

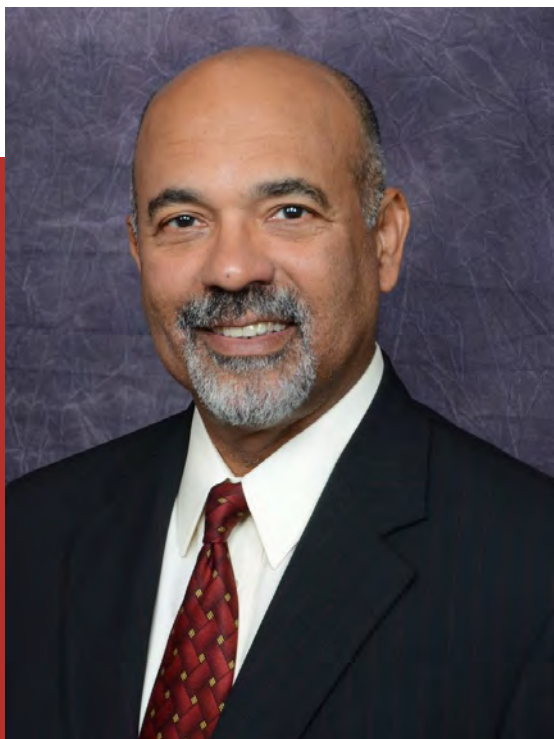
Healthy Cities Healthy People



CAUSES 5-Year Report
2012-2017

**UNIVERSITY OF THE
DISTRICT OF COLUMBIA**
COLLEGE OF AGRICULTURE, URBAN SUSTAINABILITY
AND ENVIRONMENTAL SCIENCES

The Equity Imperative



"As the only public institution of higher education in the nation's capital, the University of the District of Columbia provides a wide range of services to many different kinds of District residents, leaders and stakeholders. We are proud that these services strengthen D.C.'s resiliency and improve conditions among all segments of our community. This report invites you to celebrate the services provided through our newest college—the College of Agriculture, Urban Sustainability and Environmental Sciences (CAUSES)."

Ronald Mason, J.D.

President, University of the District of Columbia



"The College of Agriculture, Urban Sustainability and Environmental Science (CAUSES) is the land-grant college of the University of the District of Columbia. In the proud tradition of the United States land-grant system, we offer innovative academic programs that are relevant to today's economy, and research-based community outreach programs that build capacity across the District of Columbia. We are proud to present highlights of the urban land-grant work of UDC and its newest college, CAUSES."

Dr. Sabine O'Hara

Dean of CAUSES & Land-grant Programs

The College of Agriculture, Urban Sustainability and Environmental Sciences (CAUSES) of the University of the District of Columbia (UDC) embodies the urban land-grant mission of the University. CAUSES offers baccalaureate, graduate and professional degree programs, as well as workforce development certificates, workshops, clinics and community education programs for learners of all ages.

Our Mission

CAUSES offers research-based academic and community outreach programs that improve the quality of life and economic opportunity of people and communities in the District of Columbia, the nation, and the world.

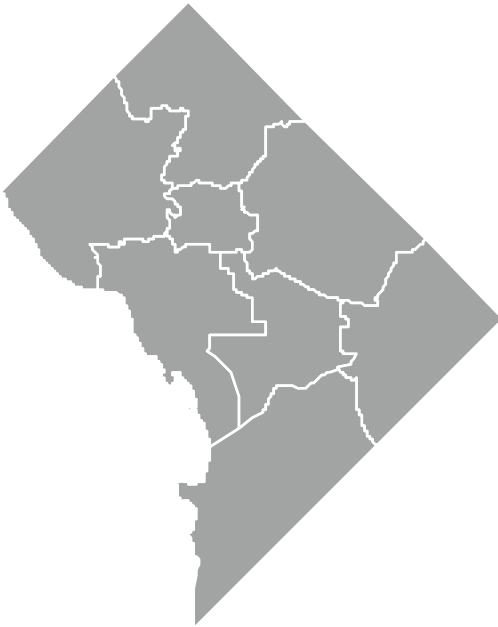
Our Vision

CAUSES will be a world leader in designing and implementing top-quality, research-based academic and community outreach programs that measurably improve the quality of life and economic prosperity of people and communities in the District of Columbia, the nation, and the world.





