely reduce building energy consumption. Representatives from Zone Maintenance Teams, Systems Control, and the Office for Sustainability developed a tiered system to set back underutilized buildings while prioritizing occupant safety. In all, nearly 100 buildings were set back, reducing energy use by over 20% and saving the University \$1.7 million in energy costs during a time of acute financial stress.

“ [UVA IS] ON TRACK TO MEET [ITS] ENERGY SAVINGS TARGET AND ACHIEVE MEANINGFUL ENERGY COST SAVINGS ACROSS [ITS] BUILDING PORTFOLIO. WE VALUE YOUR EXEMPLARY LEADERSHIP AND WILLINGNESS TO SHARE YOUR SUCCESSFUL ENERGY EFFICIENCY STRATEGIES AND SOLUTIONS WITH THE MARKET. ”

Maria T. Vargas,
Director Better Buildings Initiative, U.S. Department of Energy

ENERGY USE INTENSITY 2010-2020



GOAL: REDUCE BUILDING ENERGY USE INTENSITY 20% BELOW 2010 LEVELS BY 2023



SMART LABS + GREEN LABS

Lab buildings represent one of the greatest opportunities for energy savings on Grounds in accordance with the new carbon neutrality and fossil fuel-free goals. The Smart Labs program is a proven framework for optimizing safety and efficiency in lab buildings. Implementing Smart Labs in the Physical and Life Sciences Building resulted in a detailed ventilation risk assessment performed for every lab in tandem with a full building infrastructure assessment. The adjusted ventilation rates throughout the building reduced utility spending by \$175,000 for 2020. As similar work begins in the roughly 200,000-square-foot Medical Research-4 building, a comprehensive Sustainable Labs program will implement equipment inventories, introduce recommendations for streamlined experimental workflows and provide resources for the Green Labs group while addressing building efficiency, controls upgrades and safety through the Smart Labs program.

Green Labs continues to focus on chemical fume hoods and freezers as scientists' best opportunities to reduce laboratory emissions. With one ultra-low temperature freezer (ULT) consuming enough energy to power an average American home, UVA's roughly 500 ULT freezers represent a significant opportunity. A simple switch from -80C to -70C could yield as much as 40% reduced energy use per unit, but a lack of peer-reviewed evidence supporting this change results in low adoption rates. In a comparative study funded by the Committee on Sustainability, UVA researchers are testing the hypothesis that -70C is suitable for even the most sensitive materials, including RNA, tissue and specimen slides. Researchers on the study plan to publish their findings in a peer-reviewed scientific outlet in 2022 following lab analyses.

ZERO ENERGY BUILDINGS

Zero energy buildings utilize energy efficiency mechanisms in conjunction with on-site renewable energy to power the buildings' net energy consumption annually. Through the W&M+UVA Climate Action Partnership, UVA and William & Mary have formed a zero energy working group to explore potential strategies. The UVA Energy Working Group and students in a carbon neutrality course investigated the potential for existing buildings on Grounds to be zero energy, and identified low energy use and unshaded residential properties, such as buildings within Piedmont Faculty Housing, as top candidates.

SOLAR PROJECTS

The UVA-Dominion Energy power purchase agreements for renewable energy from the Hollyfield and Puller solar farms reduced UVA's purchased electricity greenhouse gas emissions by more than 18% in calendar year 2020. UVA also continues to pursue opportunities for on-site solar installations on Grounds.

ENERGY & UTILITIES

The UVA Energy & Utilities team continues to convert medium- and high-temperature hot water systems to low temperature, allowing UVA to utilize energy efficient heat pumps and reduce consumption of fossil fuels. Additionally, the team deployed sophisticated heating, ventilation and air conditioning optimization within the Health System, improving the system's energy efficiency. A Strategic Thermal Energy Study is currently underway, which will identify solutions to meet UVA's fossil fuel-free goal.



