

UNIVERSITY OF THE DISTRICT OF COLUMBIA

COLLEGE OF AGRICULTURE, URBAN SUSTAINABILITY
AND ENVIRONMENTAL SCIENCES

CAUSES IMPACT REPORT



January 1 - September 30 2020



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A MESSAGE FROM THE DEAN



Dwane Jones, PhD, ACC
(Associate Certified Coach)

Acting Dean

College of Agriculture, Urban
Sustainability, and Environmental
Sciences (CAUSES)
and Land Grant Programs

THE last few months have been nothing short of challenging. However, in the midst of all of this, team members of the College of Agriculture, Urban Sustainability, and Environmental Sciences (CAUSES) and its partners continue to adapt to ensure we are helping our students and communities reach their highest potential. While safety and resilience are of utmost importance, so is the need to continue impacting our world.

We have heard many requests for additional learning opportunities to help you pivot during these challenging times. Rest assured, we will continue to offer 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. We hope this period's Impact Report expresses our gratitude for your continued engagement and feedback.

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.

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.

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.

COLLEGE/SCHOOL/DIVISION GOALS

CAUSES graduates are exceptionally well prepared to succeed in their chosen fields of study. In addition, our graduates stand out by having distinctive attributes and competencies. CAUSES graduates are:

1. Global citizens committed to local relevance.
2. Adept at solving urban problems.
3. Committed to health and wellness, food and water security.
4. Skilled at navigating diverse social, cultural, built and natural environments.
5. Independent thinkers and collaborative team players.
6. Adaptive lifelong learners.

CAUSES embodies the land-grant tradition of UDC. In addition to offering innovative academic programs, the college also offers a wide range of community education programs through its land-grant centers and institutes: (1) The Center for Urban Agriculture & Gardening Education, (2) The Center for Sustainable Development & Resilience, (3) The Center for Nutrition Diet & Health, with its Institute of Gerontology, (4) The Center for Architectural Research & Building Science, with its Architectural Research Institute, (5) The Center for 4-H & Youth Development, and (6) The Water Resources Research Institute.

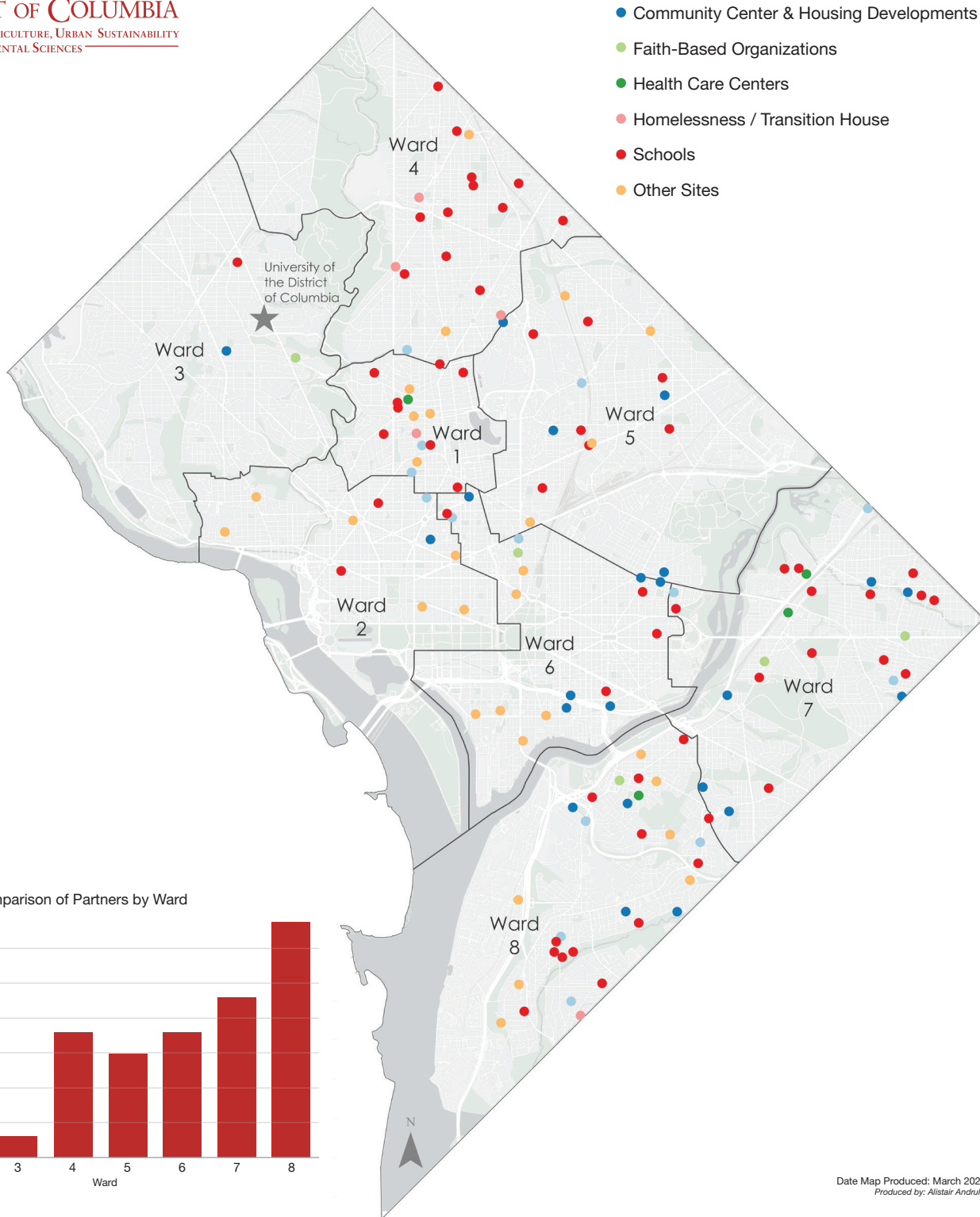
CAUSES land-grant programs are well positioned to advance the sustainability goals of the District of Columbia and the six core objectives of the National Institute of Food and Agriculture of the U.S. Department of Agriculture. These are:

1. To improve food security.
2. To mitigate climate change.
3. To combat childhood obesity and other food related illness.
4. To improve food safety.
5. To improve water safety and management.
6. To expand alternative energy solutions.

CAUSES PARTNERING ORGANIZATIONS

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- Child Development Centers
- Community Center & Housing Developments
- Faith-Based Organizations
- Health Care Centers
- Homelessness / Transition House
- Schools
- Other Sites



Date Map Produced: March 2020
Produced by: Alistair Andrulis

CAUSES IMPACTS

FRESH PRODUCE DISTRIBUTION WARDS 7 AND 8



Statement of the Issue:

There is a need to address heightened food insecurity created by the COVID-19 pandemic in the District of Columbia.

Statement of Action Taken:

Food was grown and donated by the teams at Firebird Research Farm, the PR Harris Food Hub, and the Van Ness Urban Food Hub.

Statement of Results:

Food was grown under the management of Matt Gardine, Assistant Farm Manager, by project assistants Brian Barnes, Victoria Mirowski and Thomas Wheet, and in partnership with Purple Mountain Organics. From the beginning of the COVID-19 pandemic in March 2020, up to July 31st, 6,071lb of fresh produce was donated to food-insecure residents in the District of Columbia. The Center for Urban Agriculture and Gardening Education (CUAGE) partnered with multiple institutions to distribute the food, including nonprofits, food banks, and community groups, such as Dreaming Out Loud, Veggie City, Food Not Bombs, Bread for the City, Common Good City Farm, Capital Area Food Bank, Plantita Power, DC Central Kitchen, Martha's Table, and East River Family Strengthening Collaborative.

Project Contact:

Mchezaji "Che" Axum, Director, Center for Urban Agriculture and Gardening Education
mchezaji.axum@udc.edu

URBAN AGRICULTURE AND CLIMATE CHANGE



Statement of the Issue:

Residents of Washington, DC, and Montgomery, Alabama, need novel production techniques to enhance food and nutritional security.