Our 5-Year Accomplishments:



Nutrition education classes taught in **56** schools in all 8 Wards of Washington, DC



8 successful accreditation
site visits



\$4 million in grants
received annually



12 urban hydroponic and
aquaponic systems built



300 raised bed gardens built



8 tons of top-quality
food donated annually



5 books and
over **30** articles
published



32,000 land-grant
program registrations
annually



Restoring Food Access

CAUSES, in collaboration with the Anacostia Economic Development Corporation (AEDC), the DC Department of Energy and Environment (DOEE) and the USDA's National Institute of Food and Agriculture (NIFA), designed and built four of its award-winning urban food hubs in Wards 3, 5, 7 and 8.

The Bertie Backus Urban Food Hub is on the premises of the Bertie Backus campus of the University. The urban food hub was built on an underutilized basketball court with grants from DOEE and AEDC. The food hub has an aquaponic system, a hydroponic system, a native plant nursery, and a community garden for the neighborhood. The native plant nursery is a unique feature of this food hub. It serves as a space to teach job skills in greenhouse management and production of nine native plant species that can combat invasive species in DC parks. A commercial-ready kitchen is under construction and will be utilized as a business incubator and a space for students and community members to learn about food safety and nutrition.

The PR Harris Urban Food Hub is located on the site of a former middle school. The food hub is built on an old tennis court with grants from AEDC and DOEE. The food hub has two greenhouses that house hydroponic and aquaponic systems. This location also offers garden beds that are cultivated and managed by neighborhood residents. The food hub is located next to Oxon Run Park, which has a playground and picnic area.

CAUSES and the DC Building Industry Association (DCBIA) joined forces to build the East Capitol Urban Food Hub, also known as East Capitol Urban Farm (ECUF), located in Ward 7.

ECUF is a multifunctional, three-acre farm that includes community gardens, an aquaponics system, walking trails, community art, and play space for children. The farm is the result of a major local, federal, public and private alliance between UDC, the District of Columbia Housing Authority, the Urban Waters Federal Partnership, several District of Columbia government agencies, community organizations, churches and local businesses.



Leaders in Food Innovation

Built **5** hydroponics systems and
a hydroponic demonstration site



Increased the land under cultivation at Firebird
Farm, in Beltsville, MD, by **400%**



Built **7** aquaponic systems



Developed ethnic and specialty crop
programs that teach DC residents about
efficient urban food production methods

Built **8** greenhouses in D.C.

Built **10** greenhouses at Firebird Farm



Green Roof

CAUSES inaugurated a 20,000-square-foot green roof on top of the CAUSES building at the Van Ness campus with funding from the District Department of Energy and the Environment (DOEE). The green roof is the food production site for the Van Ness Urban Food Hub. The retrofitted roof was designed to address weight-bearing issues common to older buildings. The roof showcases four types of production: (1) high-revenue plants (i.e., herbs, greens); (2) high nutrition plants that can cover a wide range of dietary needs (i.e., tomatoes, peppers, chards, cabbages); (3) pollinizer plants to ensure bee health in our urban environment; and (4) low maintenance plants that help capture rain, reduce runoff and cool the building in the summer and provide insulation in the winter. The green roof produced 4,300 pounds of produce in its first season, and is used to conduct research on varieties of plants that thrive in roof environments.



Commercial Kitchen

Food security demands a diversified food system that includes urban communities as locations for food production, food preparation, food distribution, and waste reduction/reuse. The Urban Food Hubs concept of CAUSES tests the feasibility of small-scale urban food systems that include a number of key components. The heart of the CAUSES Urban Food Hubs consists of high-efficiency food production sites that utilize bio-intensive, aquaponic, and hydroponic production methods. Collocated with these urban food production sites are commercial kitchens and food trucks that serve as training facilities for food processing and nutritional health-related activities. In addition to serving as training facilities, the kitchens also serve as business incubators where those interested in launching food-related businesses can clean, process, and preserve locally grown produce that can then be marketed through local farmers markets, restaurants, and grocery stores. The kitchens are designed to be functional, energy efficient, and food safety-compliant. Demonstration areas provide workstations for receiving, storage, preparation, recycling, and other functional areas to provide training for proper food handling, food safety, and food management. Activities of the kitchens include the following:

- Nutrition counseling and nutrition education workshops
- Cooking classes and food demonstrations
- Programs to introduce better eating habits and reduced food-related illnesses
- Certifications in food handling, food safety, and Hazard Analysis and Critical Control Point (HACCP)
- Entrepreneurship classes that teach best practices for food preparation and business operations.
- Focus groups to identify determinants of safe food handling behaviors, risk perception, and eating and purchasing habits



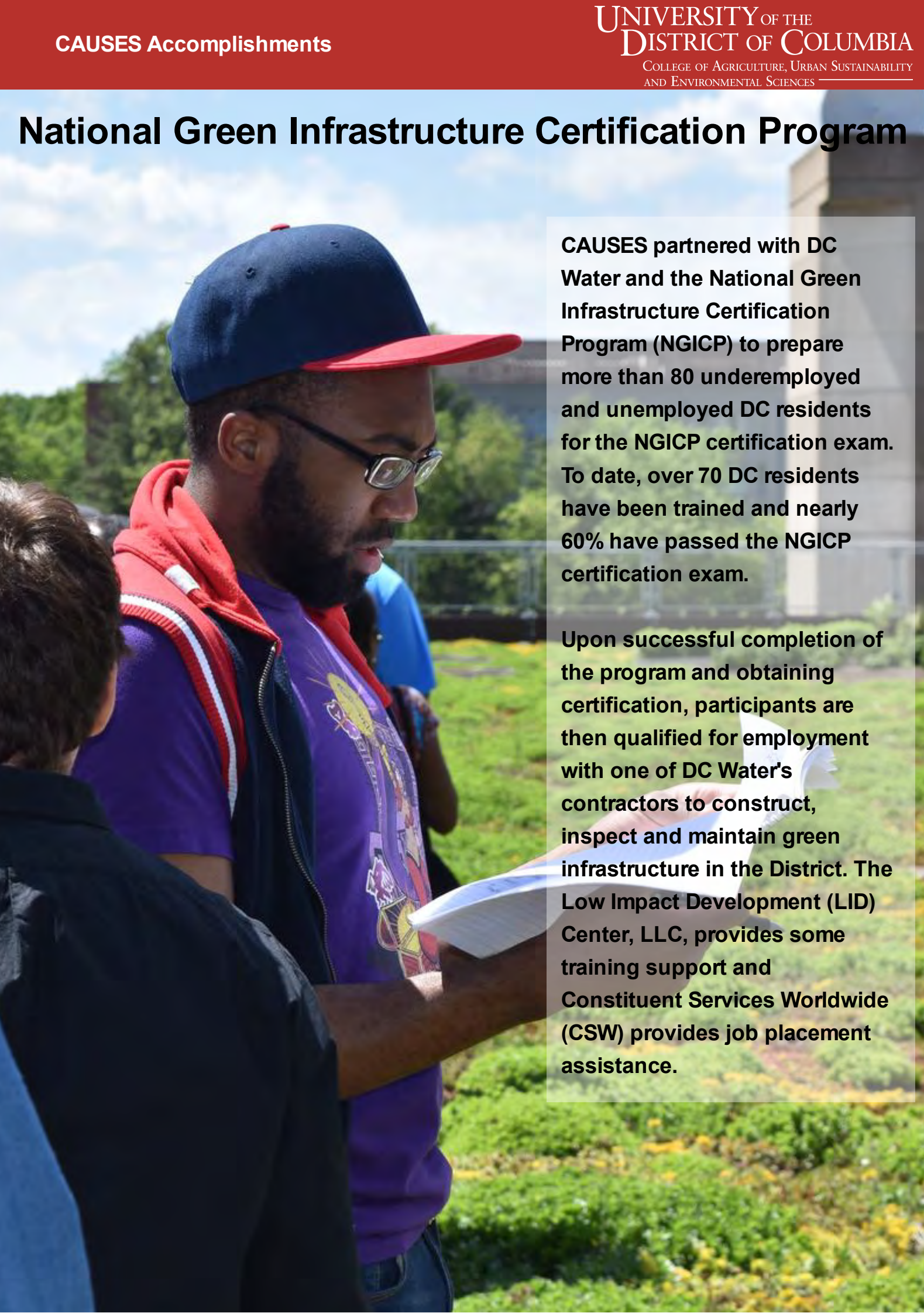
Serving the Community

In 2017, CAUSES partnered with The Mission Continues to further expand ECUF and its features. The urban food hubs seek to create jobs, improve food security and sustainability in D.C. neighborhoods through (1) food production, (2) food preparation, (3) food distribution and (4) waste and water management.

The initiative allowed ECUF to expand its hosting of local kids and community and education leaders to provide them with more fruits of their labor and teach them about the efficacy of sustainable community farming. ECUF now has an expanded community garden, a new walking trail, a new farmers market stand, and a new STEM education space and community area.



National Green Infrastructure Certification Program

A man wearing a blue baseball cap with a red brim, glasses, and a purple t-shirt with a red hoodie underneath is looking down at a document held by another person. They are outdoors in a grassy area with trees and a building in the background.

CAUSES partnered with DC Water and the National Green Infrastructure Certification Program (NGICP) to prepare more than 80 underemployed and unemployed DC residents for the NGICP certification exam. To date, over 70 DC residents have been trained and nearly 60% have passed the NGICP certification exam.

Upon successful completion of the program and obtaining certification, participants are then qualified for employment with one of DC Water's contractors to construct, inspect and maintain green infrastructure in the District. The Low Impact Development (LID) Center, LLC, provides some training support and Constituent Services Worldwide (CSW) provides job placement assistance.

Professional Science Masters

CAUSES launched its Professional Science Master's (PSM) programs in Water Resources Management, Urban Agriculture and Urban Sustainability - the first programs of their kind in DC and the first Urban Agriculture degree in the United States.