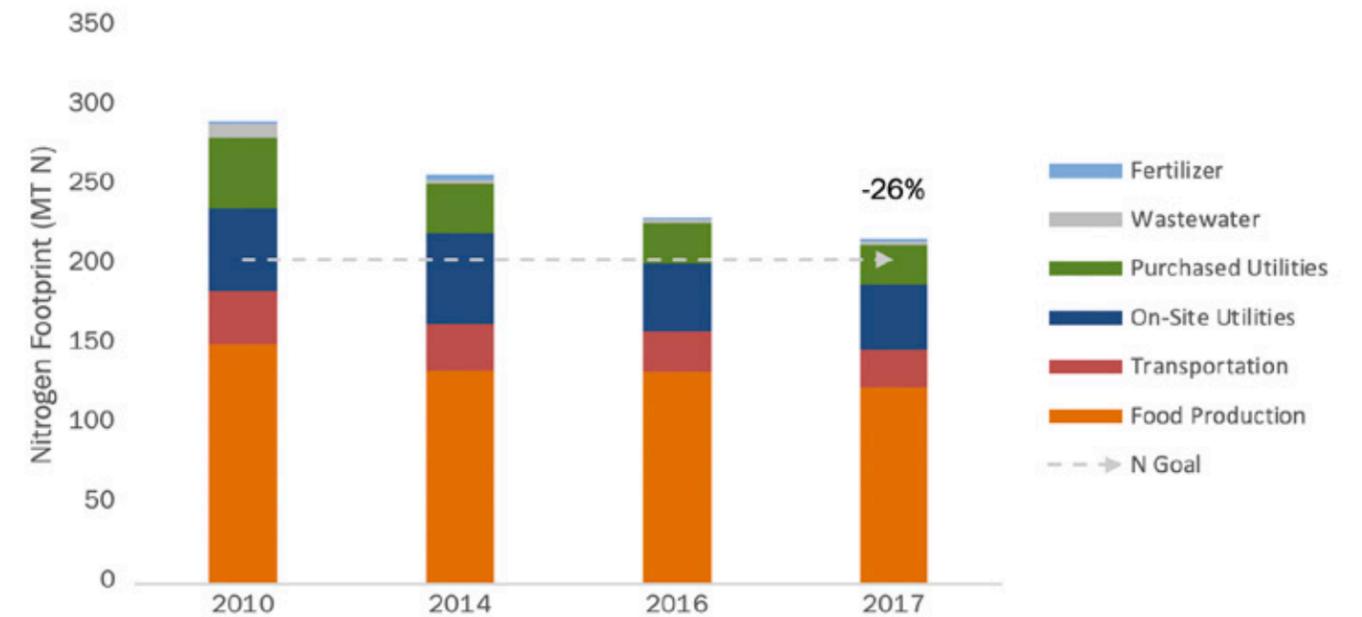
NITROGEN FOOTPRINT STUDY

Students in the Nitrogen Working Group expanded UVA's Community Nitrogen Footprint, previously completed for the City of Charlottesville, to include Albemarle County. This study aims to provide a comprehensive view of the connection between nitrogen losses in Charlottesville, Albemarle, and UVA. The team has validated the UVA 2017 nitrogen footprint and is working to validate the 2018 and 2019 footprints. In the future, the working group will examine other footprint indicators such as phosphorus.

The Nitrogen Footprint 2010-2017 graph shows UVA's nitrogen footprint from 2010 (baseline) to 2017. The stacked colored bars represent the emission sources and the dashed line represents the latest reduction goal of 30% by 2030. The previous 25% reduction goal by 2025 was met in 2017.



NITROGEN FOOTPRINT 2010-2017



**GOAL: REDUCE NITROGEN LOSSES TO THE ENVIRONMENT
30% BELOW 2010 LEVELS BY 2030**

STEWARD

MATERIALS & WASTE

COMPOSTING

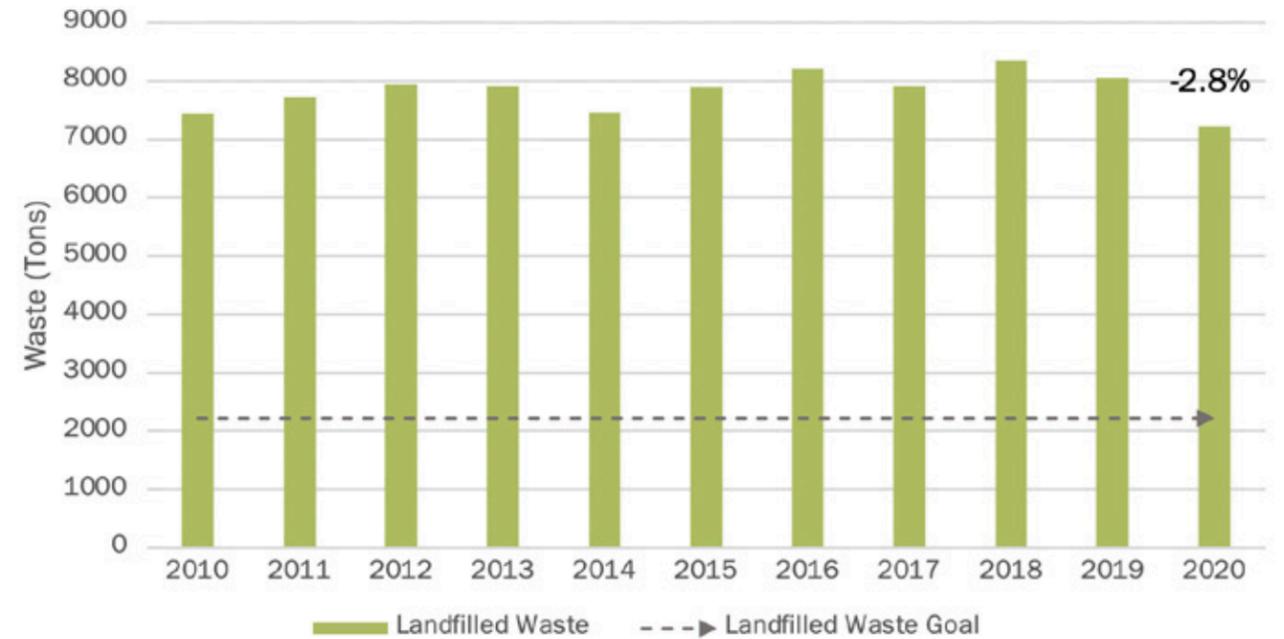
UVA diverted over 1,200 pounds of compost from dining pop-up tents during spring 2021. Zero Waste Ambassadors helped minimize compost contamination through education and daily bin monitoring. Meal plan holders also utilized the revamped reusable to-go container program.

