

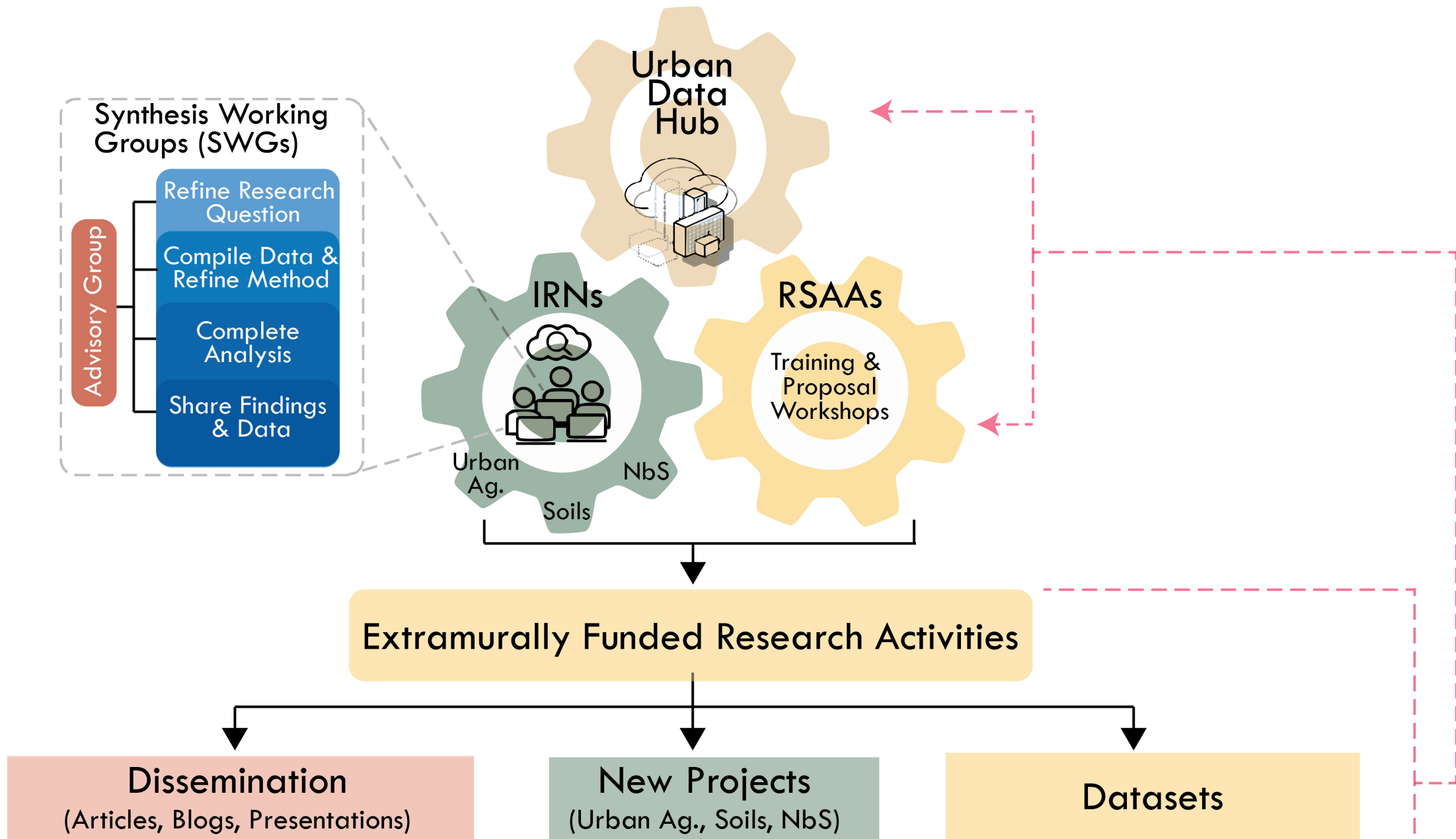


# **National Urban Research & Extension Center**

## **Building Integrated Research Networks to Advance the Conduct and Application of Science with Urban Communities**

NRSP 12 Regional Committees





# Key Revisions

- Framed as **Research and Synthesis Network**
- Budget Refinements
  - \$360,000 in seed and travel grants for participants
  - 12 9-month graduate Research Assistantships (~\$320,000) supporting 12 major synthesis efforts over 4 years
- More clearly articulate **impact metrics, evaluation methods**, and year 2 metrics
- Better articulated **expertise and previous success** of project team members
- **Core research participants/leads are active researchers** in urban agric, soils, food systems, nature-based solutions, and landscape architecture
- **30 Letters of Intent to Engage**
  - 24 university based
    - 9 faculty
    - 15 Centers / Institutes / Departments
    - Represent all 4 AgIn geographical regions



# Objectives

## Build Integrated Research Nodes

- Urban agriculture Systems
- Urban Soils
- Nature-based solutions

## Synthesize Knowledge

- Synthesis Working Groups (SWGs) to address specific, compelling research questions with existing data to support regional generalizability, resolve contradictions, and create new insights.

