urban INNOVATION

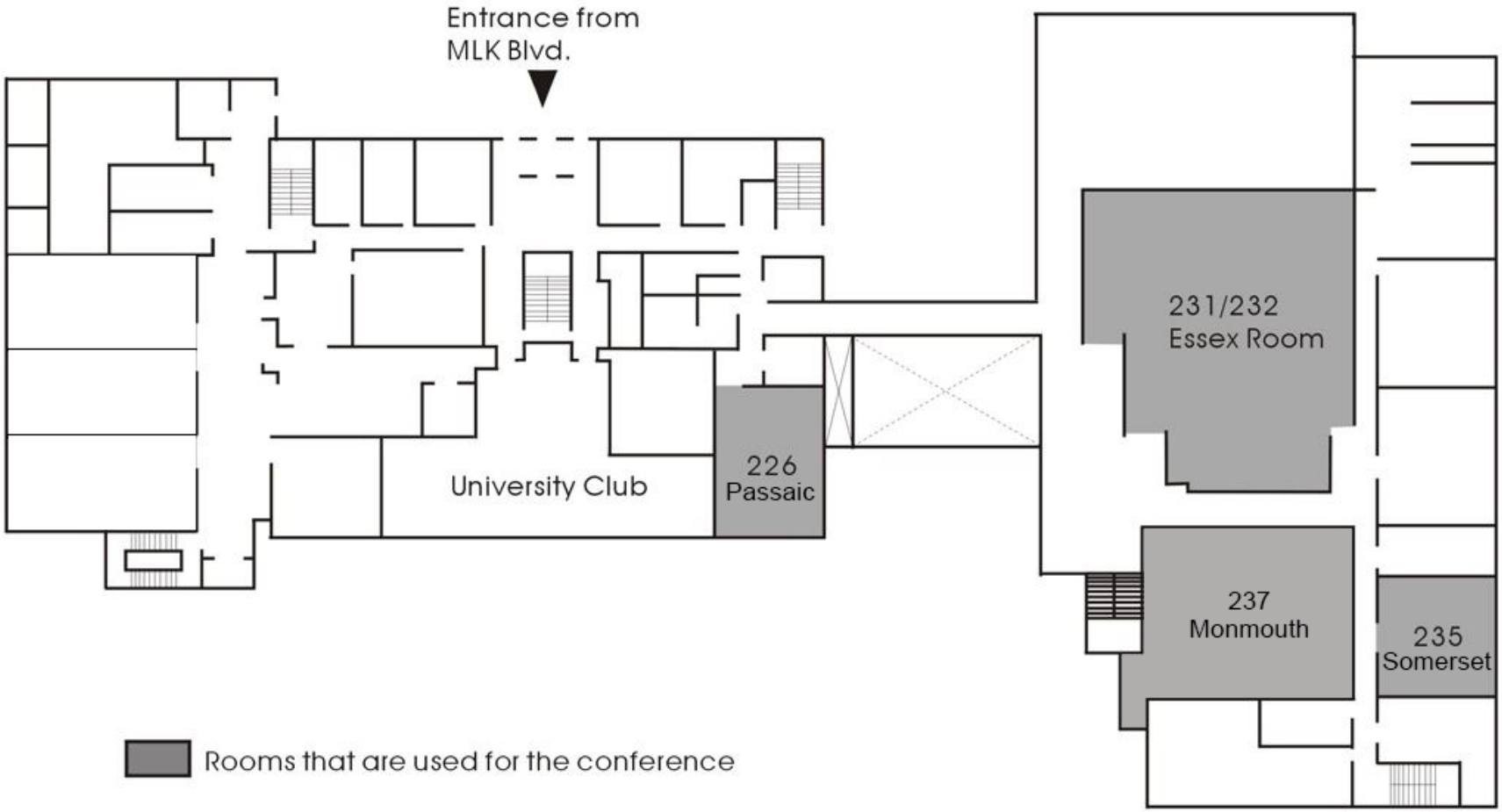
BUILDING COLLABORATIVE PARTNERSHIPS ACROSS UNIVERSITY, COMMUNITY, AND CIVIC LEADERS

NORTHEAST REGIONAL URBAN EXTENSION CONFERENCE

NOVEMBER 29 | NOVEMBER 30

CONFERENCE WORKSHOPS | PROCEEDINGS

Paul Robeson Campus Center : 2nd Floor Map



1766-2016
RUTGERS 250

Welcome!

On behalf of Rutgers, The State University of New Jersey, we would like to welcome you to the Garden State and the City of Newark for the first Northeast Regional Urban Extension Conference. The theme for this conference, Building Collaborative Partnerships across University, Community, and Civic Leaders, reflects the true meaning of what it takes to develop strong cities. The future of Extension, especially in urban areas, is growing and changing each year so we need to be ready to embrace the future as we grow and change with Urban Extension.

For over 100 years, Extension has had the obligation to extend the land-grant university research and knowledge to people across the state, which includes traditional and nontraditional audiences. Many of our programs have relevance for rural, suburban, and urban clientele. It is important that we purposefully address these issues to remain relevant to the people of our states that cut across both rural to high urban demographics.

This conference will expose you to the successful urban activities currently underway in Extension programs throughout the Northeast. Over the next two days, professionals from across disciplines of Cooperative Extension faculty, government officials, and local stakeholders will come together to highlight research and projects that are helping to build more resilient, sustainable, and healthy urban communities. The conference will provide opportunities to build collaborative partnerships, explore emerging urban issues, discover innovative technology for outreach, explore innovative funding practices, and address the challenges of urban programming.

The programs selected for seminars represent the tremendous impact Cooperative Extension is making in urban environments across the county. These professionals are truly making a difference. We hope that you enjoy this conference and depart with the information required to continue making our urban communities sustainable for years to come.

Sincerely,

Robert M. Goodman

Executive Dean

School of Environmental and Biological Sciences

Rutgers, the State University of New Jersey

Larry S. Katz

Director, Rutgers Cooperative Extension

OVERVIEW

TUESDAY | NOVEMBER 29

8:30AM -9:00AM	**REGISTRATION**
9:00AM - 9:35AM	**OPENING REMARKS**
9:35AM - 10:25AM	**CONCURRENT SESSION 1**
10:25AM - 10:40AM	**COFFEE/REFRESHMENTS**
10:40AM - 11:30AM	**CONCURRENT SESSION 2**
11:35AM - 12:00PM	**BUILDING PARTNERSHIPS TO STRENGTHEN URBAN PROGRAMS**
1:00PM - 1:50PM	**CONCURRENT SESSION 3**
2:05PM - 3:00PM	**CONCURRENT SESSION 4**
3:05PM - 3:30PM	**THE WESTERN METRO CENTER: A MODEL FOR MULTI-INSTITUTIONAL INVESTMENT IN METROPOLITAN EXTENSION**
3:30PM - 5:00PM	**RECEPTION**

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WEDNESDAY | NOVEMBER 30

8:30AM -9:00AM	**REGISTRATION**
9:00AM - 9:10AM	**OPENING REMARKS**
9:10AM - 9:35AM	**CHALLENGES OF SCALE**
9:35AM - 10:25AM	**CONCURRENT SESSION 1**
10:25AM - 10:40AM	**COFFEE/REFRESHMENTS**
10:40AM - 11:30AM	**PANEL: ADDRESSING THE CHALLENGES OF FUNDING URBAN PROGRAMS IN EXTENSION**
11:35AM - 12:00PM	**IF URBAN EXTENSION WAS EASY, EVERYONE WOULD DO IT**
1:00PM - 1:50PM	**POSTER SESSION**
1:25PM-1:50PM	**BUILDING PARTNERSHIPS BETWEEN GOVERNMENT, UNIVERSITY, AND COMMUNITY TO ADDRESS CLIMATE CHANGE**
1:50PM - 2:05PM	**COFFEE/REFRESHMENTS**
2:05PM - 3:00PM	**CONCURRENT SESSION 2**
3:05PM - 3:30PM	**CLOSING REMARKS**

KEYNOTE SPEAKER

BUILDING PARTNERSHIPS TO STRENGTHEN URBAN PROGRAMS

TUESDAY, NOVEMBER 29TH, 11:35AM - 12:00PM

Today's problems go beyond yesterday's solutions. What worked in the 1990s will probably not work today. The complexities of the problems call for creative and new partnerships. This session will focus on new partnerships being explored by ECOP (Extension Committee on Organization and Policy) in the areas of health, water security, community development and urban agriculture, to include brainstorming on how to move innovation forward.

FEATURING: NANCY H. BULL
Executive Director, Northeast Cooperative Extension Directors (NEED)

KEYNOTE SPEAKER

THE WESTERN METRO CENTER: A MODEL FOR MULTI-INSTITUTIONAL INVESTMENT IN METROPOLITAN EXTENSION

TUESDAY, NOVEMBER 29TH, 3:05PM - 3:30PM

Facing the defunding of County Extension offices in major metropolitan areas with little to no national leadership in addressing how Extension stays relevant in metropolitan communities, the Western Extension Directors Association established the Western Center for Metropolitan Extension and Research. They charged the Center to:

1) Increase the internal capacity of Extension programs to address metropolitan issues.
2) Elevate the stature and value of Cooperative Extension to external metropolitan audiences.

This session will discuss the process of establishing the center including rationale and operational components, the operational structure, and current and planned activities of Center.

FEATURING: BRADLEY GAOLACH
Center Director, Metropolitan Center for Applied Research and Extension

KEYNOTE SPEAKER

CHALLENGES OF SCALE

WEDNESDAY, NOVEMBER 30TH, 9:10AM - 9:35AM

Jennifer Sarah Tiffany will discuss the work of urban Extension in large, complex metropolitan settings, with a focus on strategies for meeting the challenges of scale. Extension staffs are often small relative to the overall population. Our capacity is expanded through partnerships, mobilization of community capabilities, and development of integrated programs that address multiple objectives.

FEATURING: JENNIFER SARAH TIFFANY
Executive Director, Cornell University Cooperative Extension NYC Programs

KEYNOTE SPEAKER

IF URBAN EXTENSION WAS EASY, EVERYONE WOULD DO IT

WEDNESDAY, NOVEMBER 30TH,11:35AM - 12:00PM

To demonstrate the good, bad, and ugly of urban Extension engagement, Fox will share examples of university steps and missteps with multi-stakeholder agendas. Lessons learned will be illustrated with a primary focus on the complex issues related to food systems. Food connects people unlike any other topic. At the Ohio State University (OSU), faculty, staff, students, local community partners, university neighborhood residents, global industry collaborators, alumni, the media, and other urban community stakeholders engage in food systems. At OSU, Extension collaborates with internal and external partners for food system teaching and learning; research and innovation; outreach and engagement; and resource stewardship. Extension professionals at all levels and in all disciplines will gain insight into making urban engagement easy so that everyone can do it.

FEATURING: JULIE FOX
Associate Chair, Department of Extension; OSO in the City Strategic Leader and Central Regional Director

KEYNOTE SPEAKER

BUILDING PARTNERSHIPS BETWEEN GOVERNMENT, UNIVERSITY, AND COMMUNITY TO ADDRESS CLIMATE CHANGE

WEDNESDAY, NOVEMBER 30TH, 1:25PM - 1:50PM

Climate change creates many hazards for communities including risks to health, infrastructure, and ecosystems. Joseph Siegel, of the U.S. Environmental Protection Agency, Region 2 office in New York, will discuss models of multi-stakeholder collaborative problem-solving to address climate change impacts. Among the models to be discussed is a post-Sandy facilitated effort on Long Island involving a partnership between multiple layers of government, academia, an NGO and community members. Tools and strategies for communities seeking collaborative partnerships on climate change and other environmental issues will be shared, including the Educational Partnerships for Innovations in Communities Network (EPIC-N), a program that fosters university/community collaboration

FEATURING: JOSEPH A. SIEGEL
Senior Attorney and Environmental Collaboration and Conflict Resolution Specialist, U.S. EPA Region 2

TUESDAY NOVEMBER 29

CONCURRENT SESSION 1 | 9:20AM - 10:25AM

SESSION A - PASSAIC ROOM

A LANDSCAPE ARCHITECTURE DESIGN FOR URBAN BROWNFIELDS CASE STUDY
WOLFRAM HOEFER, RUTGERS CENTER FOR URBAN AND ENVIRONMENTAL SUSTAINABILITY

Rapid urban growth increases impervious cover, leading to substantial flooding issues, and the transformation from a relatively low density suburban settlement pattern into higher density urban conditions that reduce available open space. Urban extension initiatives in support of conserving and utilizing urban open space for human uses and environmental benefits are often caught in political crossfire. One example is the case study developing a landscape architecture design for an urban brownfield in Bloomfield, NJ. This pro-bono project illustrates how a close interconnection between outreach and teaching can foster productive outcomes in politically difficult situations.

EXTENSION BASICS OF COMMUNITY PROGRAMMING IN THE REALM OF NON-POINT POLLUTION
PATRICIA RECTOR, RUTGERS COOPERATIVE EXTENSION

Urban/suburban areas have significant areas of impervious surfaces leading to stormwater runoff and impaired waterways. Addressing stormwater may use technical modeling and social media outreach, but the answers for several NJ programs included personal relationships and community based educational programs; the Extension essentials. Community workshops conducted from 2010-2015 yielded higher installation rates and increased disconnection of impervious surfaces. Rain gardens were clustered in a community during two phases; the factor most responsible for installation in the second phase was the influence of neighbors. This talk will discuss the unparalleled strengths of Cooperative Extension for stormwater management in urban/suburban areas.

SESSION B - MONMOUTH ROOM

NUTRITION EDUCATION IN THE DOMESTIC WORK INDUSTRY
TEBBIE CLIFT, CORNELL UNIVERSITY EXTENSION-NYC

Cornell's Nanny Training Certificate Program, a collaboration among Cornell University Cooperative Extension-NYC (CUCE-NYC), the Worker Institute at Cornell's School of Industrial and Labor Relations, and Domestic Workers United, empowers domestic workers with knowledge, skills, basic rights, and civic education. Since 2013 CUCE-NYC frontline staff provided 600 hours of nutrition education to 200 nannies. Pre and post surveys showed 60% of the nannies used nutrition skills learned all of the time and 29% used them frequently. Participants reported knowing more following the training sessions than at baseline, demonstrating verifiable learning in all areas covered by the survey.

LANDSCAPE ARCHITECTURE EXTENSION: URBAN STEWARDSHIP AND COLLABORATIVE DESIGN

RICHARD ALOMAR, RUTGERS CENTER FOR URBAN AND ENVIRONMENTAL SUSTAINABILITY

Building collaborative design partnerships with city agencies, community stakeholders and residents takes advantage of existing social and government networks to develop designs and programs that address resilience and stewardship. The process engages the community in new ways to propose and design more ecologically sound green spaces and connects funding sources through shared community interest.Conceptual Plans for the 2nd Street Park and the Rudyk Park Expansion in Perth Amboy, New Jersey were products of professional, governmental and public collaborations. Each project used outreach methods that stressed design transparency and took advantage of the strong ties between stakeholders.

SESSION C - SOMERSET ROOM

GROUP FARMING: A SUGGESTED URBAN AGRICULTURE MODEL TO COUNTER FOOD DESERT AREAS IN URBAN CITIES

GERMAN CUTZ, UNIVERSITY OF CONNECTICUT EXTENSION

UConn Extension in collaboration with local farmers and community-based organizations offer a year-round urban agriculture program. The program trains adults living in urban cities to become urban farmers. This program was first piloted in Spanish. The program consists of three components: classroom instruction, hands-on farming, and entrepreneurship. Group farming is promoted by classroom, field and entrepreneurship activities. Participants plan the types of vegetables to produce, when to plant, what crops, etc. In the field, they work as a group from beginning to end of vegetable production. Participants are enrolled in the Farmer's Market programs where they practice their entrepreneurial skills.

COMMUNITY GARDENS TO INCREASE ACCESS TO HEALTHY FOOD

JIM SIMON, ILES, INC.

Isles, Inc. is a 35 year old, Trenton-based nonprofit that fosters self-reliant families and healthy, sustainable communities. Since its inception, Isles has helped residents transform neglected parcels of urban land into gardens that address hunger relief, food production, urban beautification, and open space preservation throughout the city of Trenton. Isles currently provides support to over 70 school and community gardens and works with community partners to increase access to healthy food. Additionally, Isles offers other unique tools for citizens to be active participants in shaping their neighborhoods through community planning, vacant property stabilization, environmental stewardship, and mobile recreation.

CONCURRENT SESSION 2 | 10:40AM - 11:30AM

SESSION A - PASSAIC ROOM

GREEN INFRASTRUCTURE: IMPLEMENTATION AT THE COMMUNITY LEVEL

DEBBIE MANS, NY/NJ BAYKEEPER

This workshop will discuss innovative green infrastructure projects across the state and the establishment of Municipal Action Teams to champion and implement such projects. Green infrastructure uses vegetation, soils, and natural processes to manage water and create healthier environments by reducing flooding, stormwater pollution, and combined sewer discharges. NY/NJ Baykeeper will discuss their innovative partnership with Rutgers Cooperative Extension Water Resources Program to provide technical and outreach assistance to communities to promote and implement green infrastructure projects. The presenters will provide materials on stormwater management, green infrastructure, combined sewers and community engagement that can be used as models for other communities.