Statement of Action Taken:

To address this issue, soil and soilless-based training was provided to enhance knowledge. Local farmers traveled to the 147th Annual Tuskegee Farmers Conference and participated in workshops and classes in DC and Alabama. This course provided each participant with a glimpse into the past, present, and future of soilless and soil-based agroecology in the era of climate instability. A fact sheet was created, titled "Urban Agriculture and Climate Change." An online workshop was created, based on the fact sheet. Fifteen participants enrolled in the workshop, which will be offered again to residents and others outside of the Washington, DC, area.

Statement of Results:

There has been a reestablishment of soilless-based classes in an Alabama middle school. As a result of the training, a food hub at a local Washington, DC, apartment complex was created. The group managing the newly established food hub, "Hustlers to Harvesters," is currently working to develop a curriculum for their team and participants at Tuskegee University.

Project Contact:

Mchezaji "Che" Axum, Director, Center for Urban Agriculture and Gardening Education
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PR HARRIS URBAN FOOD HUB



Statement of the Issue:

Urban food deserts—areas lacking access to grocery stores and healthy produce, disproportionately affect neighborhoods of color and communities that fall on the lower end of the socioeconomic spectrum. The fresh produce void in these areas often leads to higher rates of long-term, dietary health risks, such as diabetes, heart disease, and stroke, which severely impact the local population.

Statement of Action Taken:

To help combat issues of food insecurity, the PR Harris Food Hub, located in Ward 8 in Washington, DC, grew fresh vegetables and fruits for free distribution throughout these historically disenfranchised communities. Since distribution is donation-based, produce grown on-site moves through local non-profits, churches, and community organizations that serve residents within the neighborhood. PR Harris partnered exclusively with organizations that serve those most in need, including, but not limited to, seniors, at-risk youth, and individuals suffering from homelessness.

Thomas Wheet, Farm Manager at PR Harris, managed a number of operational requirements. He also taught online classes and conducted facility tours.

Statement of Results:

From the months of April 2020 to June 2020, the PR Harris Food Hub successfully produced and distributed 1,122.24 lb of food for CAUSES non-profit partners, including leafy greens, sweet peppers, hot peppers, tomatoes, cucumbers, and okra. The following groups are PR Harris's most consistent distribution outlets:

Food Not Bombs: PR Harris's most consistent distribution outlet since its opening in the fall of 2019. They serve cooked meals to individuals suffering from homelessness in Franklin Square (Ward 6).

Donations have continued throughout the COVID-19 pandemic.

Veggie City: PR Harris donates produce to RCC on a weekly basis. Food is bagged and distributed to seniors and community members throughout the Ward 5, LeDroit Park neighborhood.

Donations have continued throughout the COVID-19 pandemic.

Bread for the City: Bread for the City (BFtC) is a well-known non-profit serving disenfranchised communities across DC. Since the start of the coronavirus pandemic, the food hub has donated to BFtC's Southeast location, to support its efforts in Wards 7 and 8.

Project Contact:

Thomas Wheet, Research and Logistics Coordinator for Urban Agriculture and Entrepreneurship
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URBAN AGRICULTURE TECHNICIAN CERTIFICATE PROGRAM



**Urban Agriculture Technician
Certificate (Online)**
September 1, 2020 - November 24, 2020

Part I
Propagation Intensive
Bed Preparation Intensive
Irrigation Intensive

Part II
Integrated Pest Management Intensive
Small Equipment Intensive
Harvest and Food Safety Intensive

Contact:
Brian Barnes
brian.barnes@udc.edu
(202) 689-9128

The workshop is FREE and open to the public.

Register here: tinyurl.com/UrbanAgTech20vf

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Statement of the Issue:

Careers in the urban agriculture sector can be quite lucrative. Opportunities for sustainable business development have been bolstered by the advent of direct retail sales to both (1) local restaurants, and (2) single household consumers in the form of Community-Supported Agriculture (CSA) programs. Due to the small number of Washington, DC, urban farms, there are few opportunities to obtain professional farming experience. It would be prohibitively expensive for a farm manager in Washington, DC, to hire inexperienced employees and provide the skills needed to start a farming business.

Statement of Action Taken:

The *Urban Agriculture Technician* (UAT) certificate program was created to extend specialized urban farming skills to its participants. The course provides participants with high levels of knowledge regarding the principles of different topics related to urban agriculture. The UAT course is a hybrid course which combines lecture-style training with field demonstrations, to ensure that participants gain holistic knowledge of the advertised topics. The course was transitioned to a virtual, online offering.

Statement of Results:

Pre- and post-tests to assess knowledge acquisition among participants indicate that all participants have increased their knowledge and understanding of urban agriculture principles and skills. Sixteen individuals successfully completed course requirements and became program graduates.

Project Contact:

Brian Barnes, Project Assistant for Urban Agriculture
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URBAN AGRICULTURE—SOILLESS CERTIFICATE PROGRAM



Urban Agriculture Soilless Certificate:
Introduction to Hydroponics & Aquaponics

August 3 - September 14, 2020

University of the District of Columbia
ONLINE

Contact
Victoria Mirowski
victoria.mirowski@udc.edu
(202) 819-5704

Register Here:
tinyurl.com/CAUSESoillesscertv

The series is **FREE** and open to the public.

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Statement of the Issue:

Residents of the Washington, DC, metro region need access to introductory courses which cover high-tech farming methods for urban growing, such as soilless vegetable production (i.e., hydroponics and aquaponics).

Statement of Action Taken:

Victoria Mirowski, Project Assistant, Center for Urban Agriculture and Gardening Education, launched a 15-hour, online certificate program that provides each participant with an introductory survey of soil-less agriculture's past, present, and future. The course focuses on current trends in soilless farming and explores the high-tech farmer's basic needs concerning overall system design, material selection, best practices in fish and plant cultivation, and creating a soilless system. The course was transitioned to a virtual, online offering.

Statement of Results:

After transitioning this course to a virtual, online offering, 15 participants successfully met the requirements of the course and graduated from the program.

Project Contact:

Victoria Mirowski, Project Assistant for Urban Agriculture
victoria.mirowski@udc.edu

HOME AND COMMUNITY URBAN FOOD PRODUCTION CERTIFICATE PROGRAM



Statement of the Issue:

Climate change is projected to increase weather vagaries such as low and erratic rainfall, increased storms and floods, and extreme temperatures. Rising temperatures will affect yield in addition to increasing demand for more water for irrigation, leading to food and water insecurity. Being the only public university in DC, and the only urban land-grant university in the nation, it is critical for UDC to educate the public in growing food in a sustainable manner, using good agricultural practices aimed at benefitting the grower, consumer and the environment.

CAUSES is focused on advancing the sustainability goals of the District of Columbia and the core objectives of the National Institute of Food and Agriculture, U.S. Department of Agriculture. Through its community outreach programs, CAUSES is committed to expanding knowledge of urban agriculture, urban sustainability, and sustainable farming techniques that improve food and water security. CAUSES also has educational programs aimed at improving the health and wellness of our communities and the mitigation of climate change. To achieve this objective, a certificate course in “Home and Community Sustainable Food Production” was offered in 2020. The course was designed to address climate change and sustainable agriculture, and to provide practical ideas for participants to grow their own food and be resilient during unusual situations like the current COVID-19 pandemic.

Statement of Action Taken:

An expert agroecologist from North Carolina was recruited to teach the course and was very well received by participants. The course was offered in a virtual format, both synchronously and asynchronously, and highlighted the benefits of growing and consuming specialty and ethnic crops.

Statement of Results:

Forty (40) DC metro and five Professional Science Master's degree student participants completed all course requirements and were issued a course completion certificate, a credential that can be used to help advance their career. The course received highly positive evaluations and feedback. This course supports UDC's Equity Imperative Strategic Plan goals to increase the number of UDC Degrees and Workforce Credentials awarded. Participants reported changes in behavior, such as increased skills in gardening and healthy eating. Most reported they would recommend the course to others.