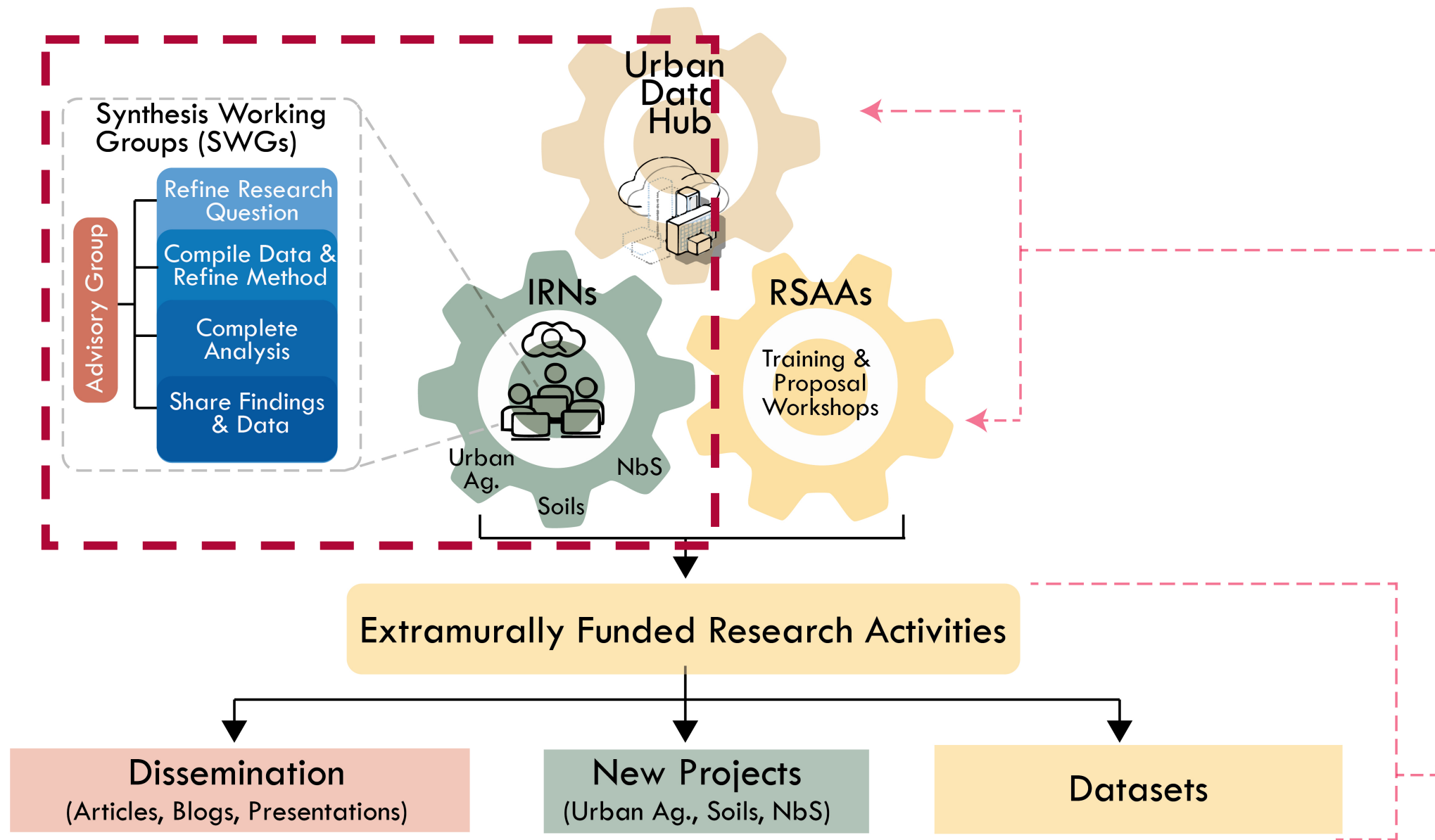
## Accelerate New Research

- Workshops use SWGs and Urban Data Hub to focus needed research

## Communicate Outcomes

- Website, professional meetings, Urban Data Hub, Customer-Relation Management platform





# Rationale for IRN Priorities

- Fragmented data systems
- Lack of generalizability between studies and across IRN topics
- Limited cross-institutional collaboration
- Misalignment between research outputs & municipal needs

Our proposal responds by:

- Creating Research Synthesis and Acceleration infrastructure
- Standardizing indicators
- Aligning science with municipal decision-making

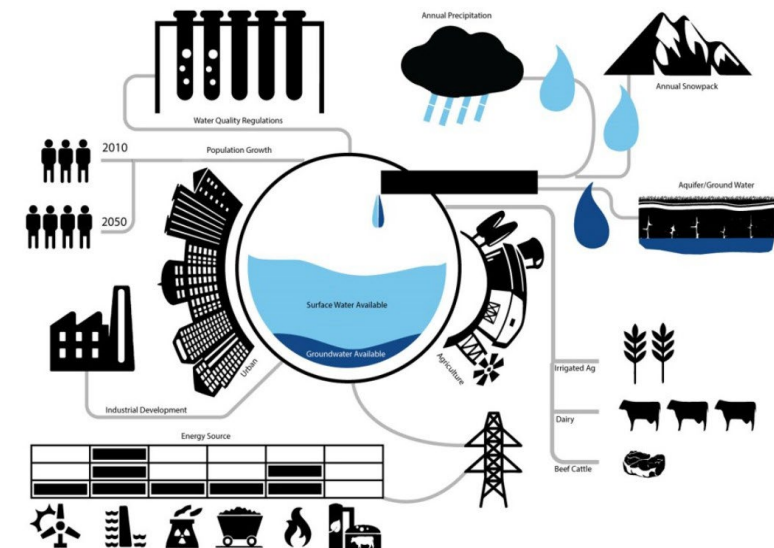


# Priority 1: Urban Agriculture Systems

- Evaluate Controlled Environment Ag (CEA), Building Integrated Ag (BIA), agrivoltaics tradeoffs
- Contamination + land access challenges
- Quantify climate mitigation potential
- Link food security to economic and ecological performance
- Integrate AES and LTAR participation