NEW JERSEY RAIN GARDEN REBATE PROGRAM: FOSTERING ADOPTION OF STORMWATER MANAGEMENT PRACTICES

SARA MELLOR, RUTGERS COOPERATIVE EXTENSION WATER RESOURCES PROGRAM

The Rutgers Cooperative Extension Water Resources Program partnered with the New Jersey Water Supply Authority Watershed Protection Program in 2013 to launch the Rain Garden Rebate Program. To date, the Rain Garden Rebate Program has educated over 130 attendees about rain gardens, created 99 unique rain garden designs for 84 properties, and as a result 32 rain gardens have been installed on 27 properties within the eligible rebate areas of Bridgewater, Hillsborough, Raritan Borough and Somerville. Due to the success of this program, other municipalities in New Jersey are seeking to replicate it in their communities.

SESSION B - MONMOUTH ROOM

USING GEOSPATIAL MAPPING TO PLAN AND TRACK PROGRAM DELIVERY: A PICTURE IS WORTH A THOUSAND WORDS

JENNIFER SARAH TIFFANY, CORNELL UNIVERSITY EXTENSION-NYC (CUCE-NYC)

Cornell University Extension-NYC (CUCE-NYC) uses geospatial science to map programs delivered throughout the city. This offers opportunities to visualize events and workshops offered by separate programs (e.g. Parenting Education, Hydroponics/Aquaponics) to assess each program's extent as well as to look at all programs offered by CUCE-NYC in a particular neighborhood or section of the city. Maps give immediate visual cues as to where our program reach is strong and also make it clear where there are gaps in outreach. Program data can be combined with social and economic data to assist in directing program delivery to areas where the need is strongest.

RBS PUBLIC PRIVATE COMMUNITY PARTNERSHIP PROGRAM: BUILDING CAPACITY THROUGH PARTNERSHIP

MAGDA COMEAU, RUTGERS UNIVERSITY BUSINESS SCHOOL

The Public Private Community Partnership Program was initiated by the Rutgers Business School for the purpose of RBS/Urban capacity development: local solutions, strategic partnerships, leading to sustainable systems and economic development that is transferable to a national model. Focusing on building capacities through partnership, PPCPP seeks to demonstrate the potential of enhancing opportunities of communities for sustainable strategic on-off campus partnerships for local income enhancement, sustainable livelihoods and participatory development across all sectors and topics. In that role, PPCPP has several exciting projects like: Big Data management, analysis and connection of our 400 Newark manufacturers and other relevant Newark City data; a Supply Chain Education Partnership High School Summer Program; and the Anchor Institution Procurement Management Plan.

SESSION C - SOMERSET ROOM

ADVENTURES IN AGRICULTURE WITH AT-RISK ADOLESCENTS

VALERIE BANDELL, WEST VIRGINIA STATE UNIVERSITY EXTENSION

This session will tell the story of the Produce Pedalers program, a unique urban agricultural project that allows at-risk adolescents under the supervision of the WV Division of Juvenile Services to engage and invest in the community where they have committed a crime. The community in turn, invests in the youth by purchasing low-cost weekly CSA boxes full of produce that is grown, harvested, and packed by the youth program participants and delivered by bicycle. Extension agents, community members, city officials, and local farmers have all collaborated on the success of this program which operates in Huntington and Charleston, WV.

GROWING OUR LOCAL FOOD SYSTEM THROUGH STRENGTHENING COMMUNITY PARTNERSHIPS

MATT DUKER & MARISSA BLODNIK, MONTCLAIR COMMUNITY FARMS

In urban areas, community partnerships are vital in ensuring sustainability. This presentation will highlight the Montclair Community Farms project, which broke ground 5+ years ago, and has been growing strong through mutually beneficial partners within Extension, local government, local universities and community organizations. This workshop will share best practices in building and sustaining productive partnerships as realized through this project. In addition, we will create a discussion about what a sustainable urban agriculture project looks like and how to best ensure social, health, and economic benefits in the community.

CONCURRENT SESSION 3 | 1:00-1:50PM

SESSION A - PASSAIC ROOM

PANEL: DEVELOPING A COMMUNITY COLLABORATIVE INITIATIVE

YUE (NINA) CHEN, THE NATURE CONSERVANCY

Urban and suburban stormwater runoff poses significant impact on our environment. The public sector often does not have the sufficient funding or manpower to cover the tremendous cost of treating it. The presentation explores strategies to best leverage the private sector's funding, expertise, and manpower for better stormwater management through a behavior change approach. Four components of creating behavior change need to be addressed: knowledge, attitude, inter-personal communication, and barrier removal. This could pave the way for creating the enabling conditions to attract private capital investments in stormwater management such as what happened in Washington DC.

JEREMIAH BERGSTROM, RUTGERS COOPERATIVE EXTENSION WATER RESOURCES PROGRAM

Many large cities throughout the United States have been required by the US Environmental Protection Agency to implement green infrastructure strategies to address combined sewer overflow regulatory issues. In New Jersey, we are focusing on community-based green infrastructure, which is often lead by a coalition of local partners with assistance from the Rutgers Cooperative Extension Water Resources Program and the New Jersey Department of Environmental Protection. One method is to establish municipal action teams to champion and implement green infrastructure projects. Other efforts include technical assistance to design green infrastructure projects with municipal utility authorities and wastewater treatment plants.

SARAH BRYANT, COOPER'S FERRY PARTNERSHIP

Spurred by a partnership between the City of Camden, Cooper's Ferry Partnership, NJDEP, the Camden County MUA, the NJ Tree Foundation, and Rutgers Water Resources Program, Camden City has transformed into a regional model for urban environmental leadership in the last five years. Today, more than forty partners actively participate in the Camden Collaborative Initiative (CCI), a solutions-oriented partnership that plans and implements innovative strategies to improve the environment and the quality of life of Camden's residents. The panel will share the story of the CCI and its precursor the Camden SMART Initiative, highlighting best practices and lessons learned.

FRANK McLAUGHLIN, NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

In the past several years, the Department has been focusing on building partnerships with local stakeholders to provide resources and technical assistance to address the environmental challenges in urban areas by leveraging available funding, rethinking how brownfields are redeveloped, and encouraging the use of green stormwater infrastructure to manage localized flooding, create green spaces and improve the quality of life for residents.

SESSION B - MONMOUTH ROOM

LEARNING TO LOVE LETTUCE: USING HYDROPONICS TO GUIDE URBAN YOUTH TOWARD ENVIRONMENTAL CAREER PATHS

WYLIE GOODMAN, CORNELL UNIVERSITY EXTENSION-NYC

Educators are understandably nervous discussing sensitive topics such as race, ethnicity, class, and gender with students. But in this talk, educators with Cornell University Cooperative Extension in New York explain a) why they actively embraced these subjects while working with high-school students in a summer hydroponics learning program and b) the important lessons they learned in the process. Inspired by the work of social activist and educator Paulo Freire, author of Pedagogy of the Oppressed, this presentation will help attendees learn strategies to spark their own impactful conversations with youth and create more engaged classrooms in the process.

BRINGING HORTICULTURE TO YOUTH LIVING IN PUBLIC HOUSING

JAMES NICHNADOWICZ, RUTGERS COOPERATIVE EXTENSION

What does it take to start a horticulture program in a public housing complex? What facilities are needed? What kind of partnership needs to be developed with the housing authority? What are realistic goals for the program? Is there a sequence of horticulture projects to do with the youth? What youth development goals can be incorporated? These and other questions will be answered as the horticulture program being implemented by the RCE of Union County 4-H Program and the Rahway Housing Authority Enrichment Center is examined.

SESSION C - SOMERSET ROOM

IDENTIFYING STAKEHOLDER PERSPECTIVES ON URBAN FOOD SYSTEM RESILIENCE

BRADLEY GAOLACH & ELIZABETH ALLEN, WASHINGTON STATE UNIVERSITY

Urban areas are sinks for food, energy, and water (FEW) resources. Imported food carries additional "virtual" water and energy resources. Increasing local food production could decrease virtual resource flows, but at what cost? We use the Seattle metropolitan area as a case study to develop a modeling tool capable of assessing complex interdependencies among FEW systems across city-local-regional scales. Development of the decision-support modeling framework is being informed by stakeholder interviews and a multi-disciplinary workshop, which were designed to identify opportunities and challenges for local food production and to strengthen collaboration between university researchers and the public.

COMMUNITY FOOD ASSESSMENTS AND PLANNING: COMMUNITY UNIVERSITY PARTNERSHIP

CARA CUITE, RUTGERS UNIVERSITY

We will present the results of a community food assessment and food planning project conducted in partnership with the New Brunswick Community Food Alliance (NBCFA) and Johnson & Johnson. The multi-method assessment included qualitative interviews with 59 community groups, 15 food pantries, and 70 residents, and a review of existing data and spatial analysis. The food planning is taking place over nine months, includes a community round table in October, 2016, and will be finalized at the NBCFA annual meeting in February, 2017. We will highlight approaches to sharing research findings with community groups to maximize community action.

CONCURRENT SESSION 4 | 2:05PM - 3:00PM

SESSION A - PASSAIC ROOM

INCREASING STORM RESILIENCY IN URBAN AREAS THROUGH ECOLOGICAL RESTORATION AND DESIGN

BROOKE MASLO, RUTGERS COOPERATIVE EXTENSION

Ecologists, engineers, and landscape architects at Rutgers Cooperative Extension (RCE) are collaborating on floodplain restoration and open space design in urban communities severely impacted by Hurricane Irene and Superstorm Sandy. Working closely with municipalities, counties and conservation organizations, RCE has developed low-maintenance management and restoration strategies for transforming flood-prone urban residential areas into community open space and natural habitats, resulting in improved flood storage potential and passive recreational opportunities. The goal is to strengthen community resiliency against storms, improve conservation value of these areas, and create low-maintenance strategies to ensure long-term persistence of public open space.

ADDRESSING MICROPLASTIC POLLUTION IN URBAN WATERSHEDS

BETH RAVIT, RUTGERS CENTER FOR URBAN AND ENVIRONMENTAL SUSTAINABILITY

Urban watersheds are exposed to high concentrations of microplastic pollution due to the inability of wastewater treatment processes to remove these pollutants from widely used products. Microbead densities in Raritan and Passaic River surface waters were calculated, adsorbed persistent organic pollutants and plasticizers analyzed, and toxicity effects determined by exposing model organisms to microbeads. Project partners Ironbound Community Corporation and NY/NJ Baykeeper participated in water sample collection, analysis, and creation of materials for community education and engagement. This project will aide in establishing a baseline of NJ microbead pollution and support local community engagement in plastic cleanup efforts.

SESSION B - MONMOUTH ROOM

GREENING MICHIGAN INSTITUTE: FINANCIAL AND HOMEOWNERSHIP WORK GROUP

BETH MARTINEZ, MICHIGAN STATE UNIVERSITY EXTENSION

Homeownership and financial education helps residents gain financial stability in the Brightmoor and other neighborhoods of Detroit devastated by years of blight, unemployment and made worse by the recent Recession. Strengthening the community through pride of homeownership encourages community participation and discourages further blight. One resident at a time, MSU Extension provides university-backed, research-based workshops showing residents that homeownership is attainable by educating them about programs offering down payment assistance and home improvements. Through partnerships with Focus Hope, Detroit Land Bank, Detroit Parent Network and area churches, we explore how this programming can be expanded to other depressed urban areas.

LEADING A COLLABORATIVE EFFORT IN ESCALATING FINANCIAL CAPABILITY FOR LIMITED INCOME BALTIMORE CITY RESIDENTS

MICHAEL ELONGE, UNIVERSITY OF MARYLAND EXTENSION - BALTIMORE CITY

Essential human service organizations in Baltimore City provide financial assistance with no financial education to help residents maximize their finances. This accentuate financial problem in rental default, housing evictions, homelessness, and poverty. University of Maryland Extension (UME) is teaching (train-the-trainer) frontline staff of organizations basic financial skills to help coach clientele (recipients of financial assistance) to budget their limited finances. Teaching includes a user-friendly budgeting tool in Microsoft Excel to facilitate coaching and to help clientele practice budgeting. There are significant outcomes in reducing housing evictions, homelessness, and contribution in poverty reduction.

SESSION C - SOMERSET ROOM

CONNECTING UNIVERSITY UNDERGRADUATE INTERNS INTO URBAN AGRICULTURE SETTINGS IN PHILADELPHIA

JOHN BYRNES, PENN STATE UNIVERSITY

Since 2014, the Penn State Center Philadelphia has hosted a total of 15 Penn State undergraduate students as part of our summer internship program. This program is a partnership between the Philadelphia Center and Philadelphia community development organizations and is aimed at strengthening our community relationships through the creation of matching relationships between Penn State summer interns and local urban farms. The program allows for both rich collaborative experiences for the students in relation to the Philadelphia Center as a whole as well as deep, transformative day to day experience at some of the city's most acclaimed urban agriculture settings.

ENGAGING UNDERGRADUATE STUDENTS IN COOPERATIVE EXTENSION PROGRAMS

CHRISTOPHER C. OBROPTA, RUTGERS COOPERATIVE EXTENSION WATER RESOURCES PROGRAM

The Rutgers Cooperative Extension (RCE) Water Resources Program has engaged undergraduate student interns to help develop and deliver outreach programs. Many of these students have learned new skills during their experience working for the RCE Water Resources Program and have gone on to obtain successful positions. This presentation will provide a detailed overview of the do's and don'ts of engaging students through the Cooperative Extension Service (CES) and will provide examples of how students were involved, the benefits gained, and the direct connection to future employment. Involving undergraduate students in the CES can be rewarding for both the student and program leader.

WEDNESDAY NOVEMBER 30

CONCURRENT SESSION 1 | 9:20AM - 10:25AM

SESSION A - PASSAIC ROOM

25 YEARS OF NEMO: THE EVOLUTION OF UCONN EXTENSION'S URBAN STORMWATER PROGRAM

CHESTER ARNOLD JR., UNIVERSITY OF CONNECTICUT

UConn Extension's Nonpoint Education for Municipal Officials (NEMO) Project began in 1991 and is still alive and well today. Over the intervening years, the program has expanded, contracted, spread to other states, and shifted topical focus based on factors such as external funding, national and state regulatory trends, and evolution of stakeholder needs. Currently, the program has several major emphases, including supporting low impact development (LID) practices on campus, developing smart phone applications ("apps") and other technical tools to promote LID, and providing outreach and technical support to the 121 towns in Connecticut faced with an expanded stormwater regulation.

GREEN INFRASTRUCTURE EDUCATION, IMPLEMENTATION, AND OUTREACH IN NEW JERSEY

ROSANA DA SILVA, RUTGERS COOPERATIVE EXTENSION WATER RESOURCES PROGRAM

The Rutgers Cooperative Extension (RCE) Water Resources Program has developed E-learning tools to educate municipal representatives about stormwater management and infrastructure. Three tools were developed providing training on stormwater plan review, inventorying and evaluating existing stormwater infrastructure, and identifying opportunities for new green infrastructure. Of the 155 surveys collected from 270 participants, 100% of the participants reported an increased understanding of the municipality's role in stormwater management plans. Additionally, 10 demonstration green infrastructure projects were installed in correlation with these training resources.

SESSION B - MONMOUTH ROOM

PARTNERSHIP BUILDING AS A FOUNDATION FOR LONG-TERM URBAN EXTENSION PROGRAMMING

JEREMIAH BERGSTROM, RUTGERS COOPERATIVE EXTENSION WATER RESOURCES PROGRAM

In Camden and Newark, New Jersey, recent efforts to address environmental issues through a collaborative process provide insight into new ways of working with diverse and often fractious stakeholders. These efforts are being evaluated to propose an alternative model for future Cooperative Extension Service work in urban communities. With more people living in urban centers, the Cooperative Extension Service needs to have successful programs that bring value to communities where a majority of people live. This presentation will discuss a proposed model for collaborating with stakeholders in urban communities that can be the foundation for new, nimble, and responsive programs.

HUB CITY FRESH: IMPROVING URBAN FOOD ENVIRONMENT THROUGH A COMMUNITY-BASED PROGRAM

NURGUL FITZGERALD, RUTGERS COOPERATIVE EXTENSION

Hub City Fresh Healthy Corner Store Initiative aims to improve availability of and access to healthier foods in New Brunswick's corner stores. The initiative is a collaboration between the New Brunswick Community Food Alliance, City of New Brunswick-Mayor's Office, and Rutgers. Using a community-based participatory research approach, nine corner stores were recruited into the project, which involved marketing and educational activities, and inventory and structural changes in the stores. An overview of funding, implementation, and evaluation challenges, and lessons learned will be included in the presentation.

SESSION C - SOMERSET ROOM

LESSONS LEARNED FROM A BILINGUAL, SAFE SOIL FOR URBAN GARDENING PROGRAM

MICHELE BAKACS, RUTGERS COOPERATIVE EXTENSION

In New Jersey Latinos now make up 19% of the population. In order for Extension to stay relevant it is important we develop culturally responsive programming to meet the needs of changing clientele. Rutgers developed a bilingual, train-the-trainer program in order to educate the Latino community about safe practices for protecting themselves from lead while gardening in contaminated soil. This program was developed in the City of New Brunswick, in partnership with community organizations and curriculum materials are available at www.tinyurl.com/safeurbangardening. The program has been effective for helping residents retain knowledge and actions were taken to reduce exposure to lead.