Project Contact:

Dr. Mamatha Hanumappa, Project Specialist, Specialty and Ethnic Crops
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YOUTH GARDEN PROGRAM



Statement of the Issue:

The need for access to nutritious food is an issue, especially concerning food deserts, areas in the city that lack grocery stores. Youth in the District of Columbia need to have information on growing their food in an urban setting, to understand organic and non-organic gardening, and how to grow nutritious food in soil and soilless environments. Many schools in the city now have gardens. Youth have expressed an interest in developing their school gardens. Schools have requested UDC 4-H to facilitate youth development and leadership in urban agriculture, gardening and nutrition.

Statement of Action Taken:

School gardens were developed and maintained at Murch Elementary School, in Ward 3, the Rita Bright Family and Youth Center, in Ward 1, and the Columbia Heights Education Center, in Ward 1. UDC CAUSES engaged 4-H nutrition volunteers and UDC students. Volunteers were committed to implement programming with the students, as well as conduct nutrition workshops and activities. As a result of volunteer efforts, workspace at the UDC Green Roof remains cultivated to plant and grow seedlings to support garden programs at schools and centers. Students were instructed on how to plant, maintain and harvest, and were provided food demonstrations on preparing foods from their plantings.

Statement of Results:

Pre- and post-surveys revealed that 100% of the students learned something about gardening, including the difference between traditional and organic farming and alternative ways of growing food, e.g., aquaponics and hydroponics. One-hundred percent of the children involved in planting projects reported feeling that their contribution to the school or community is a source of pride. Forty percent of the youth surveyed report eating better due to the experience they had in planting a school garden and participating in food demonstrations and preparation activities. Eighty percent of the gardens have been maintained.

Project Contact:

Diego Lahaye, Program Associate, 4-H
dlahaye@udc.edu

4-H SOCCER PROGRAM



Statement of the Issue:

Youth sports activities in DC communities help engage teenagers in projects that foster positivity, leadership and camaraderie.

Statement of Action Taken:

UDC CAUSES provided sporting activities for youth through the 4-H soccer program. The program is dedicated to the promotion and organization of youth soccer at both the recreational and competitive levels. Also, the soccer program is devoted to the development of its players and coaches, allowing them to reach their fullest potential. The program instills leadership and sportsmanship qualities in its members in an atmosphere of friendship, while creating a healthy living community.

We successfully implemented the winter portion of this program, which consisted of youth leadership training for coaches, five different leagues (U 19 boys, U 19 girls, U 15 boys, and two U12 COED) at three other sites. One of these sites was UDC, where we hosted the finals of each tournament, allowing the youth to become aware of UDC and its facilities.

Statement of Results:

As part of our program, we were able to obtain employment for youth, provide academic counseling, open new sites, and support positive healthy eating habits in participants.

Coaches who participated reported learning about and working with youth more effectively and understanding the nutritional needs of athletes. The program's success has also garnered increased stakeholder support from parents, community, and district agencies. National 4-H has also expressed keen interest in the UDC 4-H Soccer Program model.

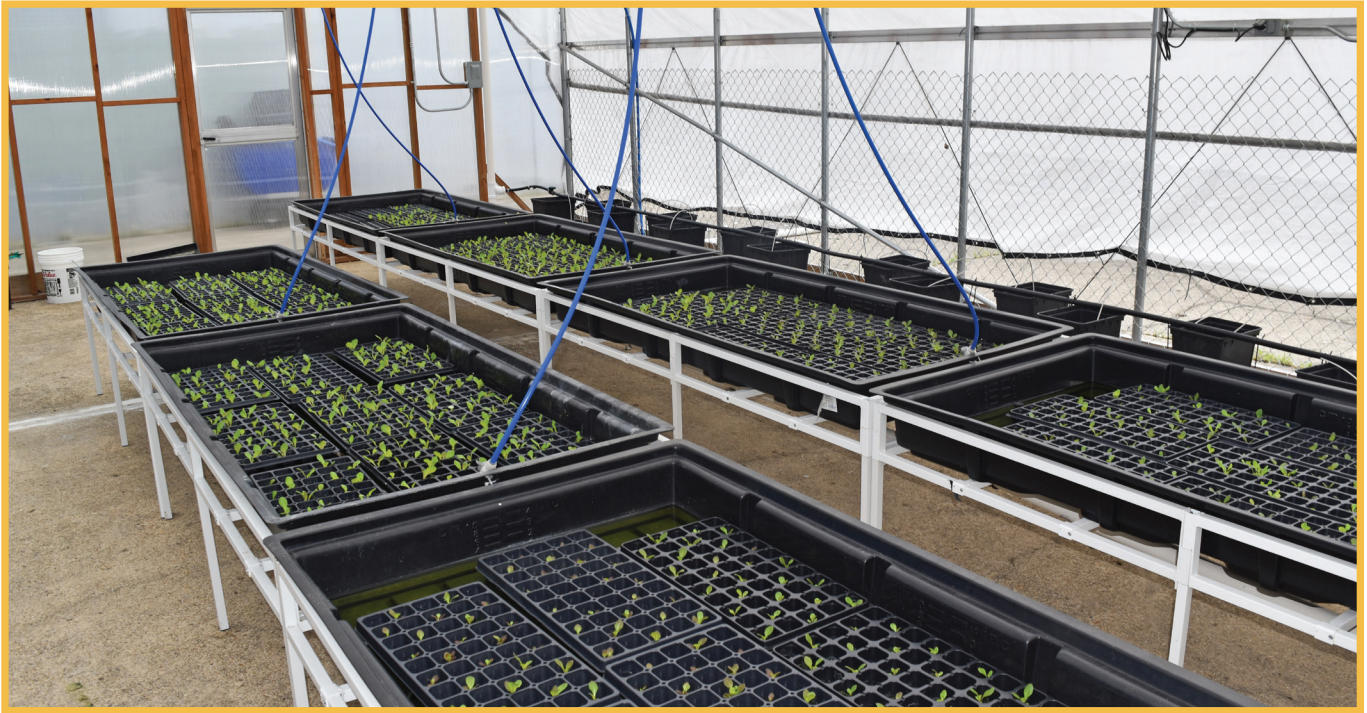
The program includes more than 1,000 youth annually. Support from sponsors and partners helps to subsidize the cost of the program. Sponsors and partners include:

- DC Scores
- District Sports
- USDA National Institute of Food and Agriculture
- DC Department of Parks and Recreation
- DC Mayor's Office on Latino Affairs
- Leveling the Playing Field
- Latin American Youth Center
- Collaborative Solutions for Communities

Project Contact:

Diego Lahaye, Program Associate, 4-H
dlahaye@udc.edu

REOPENING OF BERTIE BACKUS URBAN FOOD HUB



Statement of the Issue:

During the Coronavirus pandemic, access to fresh fruits and vegetables has grown increasingly strained. As farm production has decreased, nationwide, due to a diminished national farm workforce, grocery stores have been overwhelmed by the demand for fresh produce. Distributors have been unable to meet local demand in many American cities.

Statement of Action Taken:

The Center for Urban Agriculture and Gardening Education (CUAGE) sought to reopen the Urban Food Hub community garden spaces in order to allow DC residents in those areas to safely grow fresh produce for their own households. This reduces congestion in crowded grocery store aisles. The Assistant Farm Manager worked to develop and implement methods and practices for re-opening the garden spaces. These methods incorporate social distancing policies and procedures, as well as the elevation of community garden managers to manage the spaces and ensure safe participation by all members.

Statement of Results:

The community garden at the Bertie Backus Urban Food Hub re-opened, and members were able to begin growing their own produce while maintaining a safe distance from one another.

Project Contact:

Matthew Gardine, Assistant Farm Manager
matthew.gardine@udc.edu

DIFFERENTIAL KNOWLEDGE AND PERCEPTIONS RESEARCH PROJECT

Health Equity: Community Conversations



Register Here: tinyurl.com/HealthEquityCC

This event is **FREE** and open to the public.