REUSE STORE

Since opening in April 2018, the UVA ReUSE Store has diverted 75,000 items of office furniture, general office supplies, electronics and more, weighing 4.1 million pounds. The surplus property is transferred back to departments, purchased by the community via public sales and/or donated to more than 100 charities.



WASTE LANDFILLED 2010-2020



GOAL: REDUCE WASTE TO 30% OF 2010 TOTALS BY 2030 (A 70% REDUCTION)

WATER HARVESTING

Facilities Management recently installed a cistern to capture rainwater for washing fleet vehicles. With grant funding secured by the UVA Clean Water working group and help from Facilities Management's Transportation Operations and Fleet Manager, Mike Duffy, this 700-gallon cistern in the Facilities Management yard is fully operational as of summer 2021.

Facilities Management also installed a new vehicle wash bay in the newly redesigned Facilities Management yard. The wash bay contains a drain that allows soapy wash water to be sent to the sanitary sewer for treatment at the sewage treatment plant and allows staff to wash vehicles quickly and efficiently on site.



STORM DRAIN MURAL CONTEST

For an Earth Day Every Day event in April 2021, the Clean Water Working Group held their second storm drain mural contest to raise awareness of the importance of preventing stormwater pollution and keeping our streams clean. Local artist Karen Eide won the contest, and her mural titled "Only Rain Down the Drain" can be seen on the south sidewalk along the McCormick Road bridge above Emmet Street.

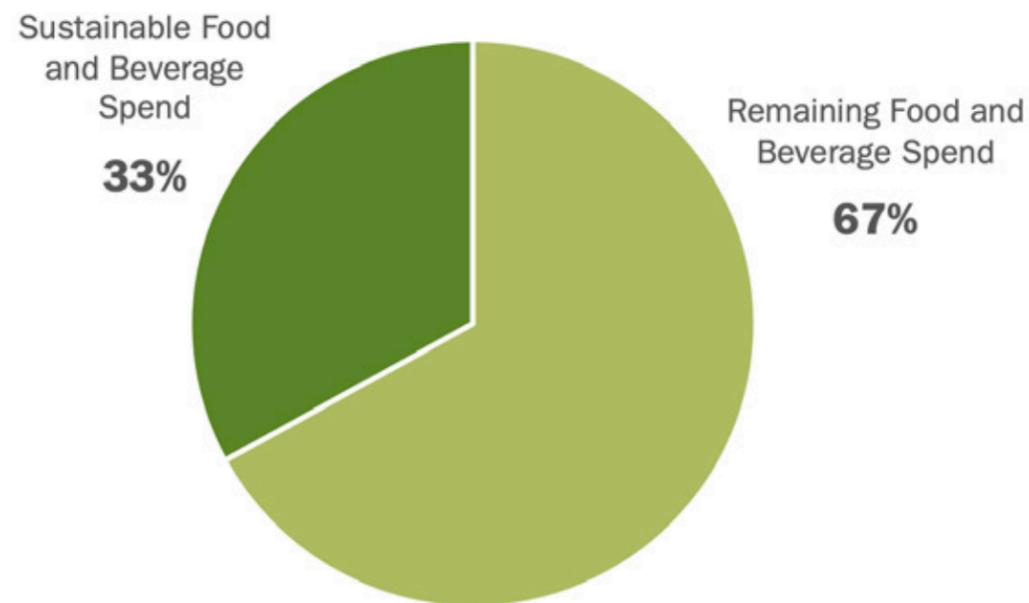


STEWARD FOOD

ADVANCING A SUSTAINABLE FOOD SYSTEM

The UVA Sustainable Food Collaborative (SFC) was formed in 2016 to implement the UVA Sustainability Plan (2016–2020) goals relating to food. Formerly known as the Sustainable Food Strategy Task Force, the SFC adopted a new name this year and focused on developing UVA's second Sustainable Food Action Plan, which will be published Fall 2021. Collaborative members represent several University entities connected with the UVA food system, including UVA Sustainability, Office of the Provost, Department of Politics, Institute for Engagement & Negotiation, Morven Farm, Virginia Humanities, UVA Dine, UVA Health System Dining, Local Food Hub and Cultivate Charlottesville. The SFC works to implement five food goals, which center around food sustainability, food security and equity and supporting local food systems.

UVA DINING'S 2020 TOTAL PURCHASES



GOAL: INCREASE SUSTAINABLE FOOD TO 30% BY COST BY 2030

green dining & UVA Dine

OUR EFFORTS TOWARDS SUSTAINABLE PURCHASING

33% of our food purchases qualified as sustainable under AASHE stars 2.2 standards

30% being plant-based (minimally and/or simply processed) + 3% being sustainably or ethically produced

USDA Certified Organic

Fair Trade Certified

Rainforest Alliance Certified

American Humane Certified

Monterey Bay Seafood Watch

MSC Certified Fisheries








*Data is from calendar year 2020

We also work to support our local food system by purchasing locally when possible.