COMMUNITY OUTREACH THROUGH THE RUTGERS VETS PROGRAM

AMY ROWE, RUTGERS COOPERATIVE EXTENSION

The cleanup of the contaminated Lower Passaic River is expected to be the costliest in the history of the US Environmental Protection Agency's Superfund program. The Rutgers Veterans Environmental Technology and Solutions (RVETS) class is introducing community military veterans to the environmental science and public policy discussions effecting the Passaic River watershed and training them to become educational resources for other residents. Educating local citizens to identify the solutions to the myriad challenges facing the Lower Passaic watershed is a long-term sustainable policy and gives power back to residents that have been disproportionally impacted by the river's contaminated history.

ESSEX ROOM

PANEL: ADDRESSING THE CHALLENGES OF FUNDING URBAN PROGRAMS IN COOPERATIVE EXTENSION

CHESTER L. ARNOLD JR.
Director for Outreach, Center for Land Use Education and Research (CLEAR)
Water Quality Educator, Department of Extension
University of Connecticut

BRADLEY GAOLACH
Director, Washington State University's Metropolitan Center for Applied Research and Extension
Director, Western Center for Metropolitan Extension & Research
Associate Professor, Department of Community & Economic Development
Washington State University

CHRISTOPHER C. OBROPTA
Associate Extension Specialist in Water Resources
Associate Professor, Department of Environmental Sciences
Rutgers, The State University of New Jersey

JENNIFER SARAH TIFFANY
Director, Outreach and Community Engagement, Bronfenbrenner Center for Translational Research (BCTR)
Executive Director, Cornell University Cooperative Extension's New York City Programs,
Co-Director, Community Engagement in Research Component, Weill Cornell Medical College's Clinical and Translational Sciences Center
Cornell University

A common challenge for Extension professionals is sustaining a balanced funding portfolio to address the needs of the communities we serve. Capacity funding supports ongoing operations and activities that bridge program areas traditionally offered by Extension as well as providing seed money for innovative projects. Dedicated grants/contracts help support the work that focuses on key community needs. These grants and contracts support staff salaries and are subject to defined deliverables; this reduces the ability for Extension to respond to emerging needs. This panel discussion will offer different perspectives on ways to diversify funding to support program stability and innovation.

CONCURRENT SESSION 2 | 2:05PM - 3:00PM

SESSION A - PASSAIC ROOM

IMPERVIOUS COVER ASSESSMENTS: A NEW TOOL IN URBAN EXTENSION TO REDUCE FLOODING AND IMPROVE WATER QUALITY IN NEW JERSEY

CHRISTOPHER C. OBROPTA, RUTGERS COOPERATIVE EXTENSION WATER RESOURCES PROGRAM

Understanding a municipality's impervious cover is the foundation for green infrastructure implementation. To facilitate green infrastructure implementation, the Rutgers Cooperative Extension (RCE) Water Resources Program has prepared impervious cover assessments (ICAs) and reduction action plans (RAPs) for over 60 municipalities in New Jersey. These plans identify opportunities for green infrastructure implementation to reduce impacts from stormwater and to promote climate resiliency. This presentation will discuss how the RCE Water Resources Program is working with municipalities to move from the planning stage to the implementation phase of these plans for municipalities to take action and improve water quality.

EMBRACING TECHNOLOGICAL INNOVATIONS IN OUTREACH TO PROTECT THE ENVIRONMENT

DAVID DICKSON, UNIVERSITY OF CONNECTICUT

Innovative technologies provide tremendous opportunities to improve the effectiveness of extension programs. The Center for Land Use Education and Research (CLEAR) at the University of Connecticut, a collaboration between Extension, the Department of Natural Resources and the Environment and CT Sea Grant, strives to use technology to enhance its outreach efforts. The session will highlight many of the tools CLEAR has developed, including the Rain Garden App, LID Atlas, Story Maps, virtual green infrastructure tools, and more. We will also discuss how we have leveraged the resources of the University and shared our experience with other UConn Extension programs.

SESSION B - MONMOUTH ROOM

CONTEXTUALIZING GREEN INFRASTRUCTURE PRACTICES TO REALIZE THE CONNECTIONS BETWEEN COMMUNITY, ENVIRONMENT, HEALTH, WORK, AND FOOD

TOBIAH HORTON, RUTGERS COOPERATIVE EXTENSION

While Green Stormwater Infrastructure has been developed as a tool for sustainably managing runoff, its potential to an active and vital part of urban space is underrealized. Bridging between the social and natural, a new generation of Green Infrastructure builds out from a primary purpose of reducing stormwater impacts towards enhancing people's experience and understanding of the natural/built interface. Case studies of installed Green Infrastructure demonstration systems in Newark, Springfield, Hillsborough, Rahway and Summit, New Jersey will show how contextualized Green Infrastructure can enhance the environmental, educational and social life of places such as community gardens, schools, libraries and residences.

USING INNOVATIVE GIS TECHNOLOGY TO COMPILE ACCURATE BROWNFIELD INVENTORIES

ZENON TECH-CZARNY, RUTGERS CENTER FOR URBAN AND ENVIRONMENTAL SUSTAINABILITY

Remediating and redeveloping Brownfields is a critical issue for human and environmental health in urban communities. However, official databases are not necessarily well maintained or accurate; many communities do not actually have a useable Brownfield property inventory. In collaboration with Middlesex County Improvement Authority (MCIA) and the City of Perth Amboy, the Rutgers Center for Urban Environmental Sustainability (CUES) used innovative GIS mobile technology to survey existing databases and potential Brownfield properties in Perth Amboy, NJ. The team surveyed, 279 known sites and 10,088 parcels, and found 94 potential updates to known databases and 124 potentially contaminated sites.

SESSION C - SOMERSET ROOM

PANEL: MODELS FOR ENGAGING AND ENRICHING YOUTH IN COOPERATIVE EXTENSION

MICHAEL SCHWEBEL, NEW JERSEY SEA GRANT CONSORTIUM AND MONMOUTH UNIVERSITY

The panel presentation Saving the Shore: Using a Wave Tank to Illustrate the Effects of Climate Change on NJ's Coasts will mimic the type of outreach work done by the organization when doing youth-oriented outreach programs. Differing scenarios (coastal storm, barrier island erosion, back-bay flooding) both stimulate and have youth postulate about ways to address the differing situations brought on by sea-level rise / climate change along the Atlantic and Bayshore regions. The tactile and interactive nature of the tank aids in youth's interest and understanding of environmental topics – especially for youth that cannot visit the ocean / bay regularly.

JACKIE DAVIS-MANIGAULTE, CORNELL UNIVERSITY EXTENSION-NYC

College Achievement through Urban Science Exploration (CAUSE) is a unique program that immersed low-income NYC youth in environmental studies, research and field study, along with intensive preparatory service, research presentations, and interaction with Cornell faculty in NYC and at the University. CAUSE was developed to encourage students to explore science in emerging areas such as "green" technologies and ecological sustainability, while supporting them through the college application process and preparing them for the rigors of college. The CAUSE partnership between Henry Street Settlement and Cornell University Cooperative Extension (CUCE)–NYC serves as a model for maximizing resources to benefit youth.

KENNETH KARAMICHAEL, RUTGERS COOPERATIVE EXTENSION

The Strategies and Realities of Implementing a 'Shared Youth Vision,' will demonstrate innovative approaches to partnership and funding models in urban youth programming. For service providers in education and employment initiatives, a funding focus on collective impact necessitates new tools as well as new means of utilizing existing tools for collaboration among organizations and their stakeholders. Collective Impact will highlight successful work within the Rutgers University.

POSTER SESSION | 1:00PM - 1:25PM

ESSEX ROOM

GARDEN JOURNALS: CREATIVE LEARNING OPPORTUNITIES FOR AN UNDERSERVED POPULATION IN NEW BRUNSWICK

RICHARD ALOMAR, RUTGERS CENTER FOR URBAN AND ENVIRONMENTAL SUSTAINABILITY

Can creative learning opportunities foster positive physical, emotional, and social health outcomes for an underserved population in New Brunswick? A stipend-based pilot program engaged twelve Promise Clinic clients to work with Elijah's Promise, Rutgers Department of Landscape Architecture, Rutgers School of Environmental and Biological Sciences and Rutgers Robert Wood Johnson Medical School at the Shiloh Community Garden.

This presentation will focus on the participant's garden journals. These journals were used to document the gardener's work, attitudes and experiences during the 16 week program and revealed information helpful to the management and planning of future programs.

REDUCING STORMWATER RUNOFF AND PROTECTING WATER QUALITY IN THE RAHWAY AND RARITAN RIVER WATERSEDS

MICHELLE BAKACS, RUTGERS COOPERATIVE EXTENSION

Starting in 2009, Rutgers Master Gardeners (MGs) in the heavily urbanized Rahway and Raritan watersheds have had an annual seminar focused on greener stormwater management practices for protecting water quality. Follow-up surveys sent in 2015 to 273 participants indicated that 868,825 gallons of stormwater is redirected annually from the storm drain system as a result of downspout disconnection, using rain barrels, rain gardens, and porous surfaces (n=88). MGs formed a rain barrel committee and taught 240 residents how to adopt greener practices. Results show incorporating green infrastructure training into traditional horticulture curriculums can be effective for reducing urban stormwater runoff.

MUNICIPAL SEPARATE STORM SEWER SYSTEM PERMIT SUPPORT AND COMPLIANCE CASE STUDY: HAMILTON TOWNSHIP, NEW JERSEY

JEREMIAH BERGSTROM, RUTGERS COOPERATIVE EXTENSION WATER RESOURCES PROGRAM

Cities throughout the United States have depended upon detention basins to manage stormwater since the 1970s. These basins are designed to hold stormwater runoff during precipitation events and then slowly release stormwater either into the groundwater or into a storm sewer. Detention basins effectively manage the quantity for stormwater and reduce flooding, but they do not typically address water quality. The Rutgers Cooperative Extension Water Resources Program was commissioned by Hamilton Township to assess the health of existing detention basins in Hamilton Township to provide recommendations to improve water quality and to develop an inventory of their infrastructure for maintenance.

GROWING OUR LOCAL FOOD SYSTEM THROUGH STRENGTHENING COMMUNITY PARTNERSHIPS

MATT DUKER & MARISSA BLODNIK, MONTCLAIR COMMUNITY FARMS

In urban areas, community partnerships are vital in ensuring sustainability. This presentation will highlight the Montclair Community Farms project, which broke ground 5+ years ago, and has been growing strong through mutually beneficial partners within Extension, local government, local universities and community organizations. This workshop will share best practices in building and sustaining productive partnerships as realized through this project. In addition, we will create a discussion about what a sustainable urban agriculture project looks like and how to best ensure social, health, and economic benefits in the community.

TEEN CORPS LEADERSHIP PROGRAM

MANAMI BROWN, UNIVERSITY OF MARYLAND EXTENSION

The Teen Corps Leadership Program is a citywide collaborative between 4-H youth and adult leaders, agencies, and community stakeholders who partnered to strengthen communities and increase leadership opportunities for youth. Program outcomes have resulted in producing entrepreneurial and workforce readiness ventures, and environmental, GIS/GPS and community mapping and service-learning initiatives. Through this effort, over 17,000 participants have been reached since 1998. Teen Corps became an international collaborative through the development of a partnership with a school in Dakar, Senegal, West Africa. This poster session will address how to build collaborative partnerships, and exploring emerging issues, innovative ideas and best practices.

URBAN WATER CONSERVATION: ASSESSING THE POTENTIAL OF ALTERNATIVE WATER SOURCES

RAUL I. CABRERA, RUTGERS COOPERATIVE EXTENSION

Extended droughts, competition and restrictions on water use are severely pushing for the implementation of water conserving practices and utilization of alternative sources for urban activities and green spaces (landscapes, parks, etc.). We are exploring the potential use of municipal reclaimed water and residential graywater as sources for urban irrigation, often the largest water user in urban settings. Assuming these sources have none to minimal negative effects on plants, soils and environment, their extended use promises conservation of increasingly scarce potable water resources, and reductions of sewage effluent volumes requiring treatment and discharge into ground and surface water bodies.

GREEN INFRASTRUCTURE EDUCATION, IMPLEMENTATION, AND OUTREACH IN NEW JERSEY

CHRISTOPHER C. OBROPTA & ROSANA DA SILVA, RUTGERS COOPERATIVE EXTENSION WATER RESOURCES PROGRAM; JESSICA T.R. BROWN, UNIVERSITY OF GEORGIA MARINE EXTENSION

The Rutgers Cooperative Extension (RCE) Water Resources Program has developed E-learning tools to educate municipal representatives about stormwater management and infrastructure. Three tools were developed providing training on stormwater plan review, inventorying and evaluating existing stormwater infrastructure, and identifying opportunities for new green infrastructure. Of the 155 surveys collected from 270 participants, 100% of the participants reported an increased understanding of the municipality's role in stormwater management plans. Additionally, 10 demonstration green infrastructure projects were installed in correlation with these training resources.

USING RAINWATER HARVESTING SYSTEMS TO HELP CONSERVE THE REUSE WATER AT COMMUNITY GARDENS THROUGHOUT NEW JERSEY'S URBAN AREAS

CHRISTOPHER C. OBROPTA, JEREMIAH BERGSTROM, & ROSANA DA SILVA, RUTGERS COOPERATIVE EXTENSION WATER RESOURCES PROGRAM

The Rutgers Cooperative Extension (RCE) Water Resources Program established partnerships with community organizations, local municipalities, and regional and state stakeholders in Camden and Newark to establish community-based initiatives to address environmental health issues. With funding from the New Jersey Department of Environmental Protection, 14 rainwater harvesting systems were implemented in local community gardens and urban farms. As a primary source of water for urban agriculture in the cities, over 150,000 gallons of stormwater is reduced annually from discharging into local waterways. Hands-on trainings continue to help build capacity with local nonprofit groups, but there is still a need for technical assistance from the RCE Water Resources Program.

NEW BRUNSWICK COMMUNITY FARMERS MARKET

NURGUL FITZGERALD, RUTGERS COOPERATIVE EXTENSION

The New Brunswick Community Farmers Market (established in 2009) is a collaboration between Rutgers, Johnson & Johnson, and the City of New Brunswick, and it is supported by community stakeholders. The Market aims to improve access to healthy, affordable, and culturally appropriate foods for limited-resource individuals, and it involves multiple Extension and Rutgers faculty/staff from the Nutritional Sciences, SNAP-Ed, FoodCorps, Landscape Architecture, and Human Ecology Departments. Activities such as acceptance of federal food assistance program vouchers, provision of incentives (Market Bucks), and nutrition education are utilized to support the Market's mission. Annual surveys are used to measure and report impacts.

URBAN SOIL SAMPLING AND ANALYSIS

OMANJANA GOSWAMI, RUTGERS UNIVERSITY-NEWARK; EMILY FREILICH, POMONA COLLEGE; ASHAKI A. ROUFF, SOUTH WARD AGRICULTURAL GARDEN (SWAG)

Urban agriculture is increasing in popularity as a means of reclaiming abandoned land, growing fresh edible produce, fostering community relations, educating the youth and engaging the public in recreational activities. Newark, the largest city in New Jersey, has over 30 urban community gardens. However, the soils of these gardens have long histories of metal contamination, especially lead, arising from anthropogenic activities over the decades. This study looks into lead contamination in an urban garden in Newark, and developing sustainable remediation strategies to immobilize excess lead in soil.

PLANTING SEEDS OF STEM IN A RAIN GARDEN

PATRICIA HESTER-FEARON, LINCOLN MIDDLE SCHOOL

"Planting seeds of STEM in a rain garden" began with a ribbon cutting ceremony over one year ago to STEMulate urban youth. This outdoor learning garden has provided middle school students opportunities to work with landscape architects from Rutgers University. The partnership includes Passaic Valley Sewerage Commission, Rutgers University, and Lincoln Middle Kearny School District. Maintaining the rain garden in the outdoor learning garden continues to provide 'hands-on' learning activities to explore soil erosion, in addition to, communicating with soil scientist. The garden continues to blossom with unlimited experiences for students to dig into STEM careers and improve their community.

BUILDING STREAMS: THE AESTHETIC EXPLORATIONS OF THE IMPERVIOUS AS WATER SOURCE FOR NEW URBAN NATURE

TOBIAH HORTON, RUTGERS COOPERATIVE EXTENSION

The poster will show graphics, built photographs and descriptions from built Green Infrastructure projects that were designed from the conceptual framework of the impervious/built as source, spring or seep from which emerges a new landscape of streams, riparian plantings, habitat and human experience. This new landscape, a "landscape urbanism" is currently an insertion into a grey infrastructure system, but can be expanded as an urban planning structural system to guide the reconfiguration, adaptation and rethinking of built/biophysical edges in light of probable major environmental changes of the near future.