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Statement of the Issue:

Some people, such as minorities and those from under-educated and lower income backgrounds, are typically excluded from conversations surrounding the degradation and improvement of ecosystem structure, function, and services. In an effort to provide an opportunity for under-served populations to be heard, inform content creation in academic courses and in cooperative extension programs, and create experiential learning opportunities for students in an exclusively urban university setting such as the University of the District of Columbia, we developed a survey instrument to gather public perceptions and knowledge on natural resources and climate change.

Statement of Action Taken:

Undergraduates and graduate students in our academic classes over three fall semesters from 2016-2018 collected demographic data from survey participants in 11 neighborhoods in Washington, DC, and asked them 26 questions/statements related to natural resources, climate change, economics, and health. We selected education as the focal demographic category and participants were categorized based on their level of educational attainment: (1) completion of high school or less (hereafter “high school”); (2) some trade school or university education beyond high school up to and including completion of a trade school, two, or four-year degree (hereafter “post-high school”); and (3) completion of a Master’s, professional, or doctoral degree (hereafter “advanced education”). Students analyzed the survey data as part of their academic courses. Furthermore, we did an overall analysis to publish a paper titled “People with Different Educational Attainment in Washington, DC, USA have Differential Knowledge and Perceptions about Environmental Issues” in the journal *Sustainability* in 2020.

REOPENING OF BERTIE BACKUS URBAN FOOD HUB (Continued)

Statement of Results:

We surveyed 455 participants and those with advanced education reported the highest connection with nature and were more likely to report that their personal welfare depended on the natural community. Participants with the least education were more likely to believe that humans do not have much influence on natural resources and placed more trust in technology and human achievements to control nature and ensure that earth will not become unlivable. Participants with the least education were also more likely to express an interest in local environmental concerns over global, jobs over natural resources, and effects of degraded local natural resources on income, health, and the environment instead of on cultural/social practices, neighborhood aesthetics, and recreation.

Understanding what people know and perceive is key to designing effective educational programs, engaging in collective conversations, and building effective partnerships that find solutions for environmental problems that benefit the community. For example, stakeholders with advanced degrees may likely think and act more globally and show more of an interest in curtailing environmental problems that have a negative impact on their recreation, neighborhood aesthetics, and cultural/social practices. On the other hand, stakeholders with a high school education are likely to focus on local concerns and issues that have a more immediate impact on jobs and income.

Project Contact:

Dr. Matthew Richardson, Assistant Director, Urban Agriculture Research
matthew.richardson@udc.edu

Dr. Elgloria Harrison, Former Associate Dean for Academic Programs (CAUSES)

SENIOR COMPANION PROGRAM



Statement of the Issue:

Senior Companion volunteers are still facing challenges due to the Coronavirus pandemic (COVID-19). As we get older, the risk for severe illness from COVID-19 increases. The Centers for Disease Control and Prevention (CDC) states that people in their 60s and 70s are at a higher risk of being hospitalized. In fact, 8 out of 10 COVID-19 related deaths reported in the United States have been among adults aged 65 years and older. These are difficult times for everyone as we work to keep our volunteers and clients safe. Therefore, we have implemented new procedures and policies in accordance with AmeriCorps (grantor), University of the District of Columbia, and the CDC. A program such as the Institute of Gerontology, Senior Companion Program, is critical to bringing new programming that abides by government and University guidelines to balance public health concerns with the needs of our volunteers, clients, and community.

Statement of Action Taken:

The Senior Companion Program (SCP) funded by AmeriCorps, trained Senior Volunteers aged 60 years and older, living in the District of Columbia, to serve virtually other District citizens in their places of residence.

The SCP postponed all face-to-face programming due to the Coronavirus pandemic. New procedures were put in place to connect Senior Companion staff, volunteers, and clients. Virtual meetings were made accessible so volunteers could maintain physical distancing and other measures to slow the spread of COVID-19. SCP increased the use of virtual meetings, workshops, text messaging, and emails. WebEx and Zoom were selected, and WebEx instructional training was conducted for all volunteers. In-Service meetings were conducted as required by the grantor agency.

SENIOR COMPANION PROGRAM (Continued)

Statement of Results:

During the COVID-19 pandemic, the Senior Companion Program, Institute of Gerontology, Center for Nutrition, Diet and Health, has continued providing services to adults 60 years of age and older. From July to September 2020, 71 volunteers participated in the virtual WebEx monthly In-Service meetings. We conducted six (6) 90-minute WebEx user trainings. Fifty-Three (53) out of 65 volunteers were trained to use Cisco WebEx, email, and text messaging. As a result, the Senior Companion Program was able to provide 4,247 hours of programming and services via wellness checks with clients and other homebound older adults in the DC community.

Project Contact:

James Lee, Volunteer Program Coordinator
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BODYWISE AND RESPITE AIDE SENIOR PROGRAMS



Statement of the Issue:

Regular exercise has been linked to reduction in premature mortality, functional decline, disability, and coronary heart disease. The Bodywise Program is a health promotion program that encourages health, wellness, fitness, and disease prevention for District of Columbia residents 60 years of age and older. Benefits achieved from the program include an increase in cardiovascular efficiency, improved muscular strength and flexibility, and increased knowledge of physical activity.

In-home support has been proven to be successful in maintaining the quality of life for individuals aging in their homes. The Respite Aide Program has been providing respite services for 14 inhome persons and caregivers in the District. The program alleviates caregivers and provides companionship and support to clients in need.

BODYWISE AND RESPITE AIDE SENIOR PROGRAMS (Continued)

Statement of Action Taken:

Health promotion newsletters, weekly status checks and virtual exercise classes have been conducted to assess the well-being of clients and participants during the COVID-19 pandemic. These weekly wellness checks are conducted via telephone and virtually. During the checks, the participants and respite aides are evaluated and asked about their overall health and well-being, their access to necessities, access to other individuals and if they have been following the COVID-19 restrictions and guidelines. Virtual exercise classes and online activities were conducted to keep the seniors involved and engaged. A new activity was added to the virtual list for the seniors. There was collaboration with the UDC Supplemental Nutrition Assistance Program Education (SNAP-Ed) to host virtual nutrition classes and cooking demonstrations. The topics are chosen by the participants and conducted weekly. Examples of topics include food and safety, fiber, protein, nutrition, and exercise.

Statement of Results:

The Bodywise Program provided services to over 500 older adults in the District of Columbia, superseding the original goal of 450 seniors served during the grant year. Participants take an annual survey, administered through SurveyMonkey, to measure the effectiveness of the program. The data is aggregated with a summary report at the end of each grant period. During this period, 96% of the participants polled believed the Bodywise Program was beneficial to their health and well-being. During this reporting period, an unduplicated count of over five hundred (500) of the five hundred and sixty (560) seniors enrolled participated in the Bodywise classes. Regular exercise has been linked to decrease in premature mortality, functional decline, disability, and coronary heart disease.

The Respite Aide Program provided services to all 14 clients in Ward 2, Chinatown. The Respite Aide volunteers and clients take an annual survey administered by the Director of the Asian and Pacific Islander Senior Service Center to measure the effectiveness of the program. The data is aggregated with a summary report at the end of each grant period. During this period, all 14 volunteers and clients believed the Respite Aide Program was beneficial and valuable to their overall health and well-being. The Respite Aide services will remain in partnership with other community agencies and will have four new partnerships to engage in six (6) in-service continual learning sessions on senior resources, health, and wellness topics. This collaboration within the communities will strengthen community engagement among the elderly and their families.

Project Contact:

Kiera Ortiz, Program Coordinator, Bodywise and Respite Aide Programs
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UDC SUPPLEMENTAL NUTRITION ASSISTANCE PROGRAM-EDUCATION (SNAP-ED)



Statement of the Issue:

Nutrition is critical for the healthy growth and development of children. Obesity, chronic disease, and premature mortality can be prevented with healthy eating habits (Khambalia, et al, 2012). Low- and middle-income populations are the most prone to obesity. The obesity rate of children who live in households below the poverty level in the US is 2.7 times the average (Warren et al., 2018). School-based interventions can be the most effective way to change the nutritional knowledge and behavior of children (Boocock, 1995).