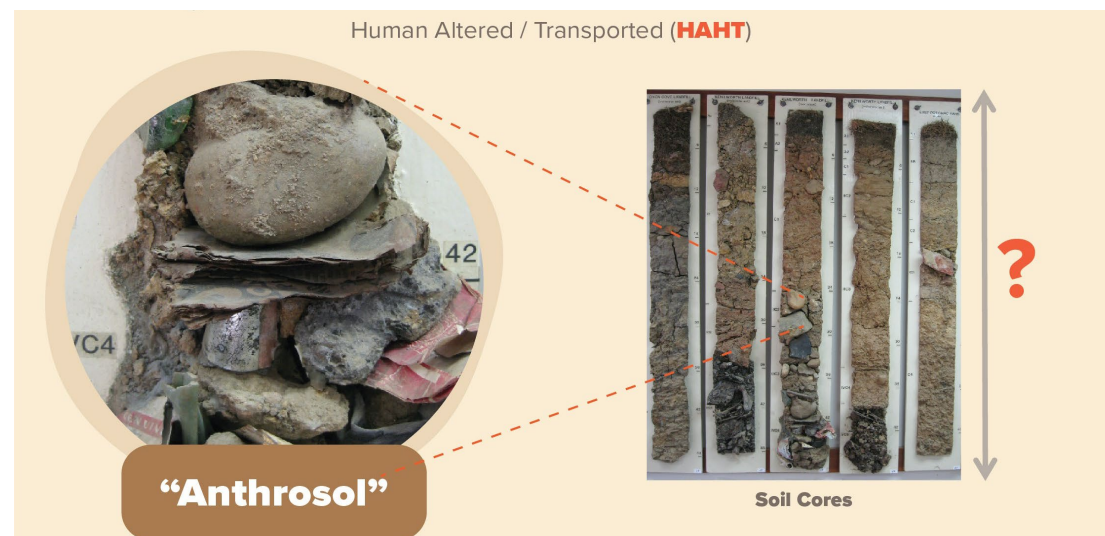
## Response to Review:

Building from all of the above bullet points an emphasis on answering questions relevant to increasing production and profit



# Priority 2: Urban Soils

- Understanding & Classification of Urban Soils; Assessment of Key Performance Indicators associated with Soils and Ecosystem Services
- Develop performance metrics (infiltration, nutrient retention, contamination)
- Integrate soil science + public health + infrastructure
- Enable cross-city, cross-region comparisons through Data Hub



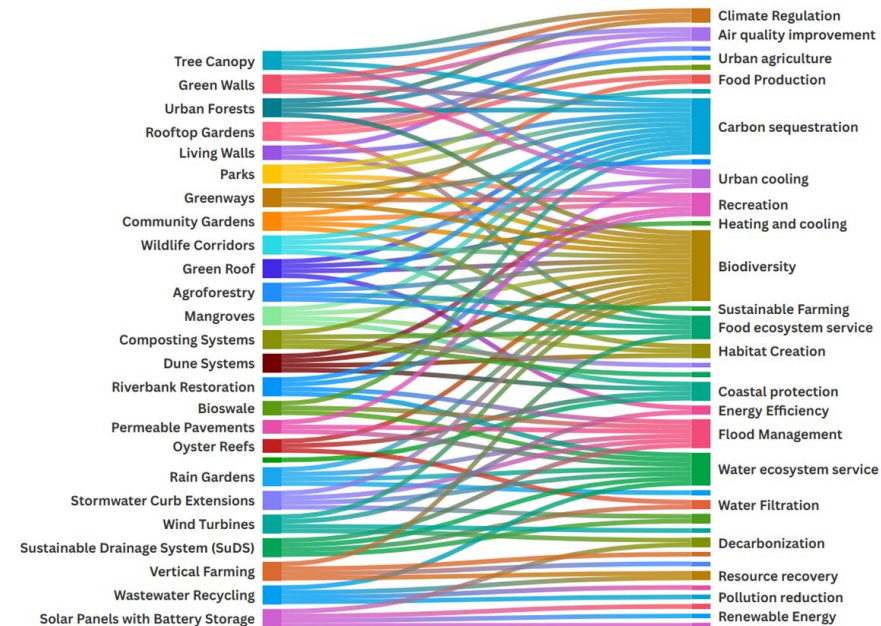
Source: National Park Service, Center for Urban Ecology