ADDRESSING FECAL COLIFORM BACTERIA AT A PUBLIC SWIMMING BEACH IN A SMALL URBAN COMMUNITY

SAL MANGIAFICO, RUTGERS COOPERATIVE EXTENSION

Bridgeton is small urban community in Cumberland County, NJ, possessing a public swimming beach that is regularly closed due high concentrations of fecal coliform bacteria. Actions to address this problem included collecting data to determine the sources of the contamination, addressing the resident Canada goose population, and the installation of subsurface bubblers in the lake. Partners in these actions included Rutgers Cooperative Extension, the County Department of Health, the Cohansey watershed association, the City of Bridgeton, and local environmental non-profit organizations. While cooperation among stakeholders is critical, mitigating fecal bacteria contamination on a watershed scale can be challenging.

NEW JERSEY RAIN GARDEN REBATE PROGRAM: FOSTERING THE ADOPTION OF STORMWATER MANAGEMENT PRACTICES

SARA MELLOR, RUTGERS COOPERATIVE EXTENSION WATER RESOURCES PROGRAM

The Rutgers Cooperative Extension Water Resources Program partnered with the New Jersey Water Supply Authority Watershed Protection Program in 2013 to launch the Rain Garden Rebate Program. To date, the Rain Garden Rebate Program has educated over 130 attendees about rain gardens, created 99 unique rain garden designs for 84 properties, and as a result 32 rain gardens have been installed on 27 properties within the eligible rebate areas of Bridgewater, Hillsborough, Raritan Borough and Somerville. Due to the success of this program, other municipalities in New Jersey are seeking to replicate it in their communities.

DELAWARE URBAN FARM AND FOOD COALITION (DEUFFC) HELPS DELAWAREANS EAT AND GROW HEALTHY EVERY DAY

CARRIE MURPHY, UNIVERSITY OF DELAWARE COOPERATIVE EXTENSION;
ANN MATTINGLY, THE DELAWARE CENTER FOR HORTICULTURE

The Delaware Urban Farm and Food Coalition's (DEUFFC) mission is to support community-oriented urban agricultural projects that expand healthy food access in Northern Delaware and bring together resources and technical assistance through a collaborative approach to urban farming. The DEUFFC formed in 2008 to support Wilmington, Delaware's first urban farm; it organized the region's first urban agriculture summit in 2011. With nearly 100 persons in attendance, farmers, health advocates, and community gardeners, this summit led to a second, a growing membership, and the adoption/ongoing implementation of the DEUFFC's mission.

BRINGING HORTICULTURE TO YOUTH LIVING IN PUBLIC HOUSING

JAMES NICHNADOWICZ, RUTGERS COOPERATIVE EXTENSION

What does it take to start a horticulture program in a public housing complex? What facilities are needed? What kind of partnership needs to be developed with the housing authority? What are realistic goals for the program? Is there a sequence of horticulture projects to do with the youth? What youth development goals can be incorporated? These and other questions will be answered as the horticulture program being implemented by the RCE of Union County 4-H Program and the Rahway Housing Authority Enrichment Center is examined.

GREEN INFRASTRUCTURE GUIDANCE MANUAL FOR NEW JERSEY

CHRISTOPHER C. OBROPTA, RUTGERS COOPERATIVE EXTENSION WATER RESOURCES PROGRAM

Some communities remain hesitant to adopt green infrastructure practices and require further guidance. To address this need, the RCE Water Resources Program developed a green infrastructure manual for New Jersey. The manual was created to translate our experience with green infrastructure design into guidance for communities and design professionals. This document will help communities become aware of opportunities for green infrastructure and encourage its adoption. The manual has been advertised through social media outlets and presented at numerous conferences in New Jersey, is available for download at www.water.rutgers.edu, and can now be purchased for a nominal fee.

NINETEEN YEARS OF TREE GROWTH IN STRUCTURAL SOILS

ALLYSON SALISBURY, RUTGERS UNIVERSITY DEPARTMENT OF ENVIRONMENTAL SCIENCE;
JASON GRABOSKY, RUTGERS UNIVERSITY DEPARTMENT OF ECOLOGY, EVOLUTION, AND NATURAL RESOURCES

Urban environments can severely constrain tree growth, limiting the benefits trees can provide, such as stormwater mitigation. Structural soils (SS) can increase the rooting volume available to street trees, improving growth. Through a partnership with NYC Parks and Recreation, 32 trees were planted in a sidewalk with SS underneath. Across the street, 38 trees were planted in open lawn for comparison. In Year 17, there was no difference between sidewalk and lawn tree growth. However in Year 19, lawn trees are significantly taller and have higher transpiration rates, suggests the sidewalk trees have outgrown the SS capacity to provide water.

STEPS TO HEALTHY MEETINGS - TAKE THE CHALLENGE!

NAIMA SULLIVAN, DORIS MARTINEZ & NEDRA JONES, CORNELL UNIVERSITY EXTENSION-NYC

Cornell University Cooperative Extension NYC's (CUCE-NYC) Healthy Meeting Challenge utilizes frontline staff to help partner agencies adopt healthy environmental changes. From January 1 to September 30, 2016 community educators introduced the Steps to Healthy Meetings Guidelines to 285 agencies hosting 6- to 8-week nutrition workshop series. Seventy percent of agencies pledged to serve water as the beverage of choice during nutrition workshops and other events. Community educators provided free water pitchers and weekly follow-up and observed increased water consumption among workshop participants. These efforts have been supported by the NYC Department of Health and Mental Hygiene's Healthy Beverage Campaign.

THE RUDYK PARK COMMUNITY ACCESSIBILITY AND EXPANSION PROJECT

RICHARD ALOMAR & ZENON TECH-CZARNY, RUTGERS CENTER FOR URBAN ENVIRONMENTAL SUSTAINABILITY

The Rudyk Park Community Accessibility and Expansion Project is a community driven conceptual design/plan for expanding and improving access to Rudyk Park in Perth Amboy, NJ. The project was a collaboration of several groups within Rutgers University (Department of Landscape Architecture, Center for Urban Environmental Sustainability and Environmental Analysis and Communications Group) as well as the Middlesex County Improvement Authority and the City of Perth Amboy. The project included several community meetings and a door to door to survey. The design features a new and improved expansion area, as well as a Health Trail that connects the surrounding neighborhood to the park.

CONFERENCE PROCEEDINGS

LANDSCAPE ARCHITECTURE EXTENSION: URBAN STEWARDSHIP AND COLLABORATIVE DESIGN

RICHARD ALOMAR, RUTGERS CENTER FOR URBAN ENVIRONMENTAL SUSTAINABILITY

Building collaborative design partnerships with city agencies, community stakeholders and residents takes advantage of existing social and government networks to develop designs and programs that address resilience and stewardship. The process engages the community in new ways to propose and design more ecologically sound green spaces and connects funding sources through shared community interest.

Conceptual Plans for the 2nd Street Park and the Rudyk Park Expansion in Perth Amboy, New Jersey were products of professional, governmental and public collaborations. Each project used outreach methods that stressed design transparency and took advantage of the strong ties between the City of Perth Amboy (CPA), the Middlesex County Improvement Authority (MCIA), the Bloustein School of Planning and Public Policy Voorhees Transportation Center (VTC), and the SEBS Center for Urban Environmental Sustainability (CUES) with community stakeholders and the general city population.

2nd Street Park: Community Engagement and Innovative Remediation

The site 6 acre parcel for the proposed Perth Amboy 2nd Street site is located at the end of Second Street by the Raritan River waterfront and is a designated brownfield. The MCIA grant from the US Environmental Protection Agency (EPA) was used to advise on environmental issues, perform additional site testing, and plan the process for cleaning up the site.

Public outreach included a series of public workshops and school and resident surveys to generate specific ideas on how the park should be used. Deep community engagement, extensive historic, environmental and social research provided the project directors with a series of plans, illustrations and planning goals to present to the public and the media and garner support to solicit government grants, state funding and create creative working opportunities with NJDEP and Rutgers Water Resources.

Rudyk Park: Big picture ideas and small scale implementations

The CPA intends to expand Rudyk Park into two vacant properties for recreational and associated transportation uses. The 8.13-acre park is cut off from the city and difficult to access. The park concept plan builds on the public outreach efforts and techniques of 2nd Street Park and envisions a park at two scales; park specific and city-wide. The plan addresses immediate improvements and connects the park physically and programmatically with other CPA pedestrian, vehicular and park proposals and NJDEP stormwater management projects and makes additional funding possible through other city/state sources.

Urban Stewardship and Collaborative Design

Collaborative design is fraught with challenges. Projects are often mired in remediation reports and survey results undermining ways to move forward with community wants and environmental concerns.

These two projects stress the importance of using design and the landscape as generators of vision and consensus. Building and building upon partnerships, social networks and shared plans with a clear focus on a specific outcome (a plan, a program or a design) helps the vision move forward.

25 YEARS OF NEMO: THE EVOLUTION OF UCONN EXTENSION'S URBAN STORMWATER PROGRAM

CHESTER ARNOLD, JR., MICHEAL DIETZ, & DAVID DICKSON, UNIVERSITY OF CONNECTICUT EXTENSION

UConn Extension's Nonpoint Education for Municipal Officials (NEMO) Program began in 1991 and is still alive and well today. The program, a partnership of Extension and Connecticut Sea Grant, was originally developed in response to concerns about the health of Long Island Sound and the role of polluted stormwater ("nonpoint source pollution") in the Sound's degradation. Over the years, NEMO has expanded, contracted, and shifted topical focus based on factors such as external funding, national and state regulatory trends, and the evolution of stakeholder needs and interests.

At the time of its inception, NEMO constituted a departure from the norm in both the world of stormwater management and the world of Extension programming. NEMO's focus on land use as the root cause of polluted runoff verged on heresy in the world of water resource protection, which addressed the problem solely through pollutant removal devices. This land use emphasis led to a tight focus on local land use decision makers as a target audience, a rare audience for Extension programming despite the fact that these community volunteers have immense influence on the environmental, economic, and social health of the nation's communities. Finally, NEMO pioneered the use of geospatial technologies such as remote sensing and geographic information systems (GIS) for education, rather than exclusively for analytical purposes.

NEMO has worked with over ¾ of Connecticut's 169 municipalities, catalyzing a long list of changes to land use plans, policies, and practices. In the early years of the program workshops were held primarily in response to requests from communities, but NEMO has also worked in depth with a small number of communities – a method that the team feels was the most effective in fostering change. As the program matured, interest from colleagues in other states led to "scoping" workshops to facilitate adaptation of the Connecticut model. This resulted in the formation of the National NEMO Network, which eventually grew to encompass member programs in 30 states. Most, but not all, NEMO Network programs were led by Extension or Sea Grant staff and included their own unique assemblage of partners. UConn Extension became the coordinating "hub" of the National Network, a distinct program from Connecticut NEMO with strong ties to USDA, NOAA and EPA.

Both Connecticut NEMO and National NEMO were/are dependent on soft money, with the Connecticut program relying mostly on state funding sources and the Network primarily on federal sources. The National NEMO Network effectively "sunsetted" in 2013 after the loss of USDA funding for the coordination effort, although many state NEMO programs still exist. Currently, the Connecticut program has several major emphases, including supporting low impact development (LID) practices on the UConn campus, developing smart phone applications ("apps") and other technical tools to promote LID, and providing outreach and technical support to the 121 towns in Connecticut faced with a newly expanded "MS4" Clean Water Act stormwater regulation. State support for this last effort has allowed the program to expand, hiring a new educator to work directly with town officials and staff, and funding a work plan that includes development of such support services as online mapping, webinars and tailored smart phone applications. Thus, at present NEMO has come full circle to its original core emphases on land use planning, town hall audiences and geospatial technology.

ADVENTURES IN AGRICULTURE WITH AT-RISK ADOLESCENTS

VALERIE BANDELL, WEST VIRGINIA STATE UNIVERSITY (WVSU) EXTENSION

Through Try This!, a West Virginia program that gives residents an opportunity to write and receive small grants to test new ideas, a brainstorming session produced what would come to be known as Produce Pedalers. Produce Pedalers was created as a way to reach and engage youth within the juvenile justice system while also addressing the need to improve community food access and provide hands-on experiential education and job training.

The project, in partnership with Huntington Urban Renewal Authority, Try This! WV, WV Division of Juvenile Services, the West Virginia Food and Farm Coalition, and West Virginia State University Extension, reclaims vacant urban lots and puts them back into productive use through youth-run urban micro-farms. Through garden based curriculum, hands-on food production, and small business development in the form of a mobile bike-powered community supported agriculture project Produce Pedalers engages youth at the Cabell and Kanawha County Youth Report Centers. Participants learn how to grow, harvest, and market produce while the community learns the benefits of healthy eating, community investment, and sustainable practices. Youth participants become the drivers of change in their communities, they work to advance the sustainability of their local food system and increase the food security of themselves and their neighbors. This project currently provides 18 families with low-cost, organic, local, fresh foods delivered weekly.

Produce Pedalers currently operates in two high-need neighborhoods: Fairfield in Huntington, WV and The West Side in Charleston, WV. The two neighborhoods share many of the same problems including high crime, high vacancy, low incomes, high food insecurity, and low access to fresh food. As much as this program is a food access project, it is also a community development project focused on revitalization and working towards positive change within the neighborhoods where it operates. Over the first year, program staff has engaged over 100 adolescents in meaningful programming and cultivated positive relationships; it has also cooperated with a dozen other community members ranging from city officials to local farmers who have volunteered time to engage with participants on Produce Pedalers.

At both sites, the staff continues evidenced based programming based on the Junior Master Gardener's Learn, Grow, Eat & Go! curriculum. Within this framework, a formal evaluation on change in behavior is occurring. Programming occurs every other week at each site; at each meeting, the group has two hands on plant biology lessons, a taste test, and an opportunity to cook a healthy recipe. The hope is that this will encourage healthy habits among participants such as preparing their own meals as well as increase understanding of the origins of what they eat.

We have seen a great deal of success within the pilot year: two youth participants attended the West Virginia Urban Agriculture Conference , one will present at the Northeast Sustainable Agriculture Working Group Conference, two participants are part-time employment through the program, 18 families receiving weekly fresh produce, and all participants have tried (and enjoyed!) new foods. However, the first year has also provided many challenges that require reflection and changes to future programming. For instance, establishing a consistent knowledge base has been difficult as participants are not consistently present. This has led to some participants being more engaged than others. How, then, can we encourage participation as youth cycle out of the report or make up knowledge gaps when they do return? One aspect of programming that can change and will address this problem is the presence and engagement of the youth report staff; it has been observed that staff attitude and participation directly correlates with the attitude and participation of the youth participants. By having the staff more fully integrated in the Produce Pedalers program, we hope to see an increase in positive attitude and more consistent participation among youth participants. We look forward to expanding our market to serve more residents in the upcoming growing season and continue to create community around local food.

PARTNERSHIP BUILDING AS A FOUNDATION FOR LONG-TERM URBAN EXTENSION PROGRAMMING

JEREMIAH BERGSTROM, RUTGERS COOPERATIVE EXTENSION WATER RESOURCES PROGRAM

Urban communities are diverse and ever-changing. The structure of urban communities often requires an individualized approach to successfully assess community needs and establish relevant and effective programs. Working in this fluid and often fractious environment presents unique challenges for a Cooperative Extension program. With more people living in urban centers, the Cooperative Extension Service needs to have successful programs that are of value to the communities where a majority of people live.

Efforts in two New Jersey communities are being evaluated as models for a new way of engaging urban communities. In Camden, New Jersey, The Camden SMART (Stormwater Management and Resource Training) initiative has been actively focused on water and sewer infrastructure for over five years. This collaborative effort has provided guidance, leadership, and resources to begin addressing human health impacts resulting from combined sewer overflows and flooding. The partners are using a "collective impact" approach to address these issues by jointly coming together around a common agenda. This common agenda has resulted in regular partner meetings where open communication fosters ideas leading directly to funding and action. The leaders have been able to continue working on individual organizational efforts while bringing collective resources together to develop and implement projects, programs, and community outreach addressing water and sewer infrastructure needs. The Camden SMART initiative has also been aggregated into a larger community collaborative effort focused on environmental issues in the city. The Camden Collaborative Initiative is working to address air quality, waste and recycling, brownfields, environmental justice, environmental education, and water. Both of these collaborative efforts in Camden bring together governmental, non-profit, private, and community-based entities to organize and develop strategies to promote a healthy and sustainable city. The success of these initiatives over the past six years has been captured in the completion of multiple grey and green infrastructure projects, brownfield cleanups, and open space enhancements with partner organizations securing multi-million dollar grants and low-interest loans.

In Newark, New Jersey, the Rutgers Cooperative Extension Water Resources Program has led and directed efforts to facilitate Newark DIG (Doing Infrastructure Green). In three years, this collaboration has grown to include over 15 organizations and agencies all working together to promote sustainable green infrastructure strategies as a first step in addressing the city's aging water and sewer infrastructure, frequent flooding, combined sewer overflows, and water quality in the Passaic River. This unique and active collaboration continues to gain momentum and receive recognition as it works to inform and educate local elected officials, community residents, and private development leaders. Through the grassroots communication and agenda setting of this initiative, organizations across the city have committed to actively educating residents and participating in other related priority topic programs. Success is best captured in the dialogue that is now occurring across neighborhoods and previously isolated community-based organizations. Initial efforts have resulted in securing capacity funding for local organizations to continue participating and growing the initiative and improved communications with city offices and departments.