PSM in Urban Agriculture

The Urban Agriculture program connects the dots between locally grown food, nutritional health and economic empowerment to make urban farming a successful business. The program offers students a chance to see sustainable research techniques applied in action, whether it be at the 143-acre Firebird Farm, our three-acre innovative food hub in Ward 7, or the 20,000-square-foot rooftop garden on the Van Ness campus.

PSM in Urban Sustainability

The Urban Sustainability program prepares students for a wide range of urban-focused careers in business, government and the nonprofit sector by providing hands-on experience with project design, implementation and management in the fields of sustainability and resilience. Students learn how to create solutions for urban sustainability and resilience challenges through case studies, internships, and programs. The Urban Sustainability PSM is the University's first fully online program.

PSM in Water Resources Management

The Water Resources Management program is an interdisciplinary and practical graduate program that prepares graduates for effective science communication and problem-solving skills, entrepreneurship and technical innovation, in order to address the global challenges of water availability, quality and sustainability.





Environmental Quality Testing Laboratory

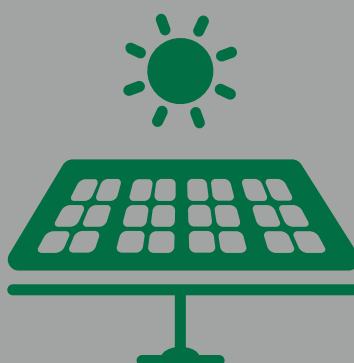
CAUSES achieved accreditation for its Environmental Quality Testing Laboratory (EQTL) through the National Environmental Laboratory Accreditation Program Accreditation Council. The EQTL of the University of the District of Columbia offers full-service environmental sampling and analysis to customers in the DC metropolitan area and beyond. Managed by the Water Resources Research Institute (WRRI) of CAUSES, EQTL provides a wide range of services, including high-quality, reliable and affordable analytical, field sample collection and training services. Our team of experts, who possess interdisciplinary science and engineering experience, is committed to providing our customers with accurate data on time, using the latest technology, instrumentation and resources. CAUSES test results for soil, water and plant tissue are admissible as court evidence.