VIRGINIA LOCAL

We are dedicated to sourcing local produce and meat within 250 miles. We work with local distributors, 4P Foods, Produce Source Partners, and Cavalier Produce to support Virginia growers and producers. We are continuously working to make Grounds more sustainable by providing local, organic, and responsibly-raised food through our growing list of farmers. Get to know some of our farmers by checking out this year's Virginia Local map.

*The map is representative of purchases made during 2019-2020.



Scan for an interactive map with detailed information of our local purchases from 2019-2020.

1 Church Hill Produce

2 Blue Ridge Bunch

3 Dickle Bros. Orchard

4 Goldman Farms

5 Hungry Hill Farm

6 Wade's Mill

7 Kirby Farms

8 Phantom Hill Farm

9 Planet Earth Diversified

10 Mountain View Farm

11 Saunders Bros. Orchard

12 Schuyler Greens

13 7 Hills Food Co.

14 NoBull Burger

15 Sharondale Farm

16 Singing Earth Produce

17 Morris Orchard

18 Morven Kitchen Garden

19 Valley Farm

20 Mt. Crawford Creamery

21 Papa Weaver's Pork

22 Polyface Farm

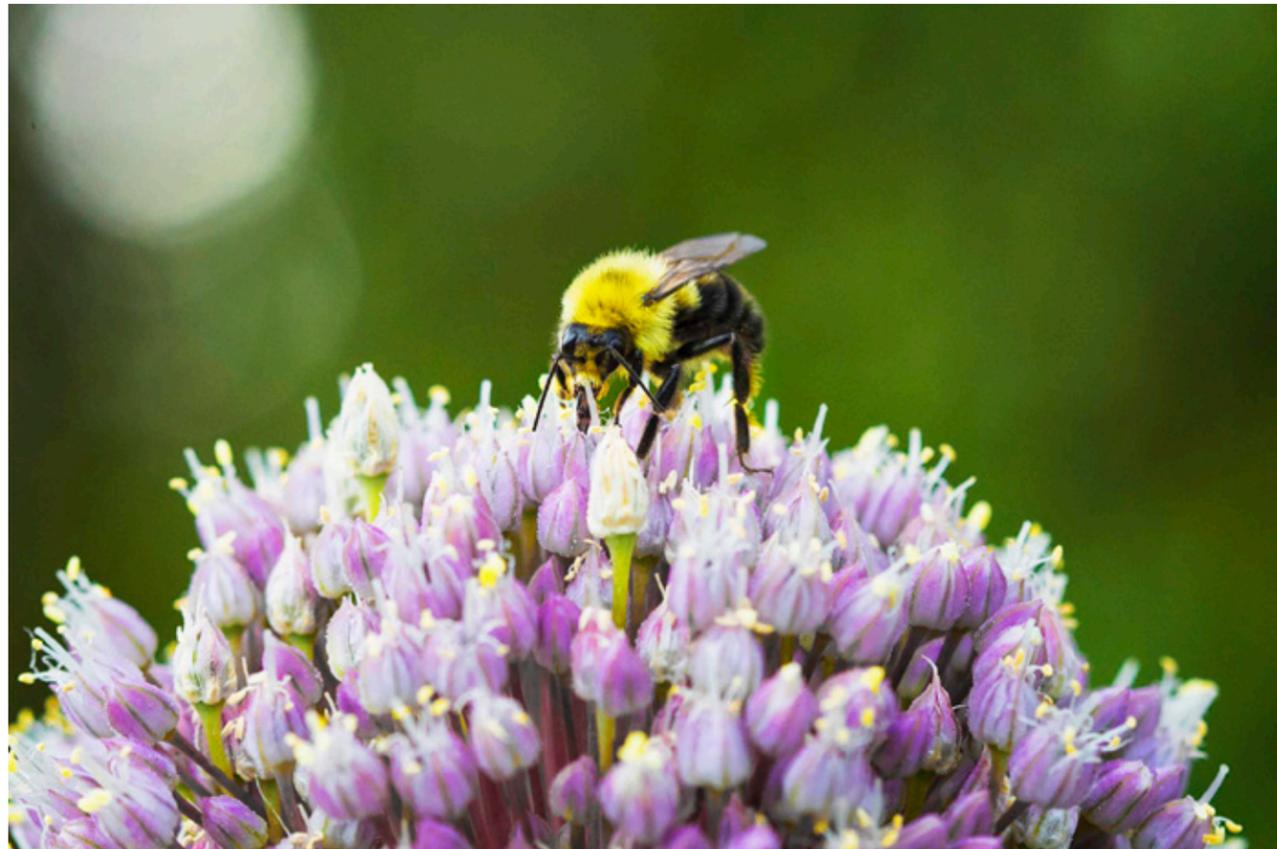
23 Yoders Farm

24 Fresh2o Growers

NEW “BEE CAMPUS” CERTIFICATION

Emily Spindler and Kelsey Schoenemann, graduate students in the Environmental Sciences department, successfully led an initiative to qualify the University’s Grounds for a “Bee Campus” certification from the Xerces Society, a nonprofit dedicated to invertebrate conservation. To facilitate this initiative, Schoenemann and Spindler developed Bee Grounds UVA, a working group within the Environmental Stewardship Subcommittee of UVA’s Committee on Sustainability.