The collaborative approach in these two communities has evolved in different directions. Camden SMART is a collaboration between government, Extension, and experienced non-profit organizations. The agenda is driven by charismatic leadership and the expertise of experienced and knowledgeable professionals. Newark DIG has evolved as a grassroots dialogue with an open door policy to any organization that has an interest in promoting the collaborative agenda. Through this approach, the collaborative momentum has gotten the attention of city government and elected policy leaders. Participation and roles for Cooperative Extension evolve and change when engaging in community dialogue through collaborative efforts. In both of these examples, community leaders were able to identify needs, issues, and concerns to then request assistance and resources from the Cooperative Extension Service to support community efforts to solve problems.

The Cooperative Extension Service has an opportunity to lead and facilitate collaborations with community-based organizations that can be the foundation for programs in urban areas. The challenge lies in recognizing the unique capacity of each community's residents, organizations, leadership, and governing bodies. An effective collaboration requires leadership, direction, and open communication within a flexible framework. By becoming a partner embedded in the community in open dialogue with community-based organizations, the Cooperative Extension Service is in a strong position to identify and commit resources to address issues of crime, infrastructure, environment, redevelopment, housing, wages and jobs as well as education, agriculture, food, and health. Through a new model of collaborative engagement, the Cooperative Extension Service can effectively bring the diverse resources and expertise of the land grant university to bear on critical urban issues.

CONNECTING UNIVERSITY UNDERGRADUATE INTERNS INTO URBAN AGRICULTURE SETTINGS IN PHILADELPHIA

JOHN BYRNES, PENN STATE UNIVERSITY

The Penn State Center Philadelphia (PSCP) fosters creative, ground-breaking collaboration with Philadelphia-based communities to tackle the city's most pressing issues by catalyzing exchange among community members, faculty, students, staff, and alumni with unique talents and expertise. Launched in 2014, on the backbone of Philadelphia Extension, PSCP provides a platform for faculty and student exploration into the complexities of urban experience and encourages interdisciplinary approaches via field-based projects and scholarship involving departments, colleges, and campuses across Penn State. Building on over 50 years of Penn State Extension Philadelphia's efforts in community gardening, urban agriculture, and nutrition eduction, staff at PSCP work closely with community leaders to assist in overcoming the challenges in developing local food networks and healthy communities.

During its first three years, PSCP has hosted a total of 15 Penn State undergraduate students as part of our full time summer internships program. This program is a partnership between PSCP and Philadelphia community development organizations and is aimed at strengthening Penn State's community relationships through the creation of effective matching relationships between Penn State summer interns and area urban agriculture operations. The program allows for both rich collaborative experiences for the students in relation to PSCP as a whole as well as deep, transformative day to day experience at some of the city's most acclaimed urban agriculture settings.

The community partners involved with these internships often have long term connections to Penn State Extension Philadelphia's work in nutrition education, horticulture, and community development. They include, The Enterprise Center, The Norris Square Neighborhood Project, The Philadelphia Orchard Project, Awbury Arboretum, Teens 4 Good, Urban Tree Connection and others. During the summer, each of these organizations hosted one Penn State intern each, providing supervision and project direction, three days per week.

During their time with these partners, students became engaged in a variety of tasks including: running small urban farms and farm stand operations, organizing teen mentoring and educational programs, completing needs assessment surveys, strategically assessing community support agriculture efforts, investigating the city's restaurant sector in regards to product sourcing and, creating a demonstration garden legacy project for the Democratic National Convention. During their remaining time at the PSCP, students engaged in discussions about the promise of urban agriculture and the inequities of city living, wrote blog website articles about their experiences and, completed office duties as assigned.

During exit interviews and wrap up surveys, students evaluated the ability of their internship to provide opportunities to demonstrate initiative, develop their communication skills, and expand their professional networks as "exceptional". Students were all also extremely satisfied with their internship matches and were particularly enamored with the balance of office and fieldwork the internship offered them. According to each intern, the special care of internship coordinators took to match student interests and skills with the needs and capacity of community partners was one element of the internship that set it apart. One student, who grew up on an Adam's County apple orchard was thrilled to be assigned to an are non profit call the Philadelphia Orchard Project where she assisted in the design of a new orchard to be planted on Fairmount Park land. In turn, all of the community partners expressed satisfaction with the internship program and praised the students preparation, passion, and flexibility. The partners all stated that they expect to apply for a student intern next summer.

The program's limitations include its length (10 weeks), which does not allow for sustained impact; we are yet unable to measure long term impact of the students work. The main critique of the program from the students was that they were not given sufficient opportunity to learn about the history and overall progress of urban agriculture in Philadelphia. The students also strongly suggested that the program include more structured time for learning and conversation about urban agriculture history and policy during office days. For this reason, staff at PSCP are actively seeking faculty to assist them in creating an urban agriculture short course for the students.

Overall, this internships model is well on its way towards further success. From 2015 to 2016, student internship applications increased over 100% to 58 (5 of which are Schreyer's Honors College students). Partner survey applications increased 50% to 18 during that same time. Funding for the internships has also diversified, in addition to support from the College of Ag Sciences, we received funding for interns from a local donor, the College of Liberal Arts, and the College of Arts and Architecture.

NEW BRUNSWICK COMMUNITY FOOD ASSESSMENT AND PLANNING: COMMUNITY UNIVERSITY PARTNERSHIP

CARA CUITE & KATHE NEWMAN, RUTGERS UNIVERSITY

The authors will present the results of a multi-year community food assessment and planning project that they conducted in partnership with the New Brunswick Community Food Alliance and Johnson & Johnson (J&J). The partnership was created to bring diverse perspectives and skills to the project. The Food Alliance has been working on community food issues in New Brunswick since 2011, and many of the membership organizations have been working on it for longer. J&J financially supported the research and provided guidance and planning support. Rutgers brought research expertise, student assistance, and additional financial support to the project.

The Alliance conducts much of its work through five workgroups: Advocacy and Policy, Community Engagement, Food Economic Development, and Healthy Food Access. The Alliance also works with the New Brunswick Community Gardening Coalition, a coalition of community gardening organizations, and the Feeding New Brunswick Network, a coalition of food pantries, soup kitchens, food banks, and nutrition educators. J&J's Office of Corporate Citizenship & Community Relations served as another key community partner, financially supporting the research as well as providing guidance and leadership throughout. The Rutgers University partners worked on both research and planning, and included two faculty members, from the Bloustein School of Public Policy and Planning and the School of Biological and Environmental Sciences, two staff members from Bloustein, 21 graduate students, and 23 undergraduates, including students from the Rutgers Collaborative Center for Center for Community-Based Research and Service.

The project began with a community food assessment (2015-16). An intensive period of planning with the Food Alliance work groups and other partners (summer-fall 2016) followed, during which workgroups identified strategic priorities which they presented and discussed with community leaders at a Food Planning Round Table in October. The last phase includes workgroup meetings during the fall and winter to finalize a food plan, which the Food Alliance will share with the community at their annual meeting in February, 2017.

The team started the process by conducting a community food assessment to gather existing research, document food assets and understand who in New Brunswick is not food secure and why. The assessment used a multi-method approach that included interviews with 59 community groups, 15 food pantries, and 70 residents; parcel survey; documentary analysis and literature review; and analysis and/or mapping that used existing data. Community partners conducted 50 of the resident interviews. The research highlighted actionable projects, most of which are potential expansions of existing work. These included ideas such as facilitating an ongoing exchange between the local houses of worship and the local farmers market and creating a nutrition educators coalition to share resources and increase efficiency.

The partners divided the process of creating a food plan into two phases. In phase one, the partners and workgroups met more than 20 times to identify strategic priorities in the lead up to the Round Table, which was an all day meeting of Food Alliance members and community leaders. The Round Table celebrated accomplishments, drew in new partners, and launched the process of drafting an implementation plan to turn the work group's priorities into reality. Alliance workgroups will continue to further develop their priorities and implementation plans and will present the plan to the community at their annual meeting in February, 2017.

The project had many successes and challenges. While the original charge was to "raise the bar on food security in New Brunswick," it took a full year of meetings to determine how to do that collaboratively. Once the work began, it was invaluable to have community partners to help collect and interpret the data. Our community data collectors recruited resident participants that the Rutgers team alone could not have found, and the community partners contextualized our findings. Other challenges included the funder timeline, which resulted in a shorter assessment but did keep the project moving briskly. Communication was challenging, and it was at times hard to build consensus around the approach and be sure that all partners were apprised of progress. A post-Round Table survey showed that the project is viewed positively, and there was a consensus that participants felt energized to continue to work to reduce food insecurity in New Brunswick.

GROUP FARMING: A SUGGESTED URBAN AGRICULTURE MODEL TO COUNTER FOOD DESERT AREAS IN URBAN CITIES

GERMAN CUTZ, UNIVERSITY OF CONNECTICUT EXTENSION

The urban agriculture program in Connecticut was developed in 2013 because two events occurred almost simultaneously: 1) a conversation with a group of Hispanics about the need of producing food locally while at the same time generating an extra income and 2) an invitation to UConn Extension by a local farmer to use ½ an acre to teach urban agriculture. However, after a nationwide search of an urban agriculture curriculum and a review of UConn Extension materials available in Spanish, teaching materials were to be translated into Spanish.

The urban agriculture was designed as a year-round program. The program consists of three components: Classroom instruction, vegetable production, and entrepreneurship. Classroom instruction includes five modules: botany, entomology, vegetable production, IPM, and entrepreneurship. Vegetable production is a hands-on experience, which focuses on organic methods and low-risk IPM tactics. To practice their entrepreneurship skills, program participants are enrolled in local farmer markets.

There are two main stakeholder groups of the program: urban residents living in food desert areas and community organizations working on urban agriculture. Program participants complete 80-90 hours of classroom instruction, volunteer 140-150 hours of vegetable production and volunteer 30-40 hours selling vegetables. Community organizations recruit program participants, contribute with farmland, and in some cases become program participants as well.

The UConn Extension urban agriculture program was piloted with urban Hispanic residents from Fairfield County. To offer the program, UConn Extension applied and obtained funding from the Northeastern IPM Center, recruited two bilingual faculty and translated selected chapters of the Master's Gardeners curriculum into Spanish. To secure farmland, UConn Extension has signed 3-5 years Memorandum of Understanding (MOU) with local farmers and community organization who own farmland. MOUs have ensured the sustainability of the program. To generate an extra income, program participants were enrolled in local farmer markets. However, they were not certified food vendors or had a farming business registered. To overcome these challenges, UConn Extension partnered with local farmer markets and Connecticut Department of Agriculture. Participants were enrolled as a group of UConn Extension urban agriculture participants and were certified as food vendors.

The Group Farming Model addresses two of the conference's talking points: how to design stronger urban programs and shares challenges to overcome when implementing urban agriculture programs. Contrary to many urban agriculture programs, this model proposed a year-round program that integrated classroom instruction, food production, and entrepreneurship. Although the program has proven to be appealing to Hispanics, some of the major challenges to move urban farmers from classroom instruction to small scale urban farming include: access to farmland, Hispanics' cultural concepts of farming, moving program participants from group farming to individual entrepreneurs, language barriers when teaching urban agriculture even in Spanish, and lack of Extension materials in languages other than English.

In its third year, UConn Extension urban agriculture program has trained 26 Hispanics. From July to October each year, it supplies food desert communities with about 7,000 pound of vegetables and serves more than 300 at-risk people, including low-income families, seniors, veterans, and WIC recipients.

GREEN INFRASTRUCTURE EDUCATION, IMPLEMENTATION, AND OUTREACH IN NEW JERSEY

ROSANA DA SILVA, RUTGERS COOPERATIVE EXTENSION WATER RESOURCES PROGRAM

Recent storms have illustrated the need to handle intense weather events by decreasing the risk of flooding and subsequent flood damage. To enhance municipal flood resiliency, a state-wide educational training program is necessary. To address this need, the Rutgers Cooperative Extension (RCE) Water Resources Program, in partnership with the New Jersey Department of Environmental Protection (NJDEP) and the Association of New Jersey Environmental Commissions (ANJEC), began to develop tools aimed at educating municipal representatives on stormwater management and infrastructure through mitigation plans and projects that are sustainable and environmentally-friendly. Several tools were developed to train municipal representatives on stormwater plan review, inventorying and evaluating existing stormwater infrastructure, and identifying opportunities for new green infrastructure.

In 2014-2016, the RCE Water Resources Program delivered eight training courses as part of a stormwater management and green infrastructure education effort to 270 municipal representatives, community stakeholders, and paraprofessionals. Participants were educated on the New Jersey stormwater management rules and were provided with recommended questions that should be asked during municipal stormwater review. This effort specifically targeted municipal officials reviewing plans submitted to municipal boards or commissions. Of the 155 surveys collected, 100% of the participants demonstrated an understanding that the municipality is responsible for approving a stormwater management plan regardless if a developer receives a permit from NJDEP. An E-learning tool, "Asking the Right Questions in Stormwater Review," was developed to extend the success of the workshops and was provided to New Jersey's 565 municipalities as a free resource. The trainings also introduced practical tools such as impervious cover assessments and green infrastructure practices. Participants were introduced to green infrastructure as an approach to stormwater management that is cost-effective, sustainable, and environmentally friendly. A second E-learning tool, "Green Infrastructure Overview," was developed to provide participants with an overview of green infrastructure design as a guide for municipalities and design professionals. In addition, the RCE Water Resources Program has begun to pilot a program for municipal representatives on the upcoming municipal separate storm sewer system (MS4) permits in New Jersey which requires an assessment of stormwater infrastructure. Two additional trainings are scheduled for 2017 with funding provided by NJDEP and the New Jersey Sea Grant Consortium. A new E-learning tool is also being prepared for municipal representatives to identify and assess stormwater infrastructure while highlighting the benefits of a GIS-based database record.

Once training programs are in place, the next step is to provide demonstrations for municipal officials to look towards for examples. Demonstration green infrastructure projects have been installed in correlation with training programs to link opportunities where existing or new infrastructure can be installed to disconnect impervious surfaces from draining directly into local waterways. As part of this program, 10 green infrastructure projects were installed on municipal and school grounds, providing exposure of stormwater management strategies to the larger community.

One of the challenges of this program has been the utilization of E-learning tools and participation in the demonstration projects. Only a few participants continued to be engaged in the demonstration projects, while the E-learning tools did not receive the anticipated reaction that the trainings received. One of the issues identified was that the demonstration projects were aimed at combined sewer system communities; these communities were not in attendance during the trainings. To address this, the RCE Water Resources Program tailored this program to specific municipalities receiving training paired with demonstration green infrastructure projects relevant to the municipality.

LEADING A COLLABORATION INITIATIVE: FINANCIAL CAPABILITY FOR LIMITED INCOME RESIDENTS IN BALTIMORE CITY

MICHEAL ELONG, UNIVERSITY OF MARYLAND EXTENSION

This project demonstrates a collaborative initiative between University of Maryland Extension (UME), the Baltimore City Department of Social Services (BCDSS), and the Housing Authority of Baltimore City (HABC) to improve financial management skills of limited income residents on public assistance. Current statistics for Maryland State indicates 13.1% of the population are part-time employees and 18.6% unemployed. In Baltimore City 26.5% of the population are part-time employees and 37.7% unemployed. About 4.52% of Baltimore's population are receiving Temporary Cash Assistance, and 34.82% are in Food Supplement Program (SNAP). From 2008 to 2013 the participation rate in SNAP increased by 58.87%, a cash equivalent of $127.39 per person per 3-month. The administration of these public assistance programs are predominantly by BCDSS and HABC. Data from a needs survey found that agency staff who are responsible for disbursement of benefits to recipients are deficient in basic financial education. After conducting a needs assessment of eight frontline supervisors and ninety frontline staff, we found that about 95% indicate that financial skills are essential for recipients of services, 90% indicate they are not comfortable in coaching their recipients about their finances, and 85% would attend training if available. UME believes that budgeting and financial management training for agency staff can help staff acquire basic financial management skills to help limited income residents maximize their limited finances, and reduce their dependence on public assistance.

Since 2008, UME is conducting annual training on budgeting and financial management to enhance financial skills for BCDSS and HABC agency staff. The training is a train-the-trainer model for agency staff to acquire budgeting and financial management knowledge to help train their limited income residents to maximize their limited finances, and reduce their dependences on public assistance.

The training program includes reviewing sources of income, the limited income and choices, work-income-spending-saving relationship, assessing needs and wants, and practicing budgeting to maximize public assistance. Budgeting has taken a new dimension in technology thanks to Microsoft Excel platform. A basic Microsoft Excel budgeting program was created to help agency staff work collaboratively with limited income residents to help them budget their limited finances

Training evaluation is based on pre and post assessment survey to capture behavioral change as a result of training participation. In addition, participants assess the program and teaching effectiveness of the UME Educator by completing a UME Teaching Effectiveness Form. A follow-up survey or report from the BCDSS and HABC is also an essential process to capture short term impact of the project.