CAUSES developed five land-grant centers, with its newest being the **Center for Architectural Innovation and Building Science (CAIBS)**. CAIBS provides cutting-edge research and education to students, DC residents and organizations on the performance of buildings, building materials, building health and building systems. CAIBS has partnered with the Department of Consumer and Regulatory Affairs (DCRA) and conducted a seminar series on the art, science, and technology of green buildings. Participants received a green building certificate upon completion of the series. CAUSES also has partnered with the Department of General Services to develop an innovative workforce development course for District residents and businesses in the areas of building science, energy management and sustainability.

Goals for CAIBS

To develop sustainable energy solutions for existing and new buildings.



To mitigate climate change through improved building performance.

To provide relevant workforce training for management/operation of buildings.



To expand the understanding of building components and systems and their relationships to energy consumption.

Other Notable Accomplishments

- Received APLU award as one of the Top 4 innovators in cooperative extension nationally.
- Doubled grant funding to more than \$ 4 million received annually for research and community education.
- Upgraded the Ward 7 East Capitol Urban Farm to include a STEM education area for neighborhood schools.
- 8 successful site visits for our accredited academic programs in Architecture and Community Planning, Nutrition and Dietetics, and nursing (RN to BSN) and our USDA land-grant programs.
- Expanded our community outreach programs by 30% and served 32,000 program participants, ages 3 to 93, through nutrition education programs, continuing education and workforce development programs in food management, urban agriculture, storm water management, and climate change mitigation.
- Recipient of the 2015 District Sustainability Award from the Department of Energy and Environment (DOEE).
- Grew over 8 tons of sustainable top quality produce for Bread for the City, DC Central Kitchen, DC SNAP programs, and the Hay Adams Hotel.
- Received extensive media coverage for our urban agriculture program, including features in the Washington Post, NPR, the Washington City Paper, two USDA publications, and on WAMU 88.5.
- Worked with 90 community organizations including schools, churches, synagogues, homeless shelters, community gardens, and farmers markets to bring our work to where our fellow DC citizens live.
- Collaborated with the Department of Small and Local Business Development (DSLBD) and TechStars to organize 5 workshops during DC Startup Week; the workshops drew 95 participants and follow-up activities reached over 500 start-up business owners.
- Established ongoing mentorship with 15 environmental businesses in DC, and facilitated business planning sessions with each of them; 9 UDC students in the Environmental Business Incubator are developing high-impact sustainable businesses.

Other Notable Accomplishments

- Equipped the District of Columbia's first Native Plant Nursery, funded through a Sustainable DC grant, and held focus groups with DC residents and agencies on strategies to increase tree coverage to mitigate urban heat island.
- Received 2 Specialty Crop Block Grants to identify entrepreneurship.
- Collaborated with USDA-ARS scientists, and UDC students to determine which genotypes/varieties of four crops (strawberry, sweet potato greens, roselle, tomato) grow best in urban agricultural systems incl. on green roofs. Received 2 Specialty Crop Block Grants totaling \$92,000 to identify entrepreneurship opportunities in food processing and food preservation incl. with returning citizens.
- Collaborated with federal, state, and non-profit organizations on 11th Street Bridge Park project and constructed 200 raised bed gardens across 6 urban farm sites in food dessert neighborhoods long with training on food production, nutrition and sustainability.
- Collaborated across three land-grant centers to assess the knowledge and attitudes of Washingtonians toward natural resources and climate change.
- Collaborated with USDA-ARS scientists to determine the potential success of biological control measures for the damaging harlequin bug *Murgantia histrionica* crop pest.
- Collaborated with a non-profit organization, Florida International University, and Indoamerica Technological University to evaluate population genetics and habitat requirements of a critically imperiled legume (*Vicia ocalensis*) to prevent extinction.
- Expanded our community outreach programs by 30% and served 32,000 program participants, ages 3 to 93, through nutrition education programs, continuing education and workforce development programs in food management, urban agriculture, storm water management, and climate change mitigation.
- Collaborated with DSLBD on a community food innovation grant for local organizations in Ward 7 & 8.

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