An increased number of DC residents are receiving SNAP benefits now because of high unemployment rates due to COVID-19. Families who were relying on free and reduced meals from school now must provide food to their children at home. Teaching healthy nutrition on a budget remains as important as ever given these new challenges.

UDC SUPPLEMENTAL NUTRITION ASSISTANCE PROGRAM-EDUCATION (SNAP-ED) (Continued)

Statement of Action Taken:

The Center for Nutrition, Diet and Health, Supplemental Nutrition Assistance Program Education (SNAP-Ed) contributed to meeting national health objectives by targeting children 2-5 years old in schools and childcare, their caregivers, and families. SNAP-Ed provided virtual nutrition education classes to adults and seniors by partnering with local food banks and senior centers, including Martha's Table (Ward 8), Jones Baptist Church Food Pantry (Ward 7), Washington Senior Wellness Center (Ward 8), East River Family Strengthening Collaborative (Ward 7), and UDC Gerontology Program (Ward 3). These classes reached approximately 600 DC residents.

SNAP-Educators created recorded lessons for 2-5-year-olds, beginning with an introduction to the MyPlate food groups and hand hygiene. During the month of September, the SNAP-Ed team began filming and editing content to use for virtual instruction in FY21. *Nutrition Essentials*, the UDC-developed curriculum for preschool children, was also updated to appear more modern and reflect the most current Dietary Guidelines for Americans. The SNAP-Ed team also updated the Teacher Toolkit Training Guide which now includes the monthly nutrition newsletters in Spanish.

Statement of Results:

The SNAP-Ed team encouraged more teachers to complete the retrospective survey for the 2019-2020 school year. At this time, 48 teachers have completed the online survey. The results indicated that 80% of students increased their intake of fruits, vegetables, low-fat dairy, and whole grains. The teachers said that compared to the beginning of the school year, more students now can identify healthy food choices. A teacher from Neval Thomas Elementary School in Ward 7 shared what she likes most about the program: "I love SNAP-Ed and so do my students. I love how it engages students in a fun way to learn about healthy choices and living healthier lifestyles. It also makes me talk about things more often with my class during breakfast, family-style lunch, and snacks about the healthy things they are eating. I also enjoy seeing my students who normally eat a lot of unhealthy snacks try new things when Mr. Brown comes into the classroom." When asked to share a memorable healthy eating moment from the school year, a teacher from Raymond Education Campus in Ward 4 replied, "Parents shared stories about shopping with their children. The students are more verbal and helped the parents to look for food that is more nutritious." Another teacher from Drew Elementary School in Ward 7 is incorporating nutrition lessons in the classroom by having "family-style meals, where [they] sit and have discussions about the foods [they] are eating. [She tries] to incorporate the monthly lessons into these conversations."

Project Contact:

Alison Gerber, Senior Program Coordinator, SNAP-Ed
alison.gerber@udc.edu

UDC SUPPLEMENTAL NUTRITION ASSISTANCE PROGRAM-EDUCATION (SNAP-ED)



Statement of the Issue:

A lack of nutrition and physical activity education for young people in the United States has contributed to an increase in childhood obesity, which can lead to heart disease, diabetes, cancer, and even premature death. According to the Centers for Disease Control and Prevention (CDC), students in the US receive less than eight of the recommended 40 to 50 hours of nutrition education each school year (cdc.gov). Because teachers already have so many demands each day, it can seem daunting to add nutrition education to the class schedule.

Nutrition is critical for the healthy growth and development of children. Obesity, chronic disease, and premature mortality can be prevented with healthy eating habits (Khambalia, et al, 2012). Low- and middle-income populations are the most prone to obesity. The obesity rate of children who live in households below the poverty level in the US is 2.7 times the average (Warren et al., 2018). School-based interventions can be the most effective way to change the nutritional knowledge and behavior of children (Boocock, 1995).

Because of high unemployment rates due to COVID-19, an increased number of DC residents are now receiving SNAP benefits. Families who were relying on free and reduced meals from school must now provide food to their children at home. Teaching healthy nutrition on a budget remains as important as ever, given these new challenges.

UDC SUPPLEMENTAL NUTRITION ASSISTANCE PROGRAM-EDUCATION (SNAP-ED) (Continued)

Statement of Action Taken:

The Supplemental Nutrition Assistance Program Education (SNAP-Ed), Center for Nutrition, Diet, and Health (CNDH), contributed to meeting national health objectives by targeting children 2-5 years old in schools and childcare, their caregivers, and families.

Due to COVID-19, nutrition education was administered remotely since March 16, 2020. Nutrition resources were shared with partner schools and childcare centers to continue to promote healthy behaviors, especially during such a challenging time. Dairy and whole grains lessons were taught and resources shared included monthly parent newsletters and healthy dairy and whole grain recipes to try at home, dairy and whole grain fact sheets, and “Alive with Five,” “Do Your Body Right,” and “Do and Be” nutrition education videos.

Statement of Results:

Due to COVID-19, schools closed earlier this year. During July and August 2020, we provided nutrition education services to childcare centers. Thirty participants, including 24 adults and 6 children, received nutrition education at Azeeze Bates Child Development Center, in Ward 5. The center director reported being grateful for the continued nutrition education during this challenging time.

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VEGGIE SERIES VIRTUAL CERTIFICATE PROGRAM



Statement of the Issue:

With the unexpected Coronavirus Disease (COVID-19) pandemic, District residents, especially those who are essential and/or frontline workers who have pre-existing conditions (i.e., overweight/obesity, hypertension, diabetes, immune, respiratory, etc.), with limited access to health care and healthy foods, are most vulnerable because they have the risk factors that can exacerbate COVID-19, which could be fatal for some.

Research has repeatedly shown that frequent consumption of fruits and vegetables will assist in eradicating nutrition-related diseases (i.e., hypertension, certain cancers, diabetes, etc.). Fruits and vegetables are sources of antioxidants, phytochemicals and beneficial nutrients known to provide protective benefits to the body systems, especially the immune system.

Free health and wellness workshops, focusing on the importance and benefits of healthy eating are essential in our communities to increase knowledge and change lifestyle behaviors of our residents for good health through COVID-19 and beyond.

VEGGIE SERIES VIRTUAL CERTIFICATE PROGRAM (Continued)

Statement of Action Taken:

During the pandemic, the Center for Nutrition, Diet and Health (CNDH) focused its efforts on developing virtual workshops to continue to meet the nutritional needs of the community. Dr. Tiffany Johnson-Largent developed two workshops. The first workshop, *Veggie Series*, is a 15-hour certificate program that discusses the nutritional benefits of 12 different vegetables, how to select, store and prepare these different vegetables. The second workshop, *Quick Tips to Understanding the Nutrition Facts Label*, is a one (1) hour workshop developed to teach workshop attendees the importance of understanding the information presented on the nutrition facts label to help prevent the development of nutrition-related diseases (i.e., obesity, diabetes, hypertension, hypercholesterolemia and certain cancers) and/or management.

Nine (9) virtual health and wellness workshops were held with approximately 40 direct adult contacts via Web-Ex.

Statement of Results:

Five (5) 15-hour certificates and three (3) one-hour certificates were awarded. Twenty-one (21) pre and post-tests were administered and six (6) follow-up surveys. During this reporting period, the goals were to: (1) increase knowledge, (2) promote behavior changes, and (3) encourage the consumption of fruits and vegetables amongst the workshop attendees. The following questions were asked before and after the workshop:

1. Before today's workshop, I can identify one (1) cup of most vegetable foods I eat.
2. Before today's workshop, I can identify or discuss a health benefit of eating vegetables.
3. In the past month, I ate two (2) cups of vegetables most days.
4. In the next month, I will eat two (2) cups of vegetables most days.
5. In the past month, I ate a variety of colored vegetables (i.e., red, green, purple/blue, white, orange/yellow, etc.)
6. In the next month, I will eat a variety of colored vegetables (i.e., red, green, purple/blue, white, orange/yellow, etc.)