“On the Bee Grounds UVA committee, we have our advisers from the environmental science department, faculty from the biology department and the architecture school, the [Landscape] Superintendent of Facilities Management, the co-chair of the Environmental Stewardship Subcommittee, and Facilities Management’s Director of Operations, just to name a few,” Schoenemann said. “There are people from across all areas of the University, because we wanted this to be a multidisciplinary effort where the whole UVA community comes together to do something.”



MEMORIAL TO ENSLAVED LABORERS

The Memorial to Enslaved Laborers was completed in 2020 and has received national acclaim through awards and national press coverage. Nestled into the sloping landscape of the “Triangle of Grass,” which sits within the UNESCO World Heritage Site, the Memorial to Enslaved Laborers seeks to formally acknowledge the work and the individual lives of the enslaved African Americans who built and sustained the everyday life of the University. Like many of its peer institutions, the University depended on the labor and work of enslaved African American men, women and children.

Constructed of “Virginia Mist” local granite, the Memorial will create a space to gather, reflect, acknowledge and honor the enslaved laborers who contributed to the University. Scholars estimate that at least 5,000 enslaved African Americans worked on the University’s grounds, starting with the construction of the Lawn in 1817 and lasting through the end of the Civil War in 1865. The Memorial captures dualities in its circular form that references both the “ring shout,” a dance practiced by enslaved African Americans that celebrates spiritual liberation and a broken shackle that signals the end of physical bondage. These dual structures form two nested rings that break when they meet the ground to open a circle that welcomes gathering.

The Memorial won the 2020 Project of the Year by The Architect’s Newspaper, as well as the best Public & Social Impact honor. “We’re very honored by the award because it acknowledges not only the excellence of the design, but the team’s extraordinary effort and the process that we went through to listen to all the voices and engage all the stakeholders,” Alice Raucher, Architect for the University, shared during an NBC 29 interview.

74 LEED BUILDINGS AT UVA

Five new and existing buildings certified in the 2020–2021 academic year:

- Emily Couric Clinical Cancer Center Fourth Floor
- Hancock House
- Metcalf & Lefevre House
- Pinn Hall Third and Fourth Floors
- Town Center Four

DISCOVER

“Discover” fosters critical thinking, knowledge creation and sustainable solutions to global and local sustainability challenges.



DISCOVER

YEAR IN REVIEW

As UVA made significant adjustments due to the COVID-19 pandemic, instructors, researchers and learners all demonstrated creativity and commitment in countless ways. The UVA community adapted and focused on the critical needs of the moment. Three themes were evident throughout sustainability teaching and research work this year: community growth and connection, alignment with broader climate goals and career-building experiences for students. This section highlights some of the programs, projects, courses and collaborations that kept our community inspired this year.

CONTINUING TO GROW AND CONNECT

According to an internal census conducted this year, there are over 175 UVA faculty who teach sustainability-related classes and over 250 who are researching sustainability-related topics, with representation from 83% of academic departments. As the number of involved scholars grows, so too does the opportunity to inspire students from diverse disciplines to spend their lives and careers in service of our shared planet. Interdisciplinary hubs such as the Environmental Resilience Institute and the Sustainability Faculty Fellows focus on connecting across silos for novel insights and experiences.

PRIORITIZING CAREER-BUILDING EXPERIENCES

One critical need became clear to faculty members very early this year – with so many internships cancelled in summer 2020, students were clamoring for real-world learning and career experiences. Luckily, many organizations stepped up to the plate to create new internships and fellowships, facilitate consulting-style projects and help current students connect with alumni and community thought-leaders who offered advice and helped students expand their networks.

ALIGNING WITH STATE, NATIONAL, AND GLOBAL GOALS

This year, Virginia joined the Regional Greenhouse Gas Initiative and began implementing the Clean Economy Act, while at the federal level our country rejoined the Paris Climate Agreement. This became a fascinating year to study and discuss solutions needed to reach these goals. The Energy Transition Initiative, numerous academic studies and a new first-year seminar course all focused on decarbonization this year. UVA scholars are well-positioned to help turn goals into reality in the coming decade.