# Priority 3: Nature-based Solutions

- Develop common indicators (thermal regulation, biodiversity, stormwater)
- Evaluate decentralized vs centralized infrastructure tradeoffs
- Address unintended consequences (maintenance burden)
- Align with municipal climate resilience planning

**Response to Review:**  
Clear metrics + national comparability framework added this year.



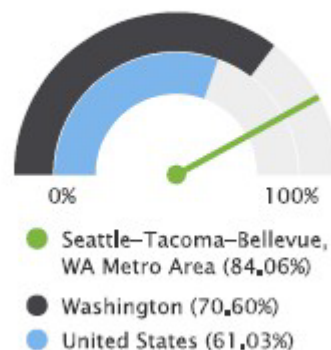
Source: Elyse Blondell, NUREC



# Urban Data Platform

- Free-of-charge access
- Regular training on how to use and contribute to the Hub
- Integrates fragmented datasets
- Establishes standardized metrics and metadata protocols
- Supports collaboration across land grant universities and partners
- Serves as a national urban research atlas and evaluation platform

Tracking Network. 2020. → Show more details  
Percent Population Within 1/2  
Mile of a Park



## Park Access

This indicator reports the percentage of population living within 1/2 mile of a park. This indicator is relevant because access to outdoor recreation encourages physical activity and other healthy behaviors.

Report Area	Total Population, 2016-20	Population Within 1/2 Mile of a Park	Percent Within 1/2 Mile of a Park
Seattle-Tacoma-Bellevue, WA Metro Area	3,928,498	3,302,260	84.06%
King County, WA	2,225,064	2,071,534	93.10%
Pierce County, WA	891,862	608,249	68.20%
Snohomish County, WA	811,572	622,475	76.70%
Washington	7,512,465	5,303,800	70.60%
United States	326,569,308	199,317,503	61.03%

Note: This indicator is compared to the state average.

Data Source: Centers for Disease Control and Prevention, CDC - National Environmental Public Health



# Revisions from Peer Review

## Explicitly Centered Food Production

- Clarified Urban Ag as a production system with distinct research needs
- Removed language implying ecosystem services alone address food insecurity
- Emphasized yield, distribution systems, and economic viability

## Strengthened Agronomic Research Priorities

- Scalable nutrient management for urban soils
- Urban-adapted Integrated Pest Management (IPM)
- Irrigation efficiency under urban heat conditions
- Production-specific technologies (CEA, rooftop, soil-based systems)
- Yield, profitability, and crop/cultivar performance in urban contexts