Pre-Questions	High	Moderate	Little	No Skill
8 Respondents				
Question 1	3 (37.5%)	3 (37.5%)	2 (25%)	0
Question 2	2 (25%)	3 (37.5%)	3 (37.5%)	0
	Always	Usually	Sometimes	Never
Question 3	2 (25%)	2 (25%)	3 (37.5%)	1 (12.5%)
Question 4	4 (50%)	3 (37.5%)	1 (12.5%)	0
Question 5	2 (25%)	4 (50%)	2 (25%)	0
Question 6	0	7 (87.5%)	1 (12.5%)	0

VEGGIE SERIES VIRTUAL CERTIFICATE PROGRAM (Continued)

1. After completing this workshop, I can identify one (1) cup of most vegetable foods I eat.
2. After completing this workshop, I can identify or discuss a health benefit of eating vegetables.
3. In the past month, I ate two (2) cups of vegetables most days.
4. In the next month, I will eat two (2) cups of vegetables most days.
5. In the past month, I ate a variety of colored vegetables (i.e., red, green, purple/blue, white, orange/yellow, etc.)
6. In the next month, I will eat a variety of colored vegetables (i.e., red, green, purple/blue, white, orange/yellow, etc.)

Post-Questions	High	Moderate	Little	No Skill
9 Respondents				
Question 1	9 (100%)	0	0	0
Question 2	9 (100%)	0	0	0
	Always	Usually	Sometimes	Never
Question 3	6 (66.7%))	3 (33.3%)	0	0
Question 4	7 (77.8%)	2 (22.2%)	0	0
Question 5	6 (66.7%)	2 (22.2%)	1 (11.1%)	0
Question 6	6 (66.7%)	3 (33.3%)	0	0

From the pre-evaluations, 37.5 % of the respondents reported high and moderate to question one, whereas 100% of the respondents for the post-evaluation reported high. Twenty-five percent (25%) of the respondents for question two pre-evaluation reported high, compared to 100% of the respondents for question two post evaluation. Twenty-five percent (25%) of question three pre-evaluation respondents reported always compared to 66.7% in the post-evaluation. Fifty percent (50%) of the respondents for question 4 in the pre-evaluation reported always compared to 77.8% in the post evaluation. Twenty-five percent (25%) of the respondents reported always to question five in the pre-evaluation compared to 66.7% in the post-evaluation. No respondents reported high for pre-evaluation question six compared to 66.7% of the respondents who reported always in the post-evaluation. Increase in knowledge and behavior was shown for this 15-hour certificate course on vegetables.

Testimonials:

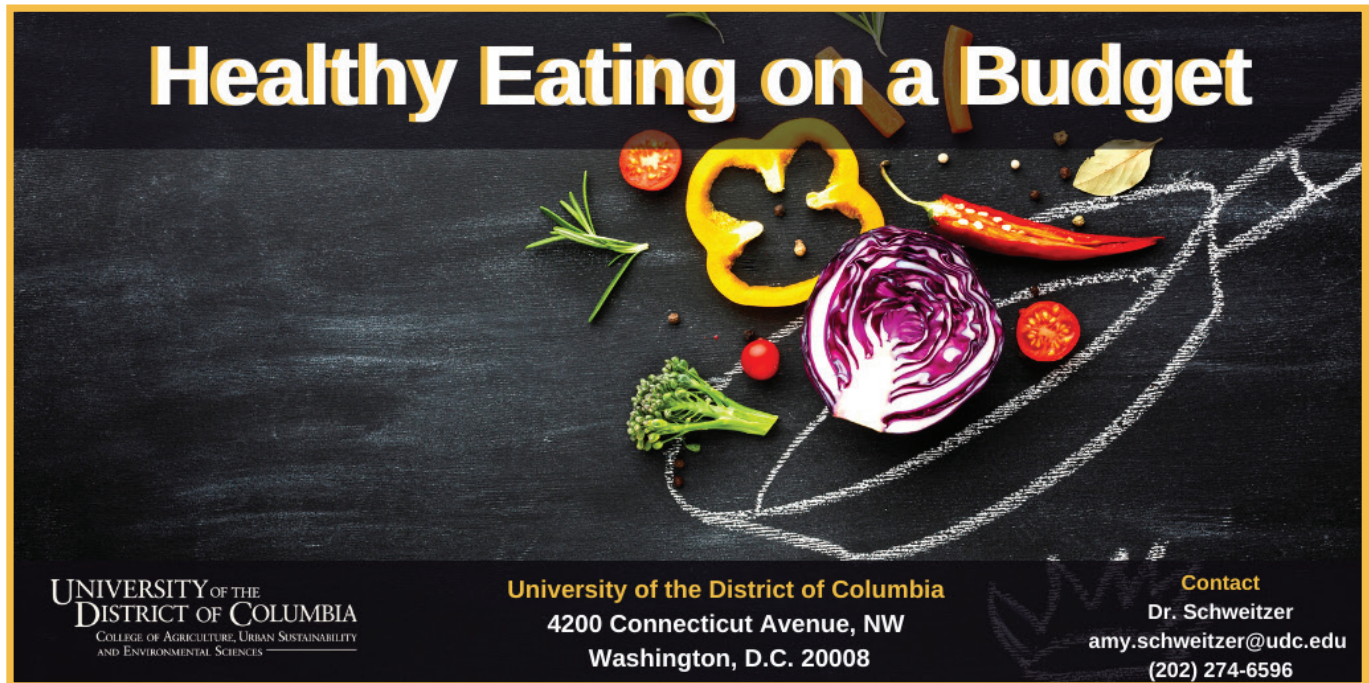
"I have enjoyed your classes, your teaching style, and content and would love to take more from you." Excerpt from email (7/15/2020) – S.W. – Veggie Series 15-Hour Certificate Workshop Attendee.

"I also would like to say how much I enjoyed [the class]. Your class [was]informative, interactive, and fun. I enjoyed [how] you put the information in everyday language." Excerpt from email (9/01/2020) – P.W. – Quick Tips to Understanding the Nutrition Facts Label - One-Hour Workshop Attendee.

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EATING HEALTHY ON A BUDGET VIRTUAL CERTIFICATE PROGRAM



Statement of the Issue:

Persistently high rates of non-communicable disease with their resultant increased medical costs require comprehensive and coordinated prevention strategies.

Statement of Action Taken:

Dr. Amy Schweitzer, Project Specialist for Community Education, Center for Nutrition, Diet and Health developed dietary guideline education sessions and food demonstrations for residents of the District of Columbia.

DC residents in Wards 3, 4, and 7 have participated in regular dietary guidelines education sessions through online adult seminars with Columbus Property Management (Ward 7), a series of six session certificate courses to residents (Wards 3, 4 and 7), and via educational handouts at the Sixth Presbyterian Church Food Closet (Ward 4).

Statement of Results:

More than 25 residents who attended the Eating Healthy on a Budget virtual workshops weekly in July, August, and September 2020 expressed a need to increase dietary fiber, decrease sugar intake, and increase fruit and vegetable intake after attending the sessions. Residents expressed understanding of food labels regarding sodium and fiber after attending the workshops. Sixth Church Food Closet has Spanish-speaking participants who were requesting recipes for foods provided at the pantry. Dr. Amy Schweitzer provided English and Spanish versions of recipes to over 30 participants, twice per month, in July, August, and September 2020 for the Sixth Church Food Closet. Over half of the Columbus Property Management participants have met educational objectives. Additional connections have been made in Ward 5 (Crowder Owens Calvary Food Bank), Ward 6 (So Others Might Eat), and Ward 3 (Northwest Neighbors Village) to provide regular virtual nutrition education programs.