Outcomes from 2008 to 2015 aggregate behavioral change based on the pre and post training survey, and teaching effectiveness indicates that 85% of participants acquired new knowledge that is beneficial to themselves and their limited income residents, 92% plan to use budgeting and financial management skills learned to help their limited income residents, and 90% would recommend the seminar to their colleagues and others, working with individuals and families facing financial difficulties.

A follow-up survey (2008 – 2015) indicates 300 of 330 agency staff are using financial skills learned to help their clients practice budgeting. BCDSS indicates that 5,860 clients who received budgeting training from their staff are practicing budgeting.

The program continues to engage more collaborative agencies such as Salvation-Army-Homeless-Shelter, Baltimore-City-Detention-Center, and Aslyee-for-Women Inc. Salvation-Army-Homeless-Shelter likes the project and allocates an annual teaching cost recovery of $1, 000 to UME. In addition, HABC has a grant approved for one of its residential housing units that will provide $1,000 to UME for teaching cost recovery.

Challenges may emerge especially in trying to assess the long term impact of the project. Even if the number of residents on public assistance is declining and limited income residents are becoming better-off, UME cannot assume credit. The project is a collaborative initiative and as such, any success is a collaborative success. However, the Extension Educator interested in long term impact can obtain micro level impact by working with each collaborative agency to examine outcome variance in a long term.

Opportunities may occur where some agencies prefer the UME Educator to teach their clientele directly. These agencies include UME in their grant applications to procure mini grant or cost recovery dollars for UME.

HUB CITY FRESH: IMPROVING URBAN FOOD ENVIRONMENT THROUGH A COMMUNITY-BASED PROGRAM

NURGUL FITZGERALD, RUTGERS COOPERATIVE EXTENSION

Urban communities with limited resources often lack access to large grocery stores, and corner stores that are widespread in these communities usually do not carry or promote a wide selection of healthier foods and beverages. These limitations in the local food environment present challenges to food security and related health outcomes for the residents.

Hub City Fresh Healthy Corner Store Initiative (Hub City Fresh) was established as a collaboration between the New Brunswick Community Food Alliance (Food Alliance), the City of New Brunswick and Rutgers University to help improve access to healthier foods in the corner stores in New Brunswick.

The project used a mixed-methods design and a community-based participatory research (CBPR) approach. The list of the food stores was obtained from the City records, and after excluding the convenience stores and restaurants/cafes, the accuracy of the list was confirmed through ground-truthing. Out of the 51 food stores in the final list, 45 were corner stores, which were defined as small, locally owned food stores with one cash register.

Consistent with the CBPR approach, Food Alliance members and Rutgers staff initially reached out to 10 corner store owners/managers in 2013 to gain their perspectives on their clientele, barriers, needs, and interests in promoting healthier foods. After additional discussions with the stakeholders through the Food Alliance, a decision was made to expand both the scope and the number of interviews. As a result, 35 store owners/managers were interviewed in 2014. In addition to the interviews, the research design included objective assessment of the food environment in 49 food stores (43 corner stores, 4 medium size grocery stores and 2 supermarkets) city-wide.

Ten corner stores agreed to participate in the Hub City Fresh. After one store dropped out (due to a change in the management), intervention took place in nine participating stores and included: improvements to the store inventories (e.g., adding at least four new healthy foods); training materials for the owners about pricing and maintaining fresh produce; in-store marketing campaign involving educational and promotional materials (e.g., healthy recipes, signage for healthier foods, branded kitchen utensils as giveaways). The owners had the option to receive shelving units to display fresh produce near their cash registers, and eight of the owners opted to receive the shelving units.

Multiple factors contributed to the forward progress of Hub City Fresh. Through external funding, store owners were compensated for their time spent on interviews, and each store received $100 for joining the Hub City Fresh. Project staff and Food Alliance members visited the stores many times to build a positive relationship with the owners/managers and regular visits were critical to maintain the progress. Having the support of the New Brunswick Mayor was also helpful; Mayor's letter encouraging owners to join the Hub City Fresh was included in the recruitment packets. The main challenge for the project was sustaining funding for a bilingual staff. Currently, student volunteers and interns fulfill the staffing needs.

Overall, Hub City Fresh contributed to the availability and promotion of healthier foods in the corners stores in New Brunswick. The outcomes were shared with the stakeholders at a Community Food Forum. We continue to collaborate with the store owners in making gradual improvements to improve the local food environment. The next phases of the project include focusing on customer demand, nutrition education activities for families, and tracking the sales of healthier foods. The Food Alliance is considering additional steps (eg, establishing a co-op) to increase the availability of fresh produce in the local food network. An overview of the methods, challenges, and lessons learned will be provided during the presentation.

Funded by United States Department of Agriculture (USDA), Hunger Free Communities grant; Rutgers, Community-University Research Partnership grant; and The Food Trust, NJ Healthy Corner Store Initiative grants. Additional key stakeholders: New Brunswick Community Food Alliance and Healthy Food Access Workgroup members; New Brunswick Mayor's Office; Elijah's Promise; Christopher Ackerman; The Food Trust; Rutgers students; corner store owners and managers.

WE GREW THE LETTUCE BY TALKING: HOW UNITING STEM EDUCATION AND CRITICAL PEDAGOGY HELPED FOSTER YOUTH EMPOWERMENT

WYLIE GOODMAN & MAYA ROSE KUTZ, CORNELL UNIVERSITY EXTENSION-NYC

Educators are understandably nervous discussing sensitive topics such as race, ethnicity, class, and gender with students. In this presentation, educators with Cornell University Cooperative Extension in New York explain a) why they actively embraced these subjects while working with high-school students in a summer hydroponics learning program and b) the important lessons they learned in the process. The presentation is inspired by social activist and educator Paulo Freire, author of Pedagogy of the Oppressed and co-author of We Make the Road by Walking. Freire's work on student empowerment informs this presentation, which aims to provide attendees with strategies to spark impactful conversations with youth in their own settings.

Paulo Freire's educational approach (critical pedagogy) encourages teachers to treat students as co-creators of knowledge rather than empty vessels to be filled. His work has been used in settings ranging from apartheid South Africa to Farm School NYC, which supports adults from under-represented groups, such as women and people of color, becoming successful urban farmers.

The presentation grew out of educators' experience co-leading a 2016 summer career exploration internship in hydroponics for urban, high-school students. The program was a collaboration between CUCE-NYC's Hydroponics/Aquaponics/Aquaculture Learning Lab, the Police Athletic League, and the Work-Based Learning Resource Center of the NYC Department of Education. The hydroponics curriculum Grow with the Flow, created by CUCE-NYC's Philson A.A. Warner, informed the STEM component.

The presenters will focus on three "teachable moments" that contributed to their decision to engage students in discussions beyond STEM. These included:

Seeds: A lecture about plant science, which led to conversations about students' ethnic and cultural family histories related to farming;

Shoots: A debate over evolution, prompted by students' attempts to reconcile their religious beliefs with a biology lesson;

Fruit: A viewing of the documentary Food, Inc., which raised issues related to class and food justice, while articulating the science behind GMOs.

In all three cases, educators seized an opportunity to increase participation by delving deeper into non-STEM topics that directly affected students' lives. In these instances, educators were also able to shift the power dynamics in the classroom, as Freire recommends, so that students of color could see themselves as experts on their own lives, while their white educators were expected to listen and learn.

These presenters contend that STEM education is enhanced and improved when students are given opportunities to explore outside standardized curriculum and to lead talks on subjects around which they are experts. In contrast, rigidly conveying scientific facts while ignoring the social and cultural context in which students' lives occurs is tantamount to speaking a language they cannot understand – and ensuring superficial learning in the process. In contrast, when educators show they are trusted individuals who can exchange rather than impose knowledge the classroom becomes a place where students not only learn but grow personally. These presenters argue that Paulo Freire's pedagogy deserves a place in the STEM classroom, not apart from it.

CONTEXTUALIZING GREEN INFRASTRUCTURE PRACTICES TO REALIZE THE CONNECTIONS BETWEEN COMMUNITY, ENVIRONMENT, HEALTH, WORK, AND FOOD

TOBIAH HORTON, RUTGERS COOPERATIVE EXTENSION

While Green Stormwater Infrastructure has been developed as a tool for sustainably managing runoff, its potential to an active and vital part of urban space is underrealized. Bridging between the social and natural, a new generation of Green Infrastructure builds out from a primary purpose of reducing stormwater impacts towards enhancing people's experience and understanding of the natural/built interface. Case studies of installed Green Infrastructure demonstration systems in Newark, Springfield, Hillsborough, Rahway and Summit, New Jersey will show how contextualized Green Infrastructure can enhance the environmental, educational and social life of places such as community gardens, schools, libraries and residences. In many cases Green Infrastructure has been implemented without significant consideration of adjacent environmental, social and economic contexts. Isolated or decontextual Green Infrastructure may suffer some of the same problems as grey infrastructure - it has been deployed as a technological insertion that does not attempt to engage the broader publics in participation, learning or experience. This past Green Infrastructure has operated much like a problem-solving adaptation or prosthetic that serves as a filter and diversion within the grey infrastructure system, missing the opportunity to envision a larger restructuring of the use and experience of the outdoor landscape surrounding buildings and parking lots. In order for green infrastructure to grow its relevance, acceptance and adoption rates, it must move beyond the adaptation phase into more ambitious projects that integrate stormwater management with general circulation, link spatial uses and experience and visually engage both the public and the real estate market as the aesthetic/economic sign of innovation.

At community gardens in Newark, the Rutgers Cooperative Extension, with Rutgers Landscape Architecture Praxis Design/Build Studio implemented a project to realize stormwater as a link between land use, neighborhood context, food production and community participation. At schools and libraries, such as the Jonathan Dayton High School in Springfield projects have embraced the educational potential of green stormwater gardens, with designs that demonstrate New Jersey's physiographic diversity in geology, plant communities and hydrological systems. RCE rain gardens at municipal buildings in Springfield, Hillsborough and Summit are exploring a new aesthetic for rain gardens by borrowing principles of traditional foundation planting to create a more formal appearance for public buildings. Residential gardens in Rahway were designed with an interactive guide to include the homeowner in the process, creating 17 custom designed gardens in an economical, streamlined process. These myriad projects share in common the principle that the rain garden can be layered, connective landscape spaces – spaces that greet neighbors, invite learning and participation, demonstrate natural/built systems interface and explore the aesthetic possibilities in a deeper relation to adjacent contexts. Project partners include: It Takes a Village, Inc. in Newark; Springfield Township, Springfield Department of Public Works and Springfield Board of Education; Hillsborough Township Administration, Hillsborough Parks and Recreation, Hillsborough Boy Scout Troop 156; City of Rahway, Rahway Volunteers, Rahway Homeowners, Wogisch Landscape Contractors; Summit City Administration and Summit Library Staff.

GREEN INFRASTRUCTURE: IMPLEMENTATION AT THE COMMUNITY LEVEL

DEBBIE MANS & SANDRA MEOLA, NY/NJ BAYKEEPER

This workshop will discuss innovative green infrastructure projects across the state and the establishment of Municipal Action Teams to champion and implement such projects. Green infrastructure uses vegetation, soils, and natural processes to manage water and create healthier environments by reducing flooding, stormwater pollution, and combined sewer discharges. NY/NJ Baykeeper will discuss their innovative partnership with Rutgers Cooperative Extension Water Resources Program to provide technical and outreach assistance to communities to promote and implement green infrastructure projects. The presenters will provide materials on stormwater management, green infrastructure, social media techniques, combined sewers and community engagement that can be used as models for other communities.

The presenters will discuss two case studies: Newark DIG (Doing Infrastructure Green!) and Paterson SMART. These collaborations highlight the partnership between a non-profit organization and Rutgers Cooperative Extension Water Resources Program (RCEWRP) to deliver technical expertise and funding to construct green infrastructure projects based on community-driven priorities. Specifically, NY/NJ Baykeeper was approached by RCEWRP because of its relationships with community-based organizations (CBOs) and its capacity to bridge these groups to the resources of the RCEWRP.

For example, we tapped into the local knowledge of the CBOs to have them identify areas to locate green infrastructure projects. This was done through asking them about local flooding, tree coverage, community gardens, willing property owners and need for neighborhood green spaces. By listening to the community's priorities and selecting those to design and construct, RCEWRP obtained a built-in constituency that then supported these projects all the way from the neighborhood level to municipal elected officials.

One aspect that we have learned is to make sure we have the right people around the table. This can range from ensuring that the CBOs reflect the diversity of the municipality to having the right members of the municipal staff. Often, the "ownership" of green infrastructure within a larger municipality may fall under several departments – our task was to understand this dynamic and ensure that the right members of the municipal staff were invested enough to come to our meetings with the CBOs.

Established in 2013, Newark DIG's goal is the establishment of sustainable green infrastructure as the first line of defense to better manage stormwater runoff, improve water quality and resiliency to flooding, and to reduce combined sewer overflows (CSOs), with a focus on the Passaic River and its tributaries. The collaboration includes members of local and regional non-profit and community organizations, Rutgers University, the City of Newark, and NJ Department of Environmental Protection. For more information, visit: http://www.newarkdig.org/.

Paterson SMART is a collaboration working to bring together community organizations, community members, educators, researchers, developers and property owners to incorporate green infrastructure to generate multiple benefits derived from stormwater management techniques. Our primary goal is the establishment of green infrastructure to improve water quality and reduced combined sewer overflows (CSOs), using stormwater management, urban design, and education. For more information, visit: http://www.patersonsmart.org/.

HELPING ONE HOUSEHOLD AT A TIME - FIRST TIME HOMEOWNERS AND FORECLOSURE PREVENTION IN AN AREA DEVASTATED BY YEARS OF MUNICIPAL NEGLECT

BETH MARTINEZ, MICHIGAN STATE UNIVERSITY EXTENSION

Homeownership and personal financial education helps residents gain financial stability in the Brightmoor and other neighborhoods of Detroit devastated by years of blight, unemployment and made worse by the recent Recession. Strengthening the community through pride of homeownership, encourages greater community participation and discourages further blight. Increased homeownership also increases city revenue through payment of property taxes and eliminates vacant properties which frees up resources for other city services.

One resident at a time, MSU Extension provides university-backed, research-based workshops showing residents that homeownership is attainable by educating them about programs to assist with down payments and home improvements. As a Housing and Urban Development (HUD) and Michigan State Housing Development Authority (MSHDA) approved agency, we provide a certification upon completion of a 6-8 hour class that is one of the qualifiers to receive between $7500 and $15,000 toward the purchase of a home as down payment assistance.

Many residents of Detroit are unaware of these programs to help navigate through the home buying process. By going directly into the communities and partnering with area non-profit agencies, lenders and realtors we provide wrap-around services to potential homeowners. Through partnerships with Focus Hope, Detroit Land Bank, Department of Health and Human Services, Detroit Parent Network and area churches we can explore how this programming can be expanded to other depressed urban areas.

Neighborhood Associations, local lending institutions focused on meeting Community Reinvestment Act requirements, and the Detroit Land Bank which administers the purchase and sale of properties forfeited via default on property taxes. This initiative was originally funded through a grant from the State of Michigan via the Attorney General Settlement fund. It continues with funding from a MSHDA grant.

Over the past year and a half, 225 prospective homeowners throughout Metro Detroit have attended homeownership classes and qualified for down payment assistance programs. While our efforts cannot be directly tied to the decrease in vacancies in Metro Detroit, by continuing to offer quality programming to area residents we are ensuring that they are equipped with the information necessary to become productive homeowners.

We do not yet have a proven method to track how many who attended classes have purchased homes within twelve months of attending the class. What we have learned is that word of mouth touting the classes has increased the demand for classes and has outpaced our capacity.

Our willingness to go into neighborhood locales to hold classes has stakeholders telling their colleagues and class sizes are increasing from an initial 2-3 per class to 20+ attendees.

Here are some comments from the Exit Surveys we collect after each class:

> "Thank you, this was life-changing."
> "Very helpful in a lot of areas that I was kind of confused in."
> "Great presentation. I will provide my 7 children with the knowledge I received from this workshop."
> "Helped me to understand the ins and outs of home buying."
> "Great source of information for me to obtain homeownership."
> Stakeholder comments:
> The employees have expressed great appreciation in the information received. By the way, news of the workshop reached the company's shareholders and they were really pleased and are actually requesting for the workshops to be provided regularly.

This initiative has uncovered challenges faced by area residents that includes poor credit, lack of verifiable income, no savings and very little budgeting or planning for the future. These challenges may sometimes seem insurmountable. The task we face is to educate clients that their situation is not unique nor is it impossible to overcome these barriers. By sharing the knowledge that other residents with like circumstances have succeeded in becoming homeowners, often with a lower payment than renting offers, we offer hope and a path to homeownership. By doing so, MSU Extension is positively contributing to strengthening our community and assisting neighborhood revitalization.

BRINGING HORTICULTURE AND YOUTH DEVELOPMENT TO STUDENTS LIVING IN PUBLIC HOUSING

JAMES NICHNADOWICZ, RUTGERS COOPERATIVE EXTENSION

Establishing an effective partnership with the Rahway Housing Authority was critical to the success of this program. Effective partners have; common goals but complimentary skills; good communication skills for sharing of ideas and negotiating differences; and respect for one another. Trust and respect are developed over time and in the fulfilment of agreements and promises.