27

INTERNSHIPS SUPPORTED BY TEACHING & RESEARCH SUBCOMMITTEE

39

GLOBAL SUSTAINABILITY MAJORS IN CLASS OF 2021

52

ENVIRONMENTAL RESILIENCE INSTITUTE PROJECT TEAMS

75

ERI FELLOWSHIPS & INTERNSHIPS

370

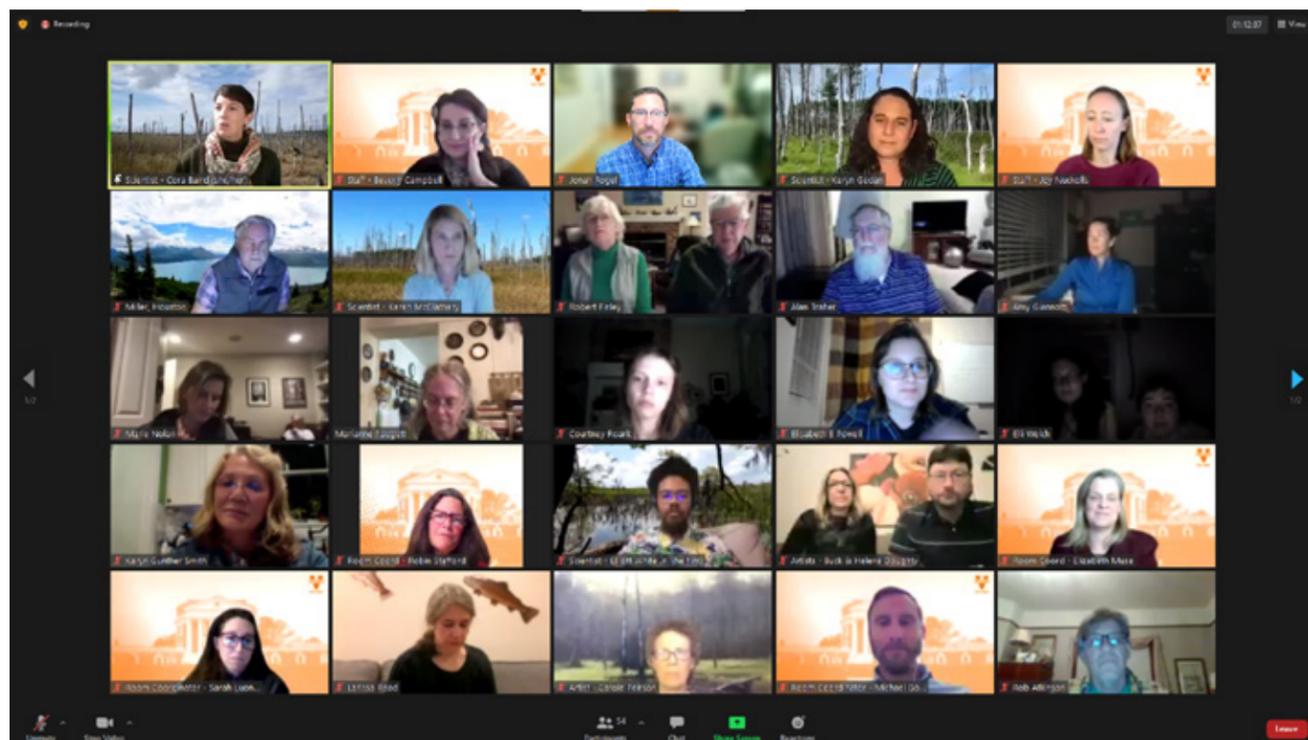
SUSTAINABILITY-RELATED COURSES

4,400

ATTENDEES AT ERI EVENTS

DISCOVER RESEARCH

The Environmental Resilience Institute supports transdisciplinary research and training at the intersection of environmental change and human well-being. ERI's programs accelerate discoveries, link research with action and train the next generation of leaders. Current priorities are climate restoration, coastal resilience and water futures.



STUDENT SUPPORT: LEADERS OF TODAY, AND TOMORROW

Since their inception, ERI's Graduate Summer Fellows, Intern and Extern Programs have funded over 60 students to engage in interdisciplinary research and gain career-relevant experiences. With the support of many UVA partners, ERI is now able to offer additional experiential learning opportunities, including seven student projects led by alumni and community partners. These student projects have led to insights on how to reduce methane leaks in city infrastructure and the economic value to doing so across the supply chain, for example.