Dr. Schweitzer also taught an upper-level undergraduate course and practicum to 13 UDC students in Nutrition and Dietetics. The practicum applies all the knowledge gained from the lecture which focuses on Nutrition Education theories and practices. The students are presented virtual community education sessions in the District of Columbia as well as Maryland, New Jersey, and Florida under the guidance of their site preceptors. Twelve (12) out of 13 students have demonstrated their ability to evaluate scientific literature, write objectives, and develop lesson plans as well as demonstrate their understanding of professional communication through graded projects and discussion sessions.

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ADVANCING YOUTH DEVELOPMENT INTENSIVE 15-HOUR CERTIFICATE PROGRAM



Statement of the Issue:

The DC Department of Parks and Recreation (DC DPR) Roving Leaders Team requested that UDC CAUSES 4-H & Youth Development staff facilitate an Advancing Youth Development Intensive 15-Hour Training Course for their 30 team members. Roving Leaders expressed a desire to yield three outcomes:

1. Better interactions between Roving Leaders and the young people they serve;
2. More professional development opportunities for their team members; and
3. An understanding of Advancing Youth Development principles to serve as a youth worker “toolkit.”

Statement of Action Taken:

UDC CAUSES 4H staff facilitated an Advancing Youth Development Intensive 15-Hour Training Course for 30 DC DPR Roving Leaders. Advancing Youth Development (AYD) is a nationally acclaimed course designed for front-line youth workers who interact with adolescents daily. The 15 and 30-hour courses are based on curricula from 4H and Youth Development and Policy Research. Seven sessions cover the language of youth development and the history of youth work, the youth development framework, fostering youth participation and leadership, culturally competent programming, program assessment, and professional competencies of youth workers.

Statement of Results:

After the training course, team members received a certificate of completion. This certificate met the professional development objective. The Roving Leaders self-reported the following outcomes:

1. Survey responders reported that they had learned how to better interact and connect with young people.
2. Survey responders reported that they obtained a greater understanding of youth development concepts including, but not limited to, intentional program design, youth needs, and developmental outcomes.
3. Survey responders reported that they would use their newfound knowledge daily.

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WATER RESOURCES RESEARCH INSTITUTE/ENVIRONMENTAL QUALITY TESTING LAB



Statement of the Issue:

Healthy tap water depends on healthy source water. Nevertheless, the Potomac River, which is the source of the DC's tap water, and its main tributaries, the Anacostia, and Rock Creek, are impaired with microbial and other organic and inorganic contaminants. Subsequently, the DC waterways are neither swimmable nor fishable. According to the Sustainable DC plan, all DC waterways will be 100 percent fishable and swimmable by 2032. To accomplish this ambitious plan, nationally recognized, unbiased laboratory testing, research and teaching programs are crucial. The mission of the Water Resources Research Institute (WRRI) is to support DC water projects in identifying problems and contributing solutions. To accomplish its mission, the Institute has initiated three major programs. First, to advance water research through 104b seed grants and funding innovative research projects that would not be funded otherwise. Second, to continue to build and sustain a nationally accredited environmental quality testing laboratory for unbiased monitoring services. Finally, to prepare future water and environmental sustainability scientists and engineers through our three tracks of the Professional Science Master's program. Through these three activities, the Institute continues to support the UDC land-grant mission for research, teaching and community service. This document summarizes the statement of action taken and results accomplished during FY 20.

Statement of Action Taken:

After the training course, team Research and information transfer (WRII) – The Institute continued soliciting innovative research proposals and managing funded projects to provide support to DC water projects. The Institute provides technical support for young researchers to build capacity in leveraging extramural funding. We also continued collaboration with regional and national water organizations in information transfer.

Laboratory testing services (EQTL) – The Institute continued to expand and sustain its national laboratory accreditation of the UDC Environmental Quality Testing Laboratory (EQTL). With this world class laboratory, the mission of the Institute is to advance UDC's environmental research infrastructure, provide laboratory testing services with recoded quality, and most importantly, train future water and environmental scientists or engineers. Furthermore, the EQTL lab supports researchers to leverage extramural funding. Finally, by sustaining its national accreditation, the lab supports stakeholders that require accredited laboratories for compliance testing.

Academic Services - Professional Science Master's Program (PSM) – The Institute continued to enhance the PSM program activities including recruitment, retention, and student learning outcomes. The Institute leads the programming and assessment of all three PSM tracks, including Urban Agriculture, Urban Sustainability and Water Resources Management. In collaboration with program coordinators and other stakeholders, the program is continuously reviewed to ensure that graduates are prepared to contribute upon completion of their respective programs.

Statement of Results:

Research and information transfer (WRII) – In FY20, the Institute received a \$125,000 grant from the USGS 104b program as part of its fifth-year funding (Table 1), and then funded 10 research projects, each up to \$10,000.00, in three research areas: water treatment, water quality, and ground and surface hydrology. We received a no-cost extension for last year's and this year's funding periods. The new end dates are December 31, 2020, for last year, and December 31, 2021, for this year's projects, respectively (Table 1 and 2). Through the seed grant, the Institute continued to solicit and fund innovative research projects that are be able to identify key DC water issues and contribute to its solutions. We provided technical support to principal investigators to not only accomplish their proposed goals through encouraging the publication of their research findings, but also to help them in the collaboration with our major stakeholders, to maximize the impacts of their research findings.

WATER RESOURCES RESEARCH INSTITUTE/ ENVIRONMENTAL QUALITY TESTING LAB (Continued)

Table 1. Year 5 Projects - Project end date is December 31, 2021

Project Title	Budget
Administrative Project: research capacity building	\$35,125
Developing a flexible modeling tool for integrated optimal control of stormwater BMPs	\$9,962
New Framework for Estimating Groundwater Recharge from Remotely Sensed Surface Observations	\$10,000
Using zebrafish to assess water health of Paint Branch Stream, an upstream tributary within the Anacostia Watershed	\$10,000
Development of a Real-Time Low Flow Forecast System Based on Machine Learning Methods	\$10,000
Toxicity of organic contaminants in urban and suburban areas of the Anacostia and Potomac Rivers	\$10000
Performance evaluation of membrane bioreactor (MBR) in sustainable buildings for potable water in the DC area	\$9,933
Impact of high strength wastes (HSW) co-digestion with sludges on the performance of lab-scale anaerobic digesters and biogas methane potential (BMP) assays with potential to generate H ₂	\$9,980
Monitoring E. coli, Trace metals, and Polycyclic Aromatic Hydro-carbon Contamination in the Downstream Tributaries of the Anacostia River in Washington, DC	\$10,000
Next-generation effects-based monitoring of contaminants in the Anacostia and Potomac Rivers	\$10,000

Table 2: Year 4 Funding – Project end date is December 31, 2020

Project Title	Budget
Program Administration: Research capacity building	\$22,390
Concentrations of siloxanes, polycyclic aromatic hydrocarbons, and cations in urban and suburban areas of the Anacostia	\$10,000
Application of deep reinforcement learning in optimizing the operation of biofilters in carbon and nitrogen removal from storm-water	\$9,999
Resilience-Based Water Infrastructure Rehabilitation Planning in the District of Columbia.	\$10,000
Development of Streamflow Prediction Model and Software Package for Anacostia River at Non-gauged Locations based on Bayesian Approach	\$10,000
Monitoring Polycyclic Aromatic Hydrocarbons in the downstream tributaries of Anacostia River and Rock Creek watershed in DC	\$10,000
Risk Assessment of Levees in the Face of Flood Hazards in the District of Columbia	\$9,966
Runoff control performance evaluation and development of design guideline for green roof systems for District of Columbia- Phase II	\$9,980

WATER RESOURCES RESEARCH INSTITUTE/ ENVIRONMENTAL QUALITY TESTING LAB (Continued)

Regarding information transfer, the Institute continued to collaborate with the regional and national American Water Resources Association (AWRA). Dr. Deksissa has served as a member of the advisory board for the last two years, and currently as President Elect of the North Capitol Section of the American Water Resources Association. This year, we organized two quarterly workshops with two timely themes: “Algal Blooms: Why they matter and what to do” hosted at George Washington University on November 5, 2019, and “PFAS in Water: Policy and Management” hosted at Howard University on March 10, 2020. On October 9, 2020, we hosted the virtual Annual conference via UDC. In addition, the Institute is part of the organizing committee to host the National Annual AWRA in April 2021 at UDC. The Institute continued participating in the monthly planning meeting for the annual water symposium and national conference.

