

Interviews with Researchers

Interviewee X

Professor, Green Stormwater Infrastructure Specialist, Biological Systems Engineering, Past-President American Ecological Engineering Society.

Urban Resilience Through Nature-Based Solutions

X discussed nature-based solutions for urban resilience, emphasizing trees as the first intervention due to their stormwater management and co-benefits. They identified three key research areas: the role of plants in stormwater systems, the intersection of social sciences with nature-based solutions, and incorporating climate science projections into design. X also highlighted the need for better integration of arborist knowledge with engineering and the importance of understanding community needs and building trust in underserved areas.

Affordable Sensor Technology for Monitoring

X discussed the need for more affordable and reliable sensor technology for monitoring various environmental parameters, such as bacterial contamination and harmful algal blooms, which are currently expensive and difficult to deploy. They emphasized the importance of post-construction monitoring and the development of low-cost asset management systems for nature-based solutions like trees and bioretention systems. Brad suggested the possibility of sensors that could trigger human intervention for maintenance, allowing for better resource allocation.

Synthesis Centers for Research Collaboration

Brad and X discussed establishing synthesis centers for researchers to collaborate and develop research questions beyond specific disciplines. X emphasized the importance of in-person collaboration, incentives like funding opportunities, and the prestige of being part of a curated cohort. They considered the potential outcomes of the project, including building a network of researchers, writing grants, and publishing a manuscript in a journal. X highlighted the value of the process itself, including rigorous thinking and writing, even if the final product is not published.

5-Year Project Outcomes and Metrics

X discussed the desired outcomes for a 5-year project, including securing a grant, graduating students, and measuring tangible impacts such as increased awareness and

behavior change. They emphasized the importance of developing standardized metrics to assess the project's success and highlighted the challenge of balancing case studies with broader data synthesis. X expressed willingness to contribute his research to a shared repository, noting the potential benefits of standardized data for AI-driven research and the value of documenting both successes and failures in nature-based solutions.

Mapping Hub for Nature-Based Research

Brad and X discussed the development of a mapping and reporting hub for researchers, focusing on the utility of map-based data for X's field-based research. X emphasized the importance of soil, climate, and plant data for nature-based solutions, highlighting the need to understand regional applicability and sustainability. They explored how such data could support research by providing insights into similar ecosystems and informing the design of nature-based solutions across different regions.

Interviewee Y

Professor, School of Environment and Natural Resources, Interests & Expertise: Soil Management; Soil Science Education; Animal Waste Management; Urban soil; Urban agriculture

Nature-Based Urban Resilience Grant

Brad and Y discussed a grant proposal focused on nature-based solutions to increase the resilience of cities. Y emphasized the importance of addressing community infrastructure, particularly stormwater management, to align with municipal budgets and resident concerns. They highlighted soil health as a key area for research, considering both contamination issues and soil compaction in urban areas. Y also stressed the role of carbon management in improving soil structure and reducing stormwater runoff.

Urban Land Management Challenges

Y and Brad discussed the challenges and opportunities in urban land management, focusing on soil health, land utilization, and reconnecting urban dwellers with the land. Y highlighted the contrast between engineering goals for construction and biological goals for land enhancement, emphasizing the need for a patchwork approach to urban development that balances ecological and social needs. They also touched on the historical conversion of prime farmland to urban areas and the potential for nature-based solutions to address environmental challenges in cities.

Synthesis Centers for Research Collaboration

Brad and Y discussed establishing synthesis centers for researchers to collaborate and develop interdisciplinary research questions. They agreed that bringing people together in person, like at the National League of Cities meeting, is valuable for exchanging ideas and building relationships. Y emphasized the importance of having a mix of researchers, practitioners, and city planners to inform research questions and facilitate funding opportunities. They also discussed the need to incentivize researcher participation, including financial support and the promise of future funding opportunities.