The first agreement between the Rahway Housing Authority and the Rutgers Cooperative Extension 4-H Youth Development Program of Union County was that I would meet with a group of their youth to assess interest in a science program. Both parties fulfilled their obligation - I arrived at their site and a group of youth were waiting. To assess their interest and aptitude in the area of science I meet with them twice and conducted two different science activities with them. From these activities I assessed little interest in science. However when they answered the open ended question , " what would you like to learn about? ", they said gardening and cooking. If I had walked away when they did not express interest in science I would have missed a good opportunity to work with a group of youth who have limited exposure to these topics. When we approach a group it is important to have a range of topics we can offer.

What topics can you offer to a group ? You must assess your own abilities, funding , facilities, transportation and availability to answer such a question. In this case I could offer activities in the area of my expertise; science, horticulture and environmental studies and I had sufficient knowledge for basic training in cooking. The grounds of the housing authority could accommodate these topics as they had a kitchen and space for the others. They also meet at a time that matched my availability and had enough funding to purchase basic supplies.

The cost of basic supplies for a cooking/gardening program is minimal. The largest cost in Rahway, if we were starting from scratch, would have been for a wheel barrel and various garden tools; a total of $300. Garden programs can be started for much less cost however; A simple plastic cup can hold a plant and be the source of wonder and joy to a new gardener. Sites with more funding and secure gardening places, can construct gardens on a larger scale. Our local Master Gardener Program provided funding for some purchases and Union County provided a van for transportation of equipment and supplies.

The program was evaluated through photographic documentation. Using these photos we reviewed with the students what they had accomplished and learned. Some of the significant findings were; the joy that a successful harvest brings; the discovery of gardening resources in their community; and the increased self-esteem that success brings.

A successful garden project requires knowledge, resources and cooperation. However youth development (increased self-esteem) can be accomplished through many other subjects; such as cooking, arts and crafts, pet care and computer coding. Resources to accomplish youth development through these topics maybe easier to attain then for a horticulture program.

THE NEW JERSEY RAIN GARDEN REBATE PROGRAM

SARA MELLOR, RUTGERS COOPERATIVE EXTENSION WATER RESOURCES PROGRAM

The New Jersey Water Supply Authority (NJWSA) Watershed Protection Program partnered with the Rutgers Cooperative Extension (RCE) Water Resources Program to develop an education and outreach program designed to encourage residents to disconnect impervious surfaces by constructing rain gardens on their property. While educating homeowners about how rain gardens can help reduce the impact of stormwater runoff on local waterways is important, the ultimate goal of this urban Extension program was to promote a behavior change. The intent of the program was to get homeowners to disconnect downspouts and driveways from the storm sewer systems that drain to nearby waterways by diverting runoff to newly constructed rain gardens on their property.

Since the launch of the Rain Garden Rebate Program in 2013, five educational programs have been delivered to encourage residents to install rain gardens. Nine technical support sessions were conducted where homeowners met with design professionals to develop custom rain gardens for their homes. This includes working one on one with the homeowners to determine the most ideal location and size for their rain garden, the quantity of soil amendments and mulch needed to install the rain garden, and the number and variety of plants that would work best in their yard. The rain gardens are designed to capture stormwater runoff from the New Jersey water quality design storm, which is 1.25 inches of rain over two-hours. Since 90% of the rainfall events in New Jersey are storms with less than 1.25 inches of rain, these rain gardens will reduce pollutant loads from impervious surfaces by 90% on an annual basis.

Once a property owner completes the installation of the rain garden, they contact the RCE Water Resources Program to request an inspection. The inspection is our way of verifying the size and drainage area of the rain garden, that it is a landscaped depression designed to capture, treat, and infiltrate stormwater runoff, and that the garden does not have any invasive plants. After a successful inspection, a rebate in the form of a Visa™ gift card is awarded to the homeowner in the amount of $3 per square foot up to a maximum of $450 per property. Due to the success of this program, other municipalities in New Jersey are seeking to replicate it in their communities.

To date, the Rain Garden Rebate Program has educated over 130 attendees about stormwater management and rain gardens, 99 unique rain garden designs have been created for 84 properties, and 32 rain gardens have been installed on 27 properties within the eligible rebate areas of Bridgewater, Hillsborough, Raritan Borough, and Somerville, New Jersey.

INCREASING STORM RESILIENCY THROUGH ECOLOGICAL RESTORATION AND DESIGN

BROOKE MASLO, RUTGERS COOPERATIVE EXTENSION; BRIAN SCHUMM, RUTGERS UNIVERSITY; CHRISTOPHER C. OBROPTA, JEREMIAH BERGSTROM, & TEKLA PONTIUS-COURTNEY, RUTGERS COOPERATIVE EXTENSION WATER RESOURCES PROGRAM; JOHN E. McCORMAC, WOODBRIDGE TOWNSHIP

Ecologists, engineers and landscape architects at Rutgers Cooperative Extension (RCE) are collaborating with Woodbridge Township on floodplain restoration and open space design in neighborhoods that were severely impacted by Hurricane Irene and Superstorm Sandy. In 2014, Woodbridge Township proactively sought to increase the resiliency of its municipality, successfully securing funds through the New Jersey Department of Environmental Protection Blue Acres Program to purchase ~200 flood prone properties located within the Township's flood plain. The primary objectives of this initiative were to protect the safety and health of Township residents by encouraging homeowners to relocate permanently to higher elevation areas, and to restore the natural function of the flood plain to promote storage and infiltration of stormwater in appropriate areas, particularly during significant storm events. The Township requested technical assistance from RCE in creating a long-term vision for the newly acquired properties. Working closely with the Township, RCE developed restoration strategies for transforming flood-prone urban residential areas into community open space and natural habitats, resulting in improved flood storage potential and passive recreational opportunities.

The goal is to strengthen community resiliency against storms, improve conservation value of these areas, and create low-maintenance strategies to ensure long-term persistence of public open space. RCE first characterized the existing conditions within the project area, including hydrology, soils, vegetation, wildlife habitat, and current land use, and then prepared a detailed set of recommendations for ecological restoration and public amenity enhancements, highlighting landscape and community connections, public access points, landscape buffer establishment and management, stormwater management and flood storage, invasive plant control, native vegetation community restoration, and wildlife habitat enhancement. Our approach was to maximize the use of native vegetation to increase the ecosystem services provided by open space within the project area, particularly to maximize stormwater infiltration and flood storage. A key component of the plan is to maintain a low-maintenance buffer zone between remaining residential properties and restored areas. Vegetation structure will gradually increase in height and diversity with distance from residential property boundaries. In addition, the plan calls for enhancement of public amenities to connect residents with the new landscape, including a network of trails and small parks.

The township has committed funds to implement the restoration plan and has secured additional cash and in-kind services through the United States Fish and Wildlife Service's Partners for Fish and Wildlife Program. In Fall 2016, we have implemented the first phase of the restoration plan, resulting in the removal of ~1 acre of impervious cover, the installation of 50 native trees, and the seeding of ~3 acres of warm-season grass/wildflower meadow. Additional work is slated for Spring 2017, and all partners are committed to project completion over the long term. Critical to the success of this project are both the collaboration of two programs within RCE (Wildlife Conservation and Management; Water Resources), as well as the involvement of multiple Township representatives (i.e. public works, office of emergency management, engineering, recreation), as well as Rutgers Cooperative Extension at all levels of the planning and implementation process. Coordinating efforts and delegating tasks appropriately has greatly increased the efficiency with which progress has been made and has solidified the foundation upon which continued interventions can be administered.

ENGAGING UNDERGRADUATE STUDENTS IN COOPERATIVE EXTENSION PROGRAMS

CHRISTOPHER C. OBROPTA, RUTGERS COOPERATIVE EXTENSION WATER RESOURCES PROGRAM

One of the goals of the RCE Water Resources Program is to train the next generation of water resources professionals. While some of this is completed by supporting masters and doctorate students, a large portion of this goal is accomplished by having a robust student intern program. Engineering, environmental science, landscape architecture, and environmental planning and policy students are employed every year as part of the student intern program. Students work part-time during the school year and full-time over the 14-week summer. This program is designed to prepare the student for the workforce by enhancing the students' technical skills to conduct field investigations, prepare reports, complete complex engineering calculations and designs, and oversee construction of green infrastructure practices. The program also focuses on providing the students professional development training including conflict resolution, leadership skills, time management, and competency understanding. Over the summer, the student interns are offered four days of professional development training focusing on conflict resolution, emotional intelligence, core competencies, and effective communication. During their internships, students work closely with professionals in the field and produce project deliverables. They learn AutoCAD, ArcGIS, and HydroCAD as well as field sampling and site evaluation. This internship provides students the experience they need to be successful in the workforce.

During the summer of 2015, 25 undergraduate student interns were employed. The student interns collected data to produce impervious cover assessments (ICAs) and impervious cover reduction action plans (RAPs) for 54 municipalities in the Raritan River Watershed as well as 10 other communities in New Jersey. By the end of the summer, they prepared ICAs for 70 municipalities and RAPs for 30 municipalities and produced 30 green infrastructure designs for municipalities throughout the state.

The program is solely supported with grant funding from projects that require specific deliverables. The students are taught how to collaborate with other students from different disciplines and how to produce a high quality deliverable in a timely fashion. Over the past four years (2012-2015) the summer student internship opportunity has employed 48 student interns. Interns are compensated $10-$13 an hour based on experience. The budget for the program ranges from $24,000-$38,000 or $1,710-2,720 per week based on a 14-week schedule. The total investment was approximately $88,000 or $29,350 per summer. Approximately 8,300 hours were completed during the 2012-2015 summer work schedules.

A survey of summer interns over the last four years has clearly indicated the program is a success. All of the students surveyed would return to work for the program and would recommend the program to a friend. All of the students surveyed believed that they were treated like a valuable member of the RCE Water Resources Program, and 100% of the student interns felt like their experience will help with classes/school or another job. This has proved true as these students are beginning to get full-time jobs in their field of study. Many have indicated that their experience during their internship was what got them their job after completing college.

The Water Resources Program greatly benefits from the student intern program. Last year it saved over $150,000 by using student interns instead of full-time employees. One of the lessons learned from the program is to have high expectations for the students and make sure every mistake is a learning experience. Also, don't forget to celebrate on a regular basis; picnics and ice cream parties tend to work the best!

ADDRESSING MICROPLASTIC POLLUTION IN URBAN WATERSHEDS

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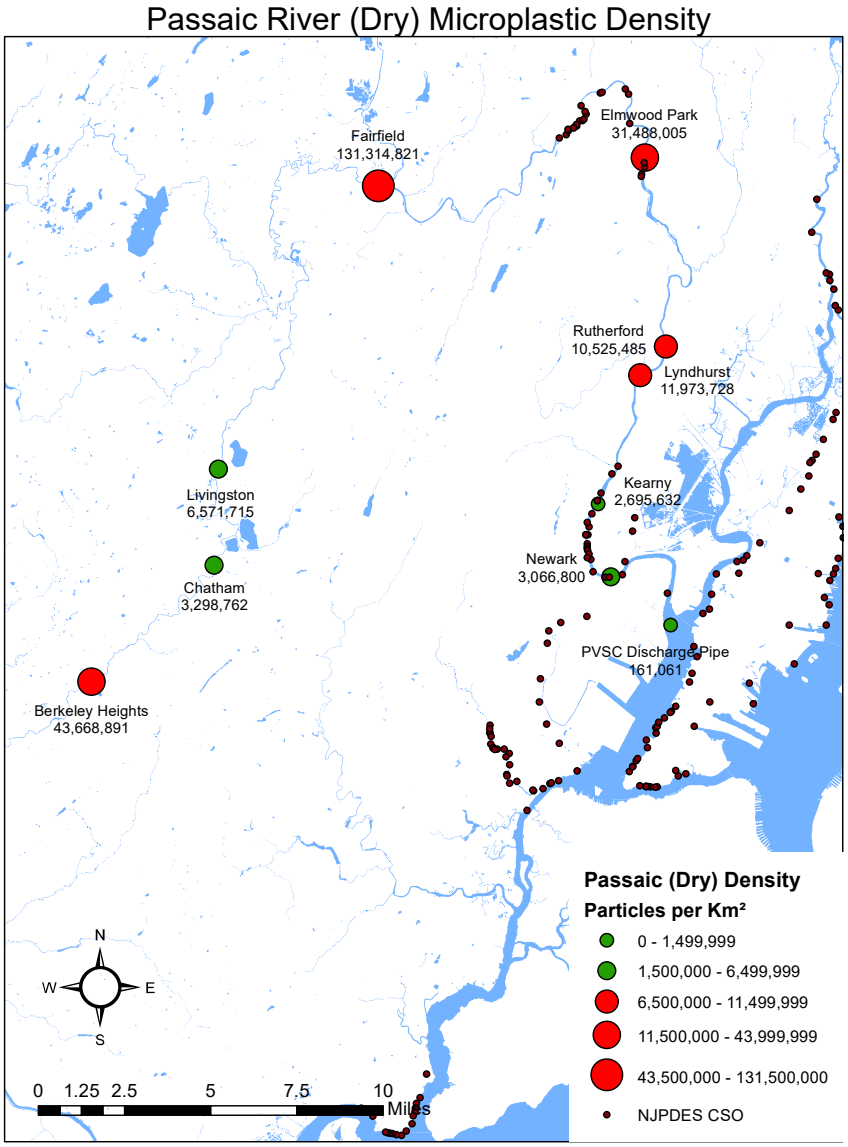
Plastic pollution is acknowledged to be a critical problem affecting freshwater and marine aquatic systems. Recent research indicates that highly urbanized areas are exposed to greater concentrations of microplastic pollution. Widespread use of products containing plastic microbeads, and the inability of wastewater treatment processes to remove these pollutants, is an increasing threat to urban aquatic resources and drinking water supplies. Three diverse partners (Rutgers Center for Urban Environmental Sustainability (CUES), NY/NJ Baykeeper, and the Ironbound Community Corporation) collaborated to collect water samples, recover and analyze microplastic contents, engage students from an Environmental Justice community (Newark), and develop materials to support a plastic reduction campaign. The collaboration was successful because when drafting the grant proposal each partner agreed to defined tasks and deliverables that fit well within their specific mission and core competencies. Communication between the various partners occurred daily as the research progressed.

Water column samples collected by Rutgers and East Side High School students from the Raritan and Passaic Rivers, Newark and Raritan Bays were investigated to calculate surface water microbead densities along a fresh to estuarine salinity gradient. We found Passaic River microplastic sample density to be an order of magnitude greater than microplastic density observed in the Raritan River samples. The type of microplastic was found to be site-specific; plastic content in the lower tidal portions of the rivers differed from content seen upstream, suggesting different sources. Recovered plastic microbeads were chemically analyzed to characterize both adsorbed persistent organic pollutants, as well as plasticizers in the beads themselves. Additionally, model vertebrate and invertebrate organisms were exposed to plastic microbeads to determine observable toxicity effects.



The High School student interns were identified by Ironbound Community Corporation working with teachers at Newark's East Side High School. The students from an Environmental Justice community who participated in the project gained the experience of doing actual scientific research, and they are now considering the option of a career in science. NY/NJ Baykeeper will be communicating the scientific data and leading community education efforts to reduce plastic pollution within the Raritan and Passaic watersheds. This project will aide in establishing a baseline of current New Jersey microbead pollution, contribute to assessing the effectiveness of the pending New Jersey ban to stop the manufacture and sale of microbead products, and support engaging local communities in plastic cleanup efforts.

EXTENSION BASICS OF COMMUNITY PROGRAMMING IN THE REALM OF NON-POINT SOURCE POLLUTION; PERFECT TOGETHER

PATRICIA RECTOR, RUTGERS COOPERATIVE EXTENSION;
CHRISTOPHER C. OBROPTA, RUTGERS COOPERATIVE EXTENSION WATER RESOURCES PROGRAM

In NJ many of our impaired waterbodies are impaired due to non-point source pollution; typically stormwater runoff from impervious surfaces. Urban/suburban areas have significant areas of impervious surfaces leading to stormwater runoff and impaired waterways. New Jersey, one of the most densely populated states in the nation lacks regulatory or financial incentives to require disconnection of impervious surfaces and the reduction of stormwater on existing residential properties. Voluntary, wide-scale adoption of Best Management Practices (BMPs) are needed to make a difference in many of the streams in NJ, excluding some of the residual Super Fund or similar sites.

Addressing stormwater may use technical modeling to determine the pollutant loads and loading areas and social media to increase outreach, but the answers for several NJ programs included personal relationships and community based educational programs; the Extension essentials. Twenty-seven community rain barrel workshops were conducted from 2010-2015 (n=627) and yielded higher installation rates than the statewide average. Follow up surveys indicated that residents installed their rain barrel to disconnect their downspout (65%).

Rain gardens were clustered in a community during two phases; in 2010 and in 2014. The objectives of both programs were to 1) increase the knowledge of residents about stormwater and residential solutions and 2) to install rain gardens in the neighborhood as demonstration projects at the residential scale. A 2015 survey distributed to the residents of the community (n=196) and a control neighborhood of similar demographics and home values (n=201) found that 40%of the control respondents knew what a rain garden was while 89% of the treatment respondents knew what a rain garden was. Additionally the treatment community was asked which factor was most responsible for installation in the second phase (2014). We found that the influence of neighbors was the highest factor (50%).