Fact Sheets:

Sania Rose & Tolessa Deksissa (2020). E. coli Contamination of Food and Water

Sebhat Tefera & Tolessa Deksissa (2020). Arsenic Contamination in Soil and Water

Laboratory testing services (EQTL) – We managed to sustain our National Environmental Accreditation Laboratory Program (NELAP) in microbial testing and trace metals since 2015. The lab successfully completed all required proficiency testing activities every six months. The lab was closed December 2019 through July 15, 2020 due to covid-19 pandemic. In the last quarter of FY 2020, the Institute tested water samples for research projects, trained graduate, and undergraduate students in water quality testing, prepared two fact sheets, and successfully reinstalled most of our laboratory instruments. This year, we tested 1662 soil and water samples (Figure 1). The major portion of the testing service was related to research projects and training students. The community services accounts for a lower percentage of the lab service because the lab was closed for nine (9) months for renovation and the COVID-19 pandemic. When the lab was not in operation, we tested only microbial and other common soil and water quality including pH, total nitrogen, and total phosphorous. UDC researchers requested these common laboratory services.

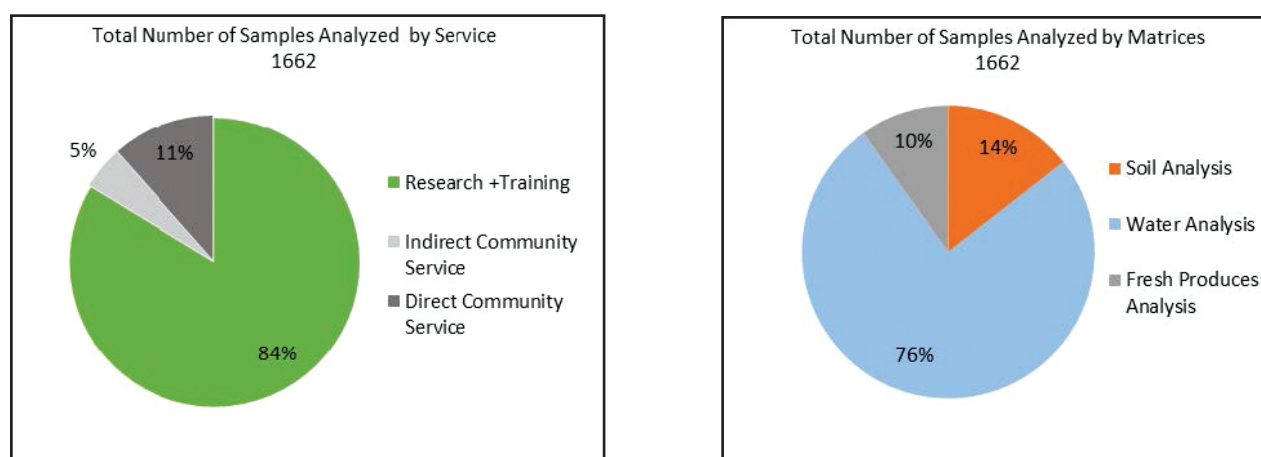


Figure 1. Soil and water sample testing services

WATER RESOURCES RESEARCH INSTITUTE/ ENVIRONMENTAL QUALITY TESTING LAB (Continued)

Regarding training students and supporting laboratory courses, EQTL supported five graduate and undergraduate laboratory courses. Through fall and spring semesters, we supported approximately 100 undergraduate and undergraduate students, from all UDC colleges, in hands-on laboratory training. Courses supported include general education courses such as Discovery Science, Intro to Environmental Science, and Capstone. In addition, we supported two additional courses offered for majors: Urban Water Quality Management for the School of Engineering and Applied Sciences, and Food Science Engineering for CAUSES.

EQTL provided practical working experience for the PSM and Engineering students. This academic year, six graduate and undergraduate students worked in the lab as research assistants (Table 3). They made significant contributions to both research and laboratory testing services of the Institute. In summary, the lab continued providing research, teaching and service-learning experiences for UDC students.

Table 3. Students who worked in the lab as research assistants include:

Degree	Number of Students	Major
Graduate/PSM	Water Resources Management	4
Undergraduate	Civil Engineering	2

Academic Services - Professional Science Master's Program (PSM) – This year, we successfully completed three major activities. First, we constituted the PSM Advisory Committee and received feedback from the external advisory. Second, the committee reviewed the curriculum of all three PSM tracks and updated its course sequences to foster significant student learning goals. Third, we established and implemented the PSM tuition scholarship. Based on the guidelines developed by the PSM coordinators, we selected two new PSM students for a scholarship, \$20,000 each for the two years of study (Table 4).

Table 4. Students awarded PSM tuition scholarships for Fall 2020 through Spring 2022

PMS Track	Number of Students	Total Tuition Scholarship
Urban Agriculture	1	\$20,000
Water Resources Management	1	\$20,000

WATER RESOURCES RESEARCH INSTITUTE/ ENVIRONMENTAL QUALITY TESTING LAB (Continued)

The Institute continued building its research and teaching infrastructure to foster student experiential learning outcomes. Dr. Deksissa taught three key courses pertaining to experiential learning, including internship, capstone project, and independent study. We trained two undergraduate and two graduate research assistants in water sample collection, sample preparation, sample testing, and reporting test results. As the result, two students submitted two poster presentations for the NCR-AWRA Annual Water Symposium. In addition, three students presented posters at the 50th Anniversary of Earth Day (Table 5). Kevin Turcios won the award for the best poster presentation.

Table 5. Student's poster presentation as the 1st author

First Author	Major	Coauthors	Title of the Poster Presentation
Kevin Turcios	Undergraduate in Civil Engineering	Kamran Zendejdel, Harris Trobman and Tolessa Deksissa	Quantifying the Performance of Rooftop Farms in the District's MS4: Green Roofs Project
Brandon Hunt	Graduate, PSM in Water Resources Management	Tolessa Deksissa	Sustainable Urban Stormwater Management Using Green Infrastructure
Prabashana Rathnayake	Graduate, PSM in Water Resources Management	Tolessa Deksissa	Sustainable Water Resources Management Using Machine Learning

WATER RESOURCES RESEARCH INSTITUTE/ ENVIRONMENTAL QUALITY TESTING LAB (Continued)

Furthermore, we updated the PSM website, and continued actively recruiting and advising PSM students. As a result of the rigorous course curriculum and experiential learning, two PSM students won DOEE green fellowships for 2020 (Table 6):

Table 6. PSM students selected for a year-long DC Government Green Fellowship

PSM Track	Number of Students
Water Resources Management	1
Urban Sustainability	1

In Spring 2020, three students graduated with a PSM degree (Table 7).

Table 7. Spring 2020 graduates

PSM Track	Number of students	Current Employer
Urban Sustainability	1	N/A
Water Resources Management	2	DOEE and World

The status of current enrollment for fall 2020 looks better than fall 2019. Currently, more than twenty students are enrolled in the three PSM tracks (Table 8), Admission and Enrollment.

Table 8. Number of enrolled PSM students for Fall 2020 by track

PSM Track	Number of students admitted
Urban Agriculture	8
Urban Sustainability	6
Water Resources Management	9

The overall impact of the activities of the WRRI includes continued attraction of graduate students to the Professional Science Master's program; enhanced undergraduate and graduate research experiences for underrepresented minority students and volunteers; assistance to UDC students in earning competitive employment opportunities or fellowships; maintaining nationally recognized laboratory testing services to DC residents and beyond; leveraging extramural funding; and creating the opportunity for UDC researchers to collaborate with federal and local government agencies, including DC Water, DC Department of Energy and Environment, DC Department of Transportation, and the U.S. Department of Agriculture.

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