# Revisions from Peer Review (cont.)

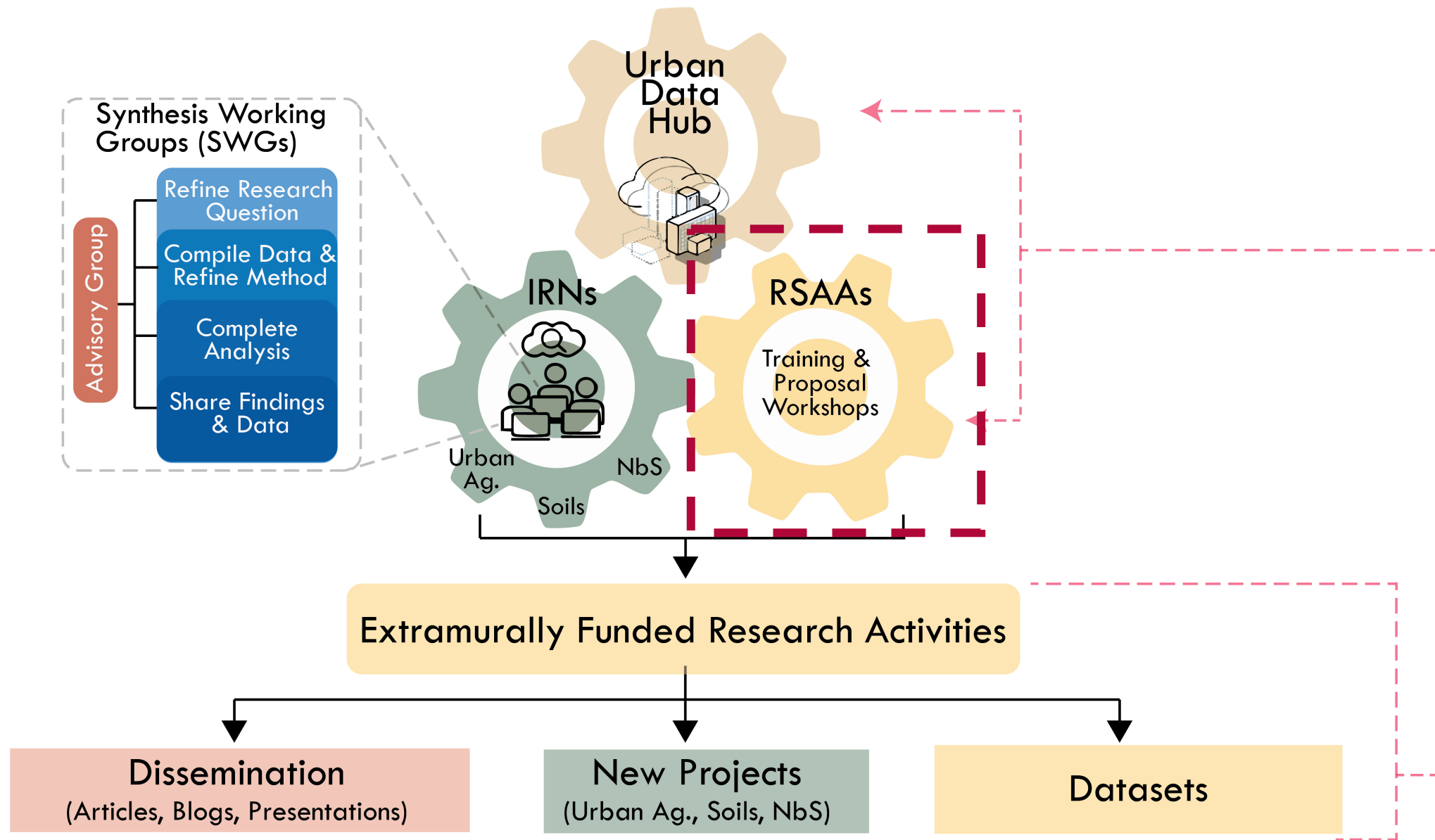
## Addressed Food Access & Distribution

- Recognized that presence of farms ≠ improved food security
- Added research emphasis on:
  - Post-harvest systems
  - Market integration
  - Supply chain pathways
  - Economic feasibility for growers

## Strengthened Research–Extension Linkages

- Acknowledge Extension gap for urban food producers
- Clarified role of NRSP in supporting production-focused urban growers
- Alignment with LTAR datasets and applied research pathways





# Research Synthesis & Acceleration Activities

To tackle broader urban challenges, our goal is to support an innovative and inclusive set of activities that work within each IRN to *build* and *grow* expertise and *share* knowledge.