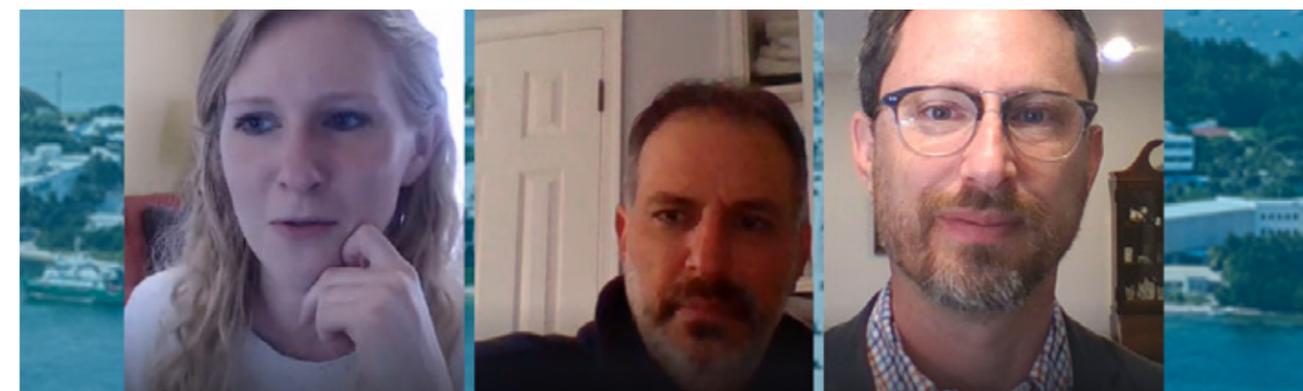
INTERDISCIPLINARY RESEARCH COMMUNITY

The Environmental Resilience Institute is the hub for faculty and students eager to engage in the complexity of modern environmental challenges. With affiliated faculty from every School at UVA and partner communities that span the globe, ERI has the network to coordinate strengths for novel insights. ERI recently commenced work on the Climate Restoration Initiative with support from the Jefferson Trust. The initiative's network of faculty is working to understand how a portfolio of negative emissions strategies that remove carbon dioxide from the atmosphere can be integrated across Virginia and beyond. ERI has also been appointed to the Commonwealth of Virginia's newly legislated Carbon Sequestration Taskforce. Similarly, ERI's Coastal Resilience Initiative led to appointment to the Virginia Coastal Resilience Technical Advisory Committee whose work will contribute to the state's Coastal Resilience Master Plan.

ERI remained engaged and forward-looking despite unprecedented disruptions and challenges to the University community due to COVID. The Rapid Response grant program offered faculty a unique opportunity to study how pandemic response challenges might give a preview to the challenges we face in responding to the ongoing climate emergency. ERI also met the moment by organizing the virtual Climate Ambition Summit, in partnership with UVA's Office of Engagement, Career Center, Office of the President, Vice President of Research and Office Graduate and Postdoctoral Affairs. The event series convened nearly 3,000 registrants.

SEED GRANT PROGRAMS

ERI launched four new interdisciplinary teams over the last year. Each "CoLab" integrates natural science with the humanities to address topics like environmental justice and climate change, using the earth's own processes to build coastal resilience, and market dynamics to build resilience to drought. ERI gives faculty a forum to develop convergent research across disciplines that might otherwise go unexplored. Community partners benefit from actionable research.



ENERGY TRANSITION INITIATIVE

The Weldon Cooper Center's Energy Transition Initiative (ETI) led by Professor Bill Shobe is helping Virginia chart a path towards eliminating greenhouse gas emissions by 2050. With the help of nearly two dozen student researchers, the ETI has begun to identify possible decarbonization pathways for the state. In January, a major modeling exercise was published describing how Virginia might achieve net zero emissions by 2050. This robust team has also created a decarbonization dashboard for the state.



INTERNSHIP GRANTS

Student demand for sustainability-related internships is higher than ever, but many employers are still in a budget shortfall. The Teaching & Research Subcommittee provided funding support for 20 sustainability-related internships and made new research internships possible at the UVA Equity Center and with the Virginia Scientist-Community Interface.



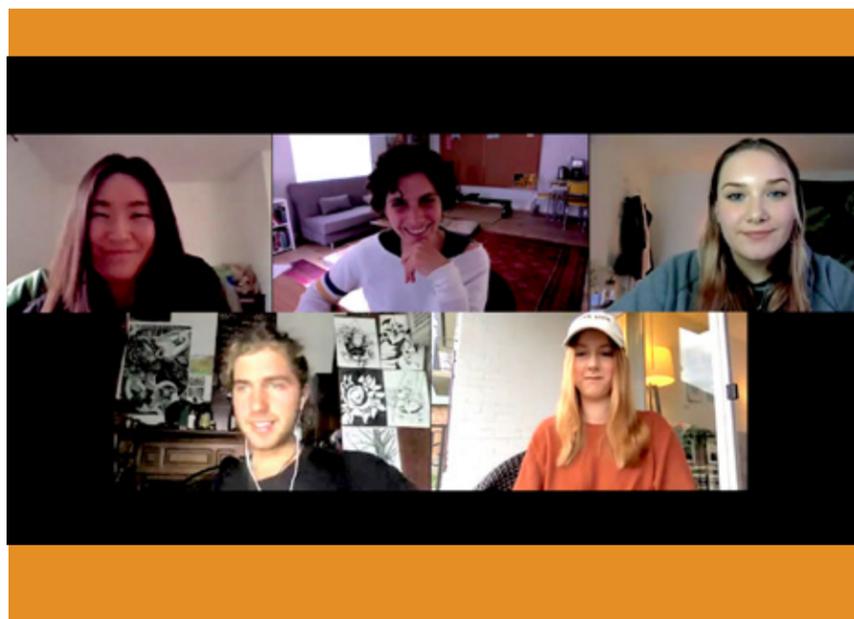
CATALOGING SUSTAINABILITY-RELATED COURSES

This year, as part of the Sustainability Tracking Assessment & Rating System (STARS) reporting process, a full inventory of sustainability-related courses was updated for the first time in three years. The reporting team found that in an average year, UVA offers 146 sustainability-focused courses and another 224 that are sustainability-inclusive. These courses are offered in 41 of the 74 total academic departments at the University. Offerings include:

- Intro to Race, Class, Politics, and the Environment
- The Culture of Rivers
- Impact & ESG Investing
- Literature & Environmental Justice
- Critical Clean Energy Materials
- Mindfulness and Nature
- Environmental Health: Epidemiologic Perspectives
- Food Systems Policy & Reform
- Bicycle Planning

ENVIRONMENTAL THOUGHT AND PRACTICE

The Environmental Thought and Practice (ETP) major was reinvigorated this year with new leadership from Professor Deborah Lawrence. Students in the program connected with storytelling master Moira Demos, creator of “Making a Murderer” docuseries, and learned tips for effective climate change communications. ETP students also independently researched topics ranging from regenerative farming and the future of water to the role of oil and gas money in California politics and the Texas power grid failure of 2021.