To achieve water quality improvements in a municipality we have worked with individual sectors of the community. For example, we have included a Greening the Department of Public Works (DPW) Program. The DPW program did not simply install BMPs at the facility, we worked for several years with DPW staff, in a mutually responsive relationship. They are now the installers and the stewards of the projects at the DPW yard. Through those BMPs the DPW reaches 100% reduction (theoretical) of stormwater runoff during the NJ water quality storm (1.25 inches/2-hours). By forming relationships and with the DPW staff and educating them and they are able to put their knowledge into action throughout the municipality.

This talk will discuss the unparalleled strengths of Cooperative Extension for stormwater management in urban/suburban areas. Although the factors that influence adoption of residential stormwater BMPs have not been well studied, the rain garden answers regarding factors that influenced their decisions tie back remarkably to early work by Extension on adoption of farm practices. Working with communities, forming relationships, and creating community-based educational programs to help change behaviors are the strengths of Cooperative Extension and are what are needed to change behavior on the farm or in the urban centers.

IMPERVIOUS COVER ASSESSMENTS: A NEW TOOL IN URBAN EXTENSION TO REDUCE FLOODING AND IMPROVE WATER QUALITY IN NEW JERSEY

CHRISTOPHER C. OBROPTA, RUTGERS COOPERATIVE EXTENSION WATER RESOURCES PROGRAM

Water resources planning was the foundation of the Rutgers Cooperative Extension (RCE) Water Resources Program. Regional stormwater management plans and watershed restoration plans were developed for small watersheds throughout New Jersey (20 to 50 square miles). Due to the extensive hydrologic, hydraulic, and pollutant modeling that was required to develop these plans and the water sampling needed to validate these models, these plans took several years to produce (2-4 years) and were costly to create ($200,000 - $400,000). As we began implementing the recommendations of the plans, we quickly realized that the best portion of the plan was the chapters that identified specific projects where stormwater management could be implemented. Therefore, we created a new planning format that focused on identifying opportunities for implementing green infrastructure to better manage stormwater runoff that did not involve all the costly and time-consuming modeling that was required by the regional and watershed restoration plans.

This new planning format consists of completing an impervious cover assessment (ICA) for municipalities and then developing an impervious cover reduction action plan (RAP). Together these documents can be completed in several months for less than $15,000 per municipality but more importantly, these two documents together provide a blue print for municipalities to move forward with stormwater management projects that will improve water quality, reduce flooding, and enhance climate resiliency. Digital imagery is used to identify opportunities for implementing impervious cover management strategies, and field investigations are conducted to determine the best practice for each identified site. The plans provide each municipality with a calculation of stormwater runoff volumes associated with impervious cover for design storm events and a target reduction volume to improve overall surface water quality through the reduction of stormwater runoff volumes and pollutant loads. The ICA and RAP cost about 10% of the price of regional and watershed restoration plans to develop and only take a couple of months to complete.

Thus far, the RCE Water Resources Program has completed ICAs and RAPs for over 62 municipalities in New Jersey. Support for this effort has been provided by the National Fish and Wildlife Foundation, New Jersey Sea Grant, the William Penn Foundation, and the Geraldine R. Dodge Foundation. For the 54 municipalities that have been completed in the Raritan River Watershed, 897 sites have been identified for green infrastructure and 45 projects have been constructed so far.

One of the lessons learned through this effort was the need to identify a local champion to help engage the community and the municipal government with project implementation. The local champion can serve as a liaison between the cooperative Extension, municipal officials, schools, local residents and non-profit organizations. The next step in the project will be to identify and empower local champions throughout the 60+ municipalities that have plans.

COMMUNITY OUTREACH THROUGH THE RUTGERS VETS PROGRAM

AMY ROWE & JAN ZIENTEK, RUTGERS COOPERATIVE EXTENSION

Bureau of Labor Statistics, 2015). The Rutgers Veterans Environmental Technology and Solutions (VETS) program has provided green job skills to 43 veterans since 2014 and 100% of those veterans have been minorities (mostly African American), even though minorities comprise only 20% of the national veteran population. The veterans learned sustainable landscaping, agriculture, horticulture, and stormwater management techniques over more than 1,000 hours of training. The vets also received entrepreneurship training through a partnership with the Rutgers Business School so they would be prepared to start their own businesses after the program concluded.

The historic contamination of the Lower Passaic River in northeastern New Jersey has been documented in great depth and the strategy for remediation of that contamination is still being decided. The greatest health risk to the general public from the river is the consumption of contaminated fish. Here, a fish exchange program was undertaken in the Lower Passaic River in Newark, NJ, as part of the Rutgers VETS program. A small aquaponics system was installed and managed by the vets for fish production with tilapia as part of their sustainable agriculture training. The fish exchange occurred at locations along the Passaic River that were chosen due to the frequency with which fishermen were encountered during the angler pre-survey of the river.

The fish exchange was conducted once a week from June through October in 2015 and 2016. Nearly 160 fish that weighed almost 48 pounds total were collected and exchanged for clean, tilapia over the span of the pilot study and more than 300 local residents were educated about the risks associated with eating contaminated fish out of the Lower Passaic River at the exchange and other community events.

Other impacts provided by the veteran participants:

- Nearly 1,000 pounds of vegetables grown and donated them to the food pantry adjacent to the facility (greens, herbs, tomatoes).
- 260 tilapia raised aquaponically from fingerlings in the greenhouse managed by the vets.
- Seedlings were distributed to local residents during community outreach events and residents were taught how to garden with those plants.
- Planted 100+ trees and pruned others in Newark parks.
- Installed a drip irrigation system at Presby Memorial Iris Gardens resulted in a 50% reduction in irrigation water use.
- 3 community gardens were established in the area and rainwater harvesting systems installed.
- Of the 12 graduates from the 2014 class:
- 5 veterans found full-time jobs landscaping, green walls
- 3 started their own landscaping company
- 1 went back to school full-time to earn her degree in biology
- 1 stayed on as the program intern for advanced training

Veterans are an underserved audience and an untapped resource in the community. The Rutgers VETS program provides unemployed vets with training in a marketable while local communities gain an eager workforce that provides food, educates the community, and “greens” the surrounding areas.

COMMUNITY GARDENS TO INCREASE ACCESS TO HEALTHY FOOD

JIM SIMON, ISLES, INC.

Isles, Inc. is a 35 year old, Trenton-based nonprofit that fosters self-reliant families and healthy, sustainable communities. Since its inception, Isles has helped residents transform neglected parcels of urban land into gardens that address hunger relief, food production, urban beautification, and open space preservation throughout the city of Trenton. Isles currently provides technical, organizational, and educational support to over 70 school and community gardens and works with community partners to increase access to healthy food. In 2013, Isles expanded its main demonstration and production garden to half an acre in order to launch the Incubator Garden, a training facility designed to increase the numbers and skills of community and school gardeners. Additionally, Isles offers other unique tools for citizens to be active participants in shaping their neighborhoods through neighborhood planning, vacant property stabilization, environmental stewardship, and mobile recreation.

Isles partners with Extension in a number of ways. Master Gardeners from Cooperative Extension of Mercer County volunteer in school gardens supported by Isles and some are also members of community gardens. Agricultural agents and farm programs staff visit Isles-operated sites and community gardens to share best practices for crop management, food safety, and urban growing. Rutgers SNAP-Ed is a partner in the Trenton Healthy Food and Fitness Network, a community collaborative led by the NJ Partnership for Healthy Kids-Trenton. One successful project of the collaborative is the Greenwood Avenue Farmers Market, which is in its second year. Isles sells produce at the market, which also offers physical activity, health screenings, and recipe tastings and nutrition education provided by SNAP-Ed staff. Isles has hosted Rutgers Water Resources rain garden design and construction trainings and rain barrel building workshops and has integrated both concepts into school and community gardens. Studio classes from Rutgers Department of Landscape Architecture have visited Trenton gardens for a number of years to understand how they function in the city.

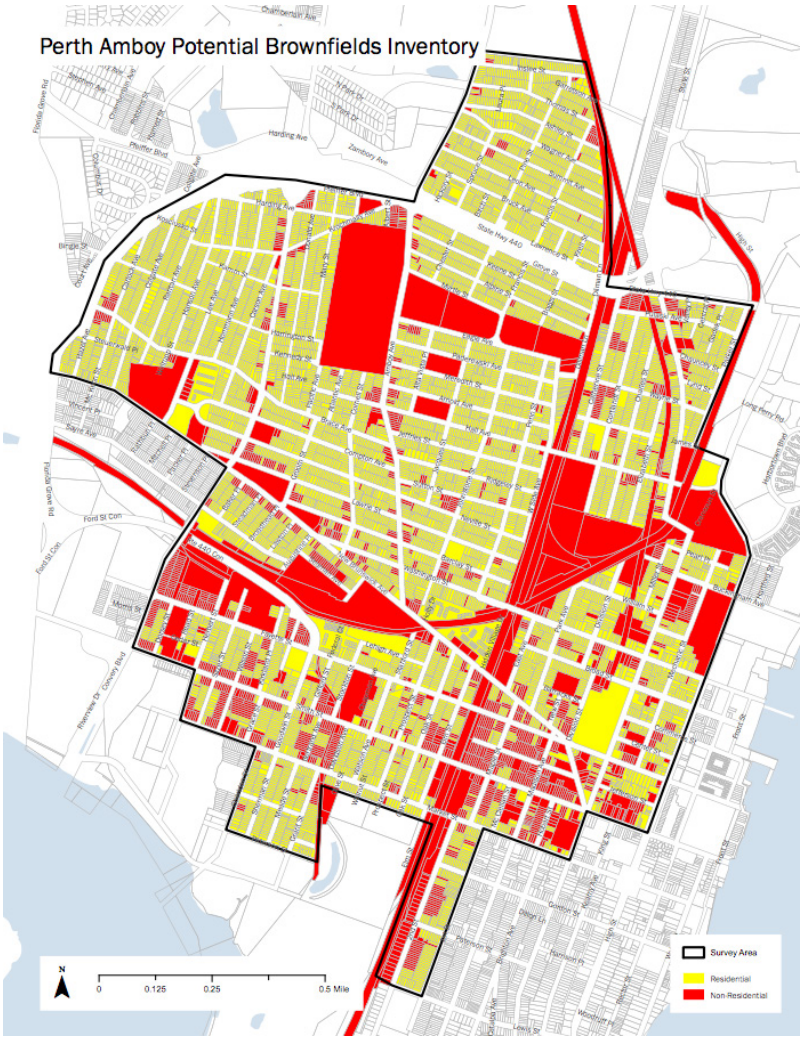
In 2014, Isles facilitated a joint study, Integrating Re-Use of Abandoned Properties for Healthy Food Options, by Rutgers Center for Urban Environmental Sustainability (CUES) and the Department of Landscape Architecture. One facet of the study utilized GIS modeling to identify vacant properties that could potentially be used for food production or distribution, while the other aspect of the study involved conducting community gardener surveys and focus groups to understand gardeners' perspectives on and contributions to food access. This presentation will cover numerous challenges of urban agriculture but also cover how additional research and partnerships are helping strengthen both the Trenton food system and the statewide network of organizations involved in utilizing urban agriculture as a tool for community development.

USING INNOVATIVE GIS TECHNOLOGY TO COMPILE ACCURATE BROWNFIELD INVENTORIES

ZENON TECH-CZARNY & BETH RAVIT, RUTGERS CENTER FOR URBAN ENVIRONMENTAL SUSTAINABILITY; MARK HOPPES, RUTGERS UNIVERSITY

Remediating and redeveloping Brownfield properties is a critical issue for human and environmental health in urban communities. However, official databases are not necessarily well maintained or accurate, and many communities do not actually have a useable Brownfield property inventory. The Middlesex County Improvement Authority (MCIA) and the City of Perth Amboy, New Jersey are working to develop cost effective and creative strategies to address Perth Amboy's brownfield properties. The goals of this project were to: 1) create an accurate digital data file for Perth Amboy and MCIA to use in updating existing Brownfield data sources; 2) identify properties that might be brownfields, but that are not currently listed in the state or federal databases; and 3) for use in local and regional landuse planning. In collaboration with Middlesex County Improvement Authority (MCIA) and the City of Perth Amboy, the Rutgers Center for Urban Environmental Sustainability (CUES) used innovative handheld GIS technology to survey current Brownfield database sites, as well as potential Brownfield properties in Perth Amboy, NJ.

Over the course of two months, the CUES team surveyed 25 NJ Brownfields Site Mart sites, 76 NJ DEP Known Contaminated sites, 178 US EPA Resource Conservation and Recovery Act (RCRA) sites throughout the city. The survey found 14 address discrepancies and 80 business names that did not match the database information. There were also 38 locations in the database that could not be matched to municipal parcel data. Additionally, 10,087 parcels within a designated 1.8 square mile residential area were surveyed to identify properties not listed on these databases where current or historic commercial activity may have resulted in site contamination. Parcels within the designated survey area consisted of 8,279 residential properties and 1,808 non-residential properties (including churches, schools, cemeteries), of which 1,040 were categorized as "commercial". Based on land use and visual assessment, 124 commercial parcels were identified were contamination may be present, and which require further evaluation.

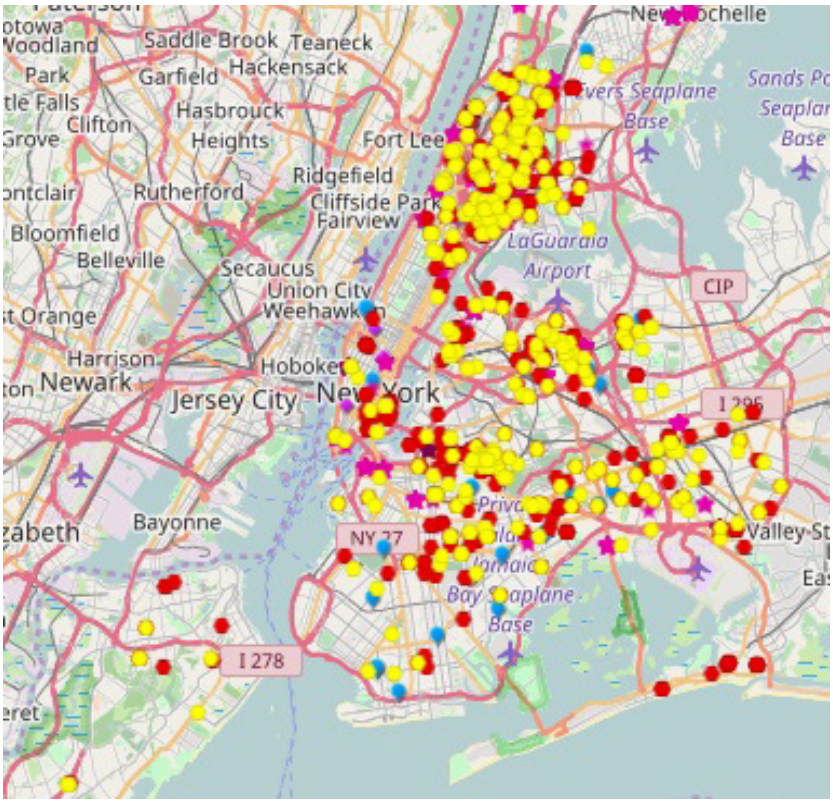


This inventory provides the City of Perth Amboy with the data needed to pursue further site investigations and to submit database corrections to the various state and federal agencies. The project partners have met with NJDEP to discuss options for updating Brownfields databases with data that has been field-verified. The research also provides a planning tool for municipal and county planning departments. Furthermore, it serves as a model for other communities seeking to comprehensively inventory their Brownfields using innovative GIS technology.

USING GEOSPATIAL MAPPING TO PLAN AND TRACK PROGRAM DELIVERY: A PICTURE IS WORTH A THOUSAND WORDS

JENNIFER SARAH TIFFANY, CORNELL UNIVERSITY EXTENSION-NYC

Cornell University Cooperative Extension-NYC (CUCE-NYC) recently initiated the use of geospatial science to map programs delivered throughout the city. Data from all programs are entered into a straightforward spreadsheet that includes specific program delivery locations as well as details about workshops and other events (program area, project, type of event, educator responsible, number of adult and youth participants). Maps generated from the data can be viewed at many levels of resolution, (see images one and two: Five boroughs and Bronx maps). Data layers from different programs and time periods can be "switched" on and off. This offers opportunities to visualize events and workshops offered by separate programs (e.g. Parenting Education, Nutrition and Health, 4-H/Youth Development, Hydroponics/ Aquaponics) to assess each program's extent as well as to look at all programs offered by CUCE in a particular neighborhood or section of the city. Maps give immediate visual cues as to where our program reach is strong and also make it clear where there are gaps in outreach. Reviewing maps as a team sparkles conversation and creativity. Since long term partnerships with community organizations enable multiple cycles of programs to be conducted at the same location over time, hovering over a point on the map enables the user to access data about all events that have been conducted at that location over the period being assessed (see image three: Rockaway). Program data can be combined with social and economic data to assist in directing program delivery to areas where the need is strongest.



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