Nature-Based Solutions Impact Assessment

Y outlined the key objectives for a 5-year project focused on nature-based solutions for urban challenges. They emphasized the need for documents that can communicate the project's value at federal, state, and local levels, highlighting its relevance to urban and peri-urban populations. After two years, Y wants to see a tangible document showcasing the project's impact, while after five years, they envisions a multi-state assessment of the project's nationwide impact, including cost-benefit analyses and co-benefits of nature-based solutions.

Urban Advocacy and Research Funding

Y and Brad discussed the challenges of advocating for urban issues compared to agricultural interests, highlighting the lack of a dedicated commodity group for urban concerns. Y emphasized the importance of presenting clear metrics to justify the value of investments in research and education, such as securing external funding and supporting state legislators. They agreed on the need to demonstrate the impact of NSRPs in terms of securing grants, training students, and publishing research to justify their renewal.

Research Repository Collaboration Initiative

Brad discussed creating a research repository to promote discovery and collaboration, sharing documents, results, and tools for integrating data and maps. Y expressed support for sharing research results, emphasizing that much of his work is publicly accessible, especially if funded by taxpayers. They suggested using such a tool for background information when working in unfamiliar areas or for general data comparisons across regions. Brad proposed a mapping tool with thousands of data layers, and Y confirmed this would be useful for his work. No major concerns were raised about the project's viability, and Y expressed his support for the initiative.

Urban Agriculture and Ecological Solutions

Y and Brad discussed the challenges of urban agriculture and ecological solutions in densely populated areas. Y emphasized the need to balance ecological ideals with practical realities, noting that organic farming alone cannot feed the world's population due to insufficient natural resources. They agreed that while urban agriculture cannot meet city food demands, it can contribute to broader benefits like economic streams and co-benefits beyond food production.

Interviewee Z

Professor, Urban Food Production, Postharvest Handling, Department of Horticulture and Natural Resources; Director of the Urban Food Systems Initiative

Grant Planning for Research Support

Brad and Z discussed a grant aimed at supporting research activities rather than conducting research directly. Brad explained that the grant would help make certain activities useful for researchers like Z, and he sought their input on what activities would be most beneficial. He compared the grant to an NSF collaborative network, emphasizing that it is still in the planning stages and they are gathering diverse perspectives to inform its development.

Urban Agriculture for Resilience

Brad and Z discussed nature-based solutions for urban resilience, with Z focusing on urban agriculture as a key area. They explored how urban agriculture could contribute to water storage, food security, and education, while also addressing challenges such as transportation efficiency and cost-effectiveness. Z identified three main research areas: defining urban resilience, improving food transportation within cities, and evaluating the economic viability of urban agriculture for both producers and consumers.

Synthesis Centers for Research Collaboration

Brad and Z discussed establishing synthesis centers for researchers to collaborate on research questions beyond specific disciplines. Z emphasized the importance of a shared vision, funding, and support for grant submissions to bring people together. They explored potential outcomes for a 2-year project, including preliminary data for larger grants and identifying correct team members. For a 5-year grant renewal, Z suggested measuring success through return on investment, successful proposals, and adapting to new funding agents. Both agreed that metrics for renewal would likely include money and publications.

Research Impact and Data Accessibility

Z and Brad discussed the importance of identifying and measuring impact in research, including changes in knowledge, behavior, and situations. They explored the potential of a research repository to promote discovery and collaboration, with Z emphasizing the need for user-friendly organization and accessibility. Brad inquired about Eleni's anticipated use of geographically referenced data layers, to which Z responded that usage would depend on the message they wishes to convey. Z expressed interest in having baseline data on food losses, highlighting the difficulty in accurately measuring this metric, and suggested the need for standardized methods to assess contributions in research.

Urban Agriculture Engagement Strategies

Z and Brad discussed the challenges of engaging a diverse group of people in discussions about urban agriculture and post-harvest physiology. They explored the possibility of using horizon scans as a mechanism to gather input from a core group while allowing for digital engagement from others. Z expressed concern about the viability of projects based on nature-based solutions in cities, citing the need to align priorities with the current administration's funding priorities.