GLOBAL SUSTAINABILITY PROGRAMS

The interdisciplinary Global Sustainability program continues to grow and thrive, with 39 new students admitted through a highly competitive application process this year. 39 students in the class of 2021 completed a diverse range of excellent sustainability-focused capstone research projects. This year students could pursue traditional individual projects or a project for the U.S. Department of State’s Diplomacy Lab offering recommendations for sustainable affordable housing in Kingston, Jamaica. A group of 18 students worked closely with the U.S. Embassy in Kingston and several Jamaican agencies, producing a multi-chapter report that will inform foreign policy.



DISCOVER

GROUNDS-ENGAGED LEARNING

GROUNDS-ENGAGED LEARNING GRANTS

The Sustainability Teaching & Research Subcommittee initiated a new grant program in spring 2021 to expand opportunities for students to learn about sustainability by studying and engaging with our own operations and grounds. The first round of these “Grounds Engaged Learning for Sustainability” Grants was awarded in May 2021 to support a variety of projects that are getting started this summer:

- Professors David Carr and T'ai Roulston are working with student researchers to understand how changes in flower blooming seasons may affect pollinators on Grounds.
- Professor Arsalan Heydarian, Professor Arthur Small and students are investigating smart heating, ventilation and air conditioning systems in Olsson Hall.
- Professor James Grove and his student researchers are mapping differences in utility cost for student renters in Charlottesville.
- Professor Kyle Schumann, Professor Katie MacDonald and students are piloting sustainable agro-infrastructure at the Morven Kitchen Garden.
- Professors Lindsay Ivey-Burden (Engineering Systems and Environment), Michael Allen (Religious Studies) and Ben Laugelli (Engineering and Society) will adapt their courses to incorporate student learning and engagement around UVA's ten goals for sustainability from the 2020-2030 Plan.

SUSTAINABILITY LEADERSHIP

In this new experiential, workshop-based course taught by Sustainability Director Andrea Trimble, 14 students focused on translating ideas into action while working with University stakeholders. Guest lecturers throughout the course shared best practices for ideation, leadership, planning, budgeting, communications, forging partnerships and more. This year, student projects included a face mask recycling pilot with UVA Athletics teams; a pollinator tour of Grounds and other bee-related outreach materials; an “adopt a solar panel” proposal; and an effort to increase procurement of graduation gowns made from recycled content.

DESIGNING A CARBON-NEUTRAL FUTURE

In fall 2020, the Office for Sustainability supported a new multidisciplinary seminar course that introduced students to the concept of decarbonization in the context of UVA's own 2030 carbon neutrality journey. Throughout the semester, instructor Ethan Heil invited guest lecturers from Facilities Management, Parking and Transportation, local non-profits and more into the classroom to share their expertise. Students then worked in teams to develop carbon neutrality plans for four University partners: UVA Libraries, the School of Data Science, UVA Athletics and UVA Dine. The results of these collaborations were presented to a broad group of University stakeholders and the plans were shared with each University partner. Several of the student-developed ideas are being explored for implementation or have already been incorporated into UVA's forthcoming climate action plan.

SYSTEMS CONSULTING AND DESIGN

In summer 2020, Professor Reid Bailey's project-based global sustainability consulting course in Sweden had to be cancelled. To help Professor Bailey provide a similar problem-solving experience to students, the UVA Office for Sustainability served as a client for a project as he pivoted his course online. By statistically analyzing data from a recent survey, the student team discovered two key insights: 85% of the student body reports being interested in sustainability, but student familiarity with University sustainability goals did not increase over their four years at UVA. Based on these insights, the student team developed a communication strategy to unify messaging about the sustainability goals.

DRIVER TRAINING CAPSTONE PROJECT

Four Engineering Systems and Environment students worked with the UVA Facilities Fleet team to develop a driver training program focused on safe and fuel-efficient driving practices. In conjunction with their capstone, they also deployed and studied vehicle software that altered idle speed and shift patterns to boost fuel efficiency. Use of this software resulted in an almost six percent increase in fuel economy, saving each vehicle over 23 gallons of fuel and reducing greenhouse gas emissions by 457 pounds annually.



SUSTAINABILITY

RECENT RECOGNITION



AASHE STARS GOLD - MAY 2021

ARBOR DAY FOUNDATION TREE CAMPUS USA

BEE CAMPUS USA CERTIFICATION (XERES SOCIETY) APRIL 2021

*LEAGUE OF AMERICAN BICYCLISTS BICYCLE
FRIENDLY UNIVERSITY - SILVER*

***EPA Green Power Partner: Top 30 in U.S. Higher
Education, #1 in the ACC - APRIL 2021***

PRINCETON REVIEW GUIDE TO GREEN COLLEGES 2021

*NAFA GREEN FLEET TOP 50 & OVERALL HONORABLE MENTION
FOR BEST 100 FLEETS IN THE AMERICAS*



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From the Grounds Up

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