Building  
Networks

Synthesizing  
Knowledge

Accelerating  
Research

Communicating  
Outcomes

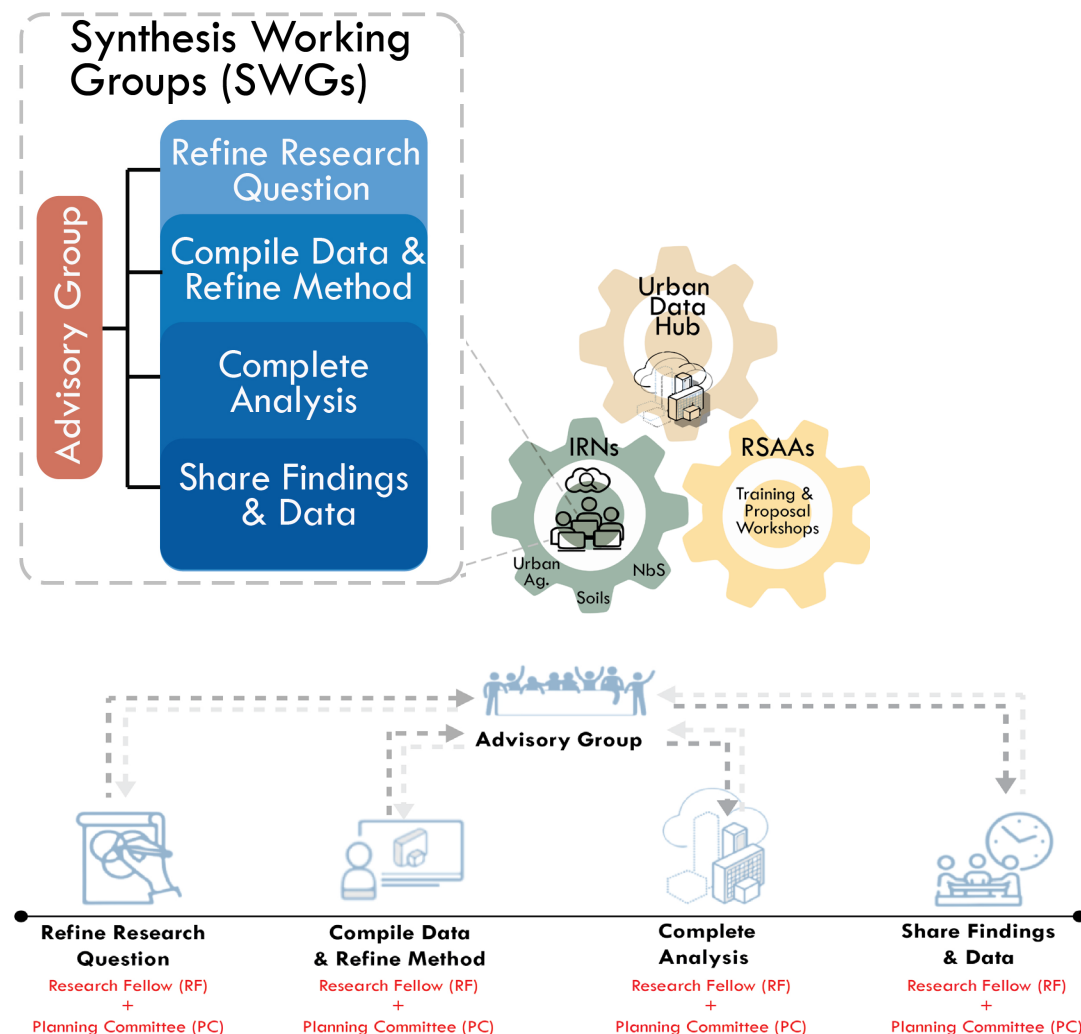


# Synthesize Knowledge

**Response to Review:**  
Structure and purpose of  
SWG's more clearly defined

## • Synthesis Working Groups

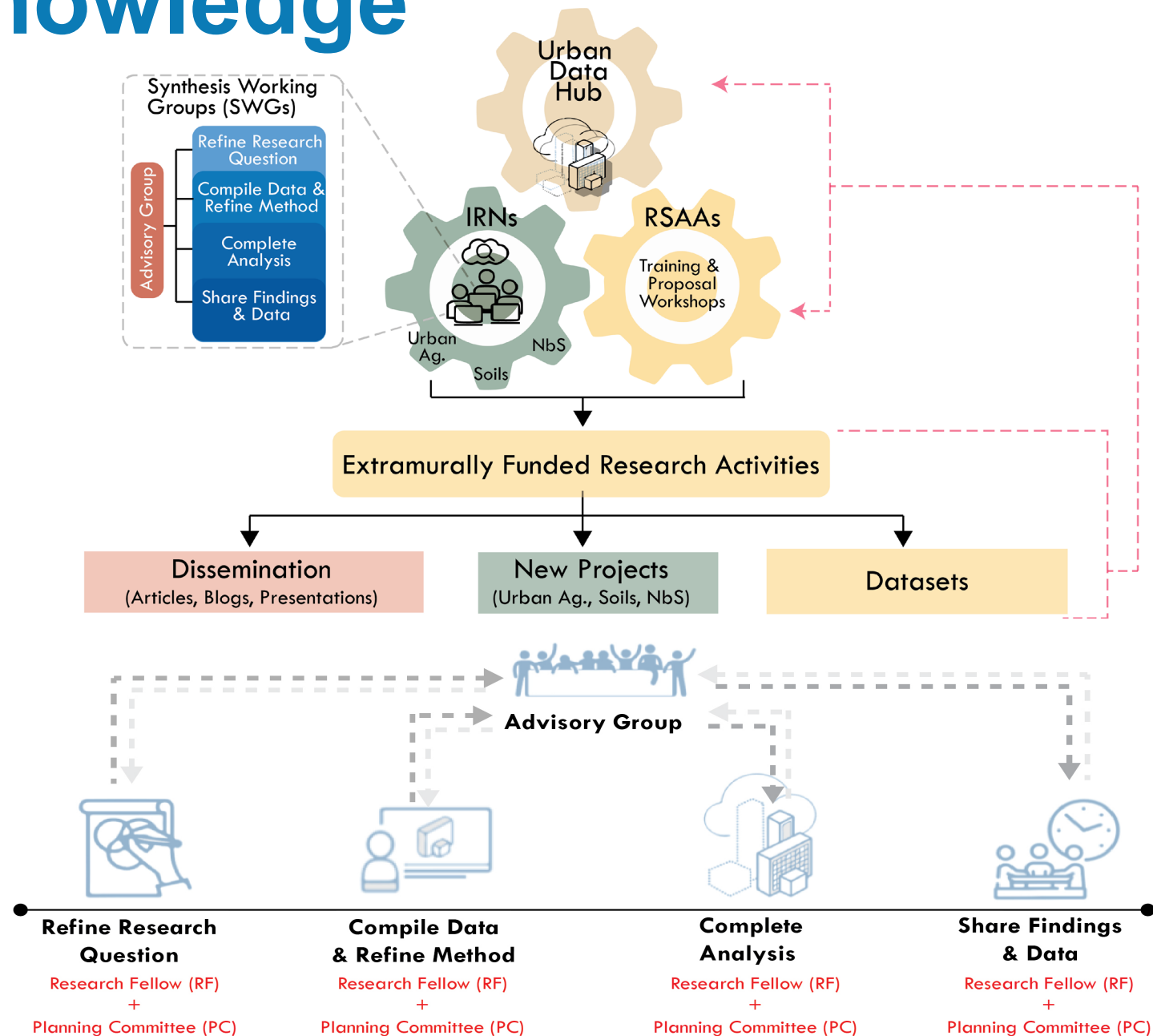
- Prioritize a specific focal area that is data-rich, but under-synthesized, from each IRN. Three run in parallel each year (Yrs 1-4).
- Working group that brings together researchers with complimentary datasets to answer a broader question.
- **Led by a Research Committee, supported by a Research Fellow and Advisory Group.**
- Culminate in a multi-day workshop to review results, update Data Hub, and draft publications and outreach materials



# Synthesize Knowledge

Each IRN hosts one of the synthesis working groups each year, so 3/yr and each gets one Fellow.

It's in essence like research seed grant.



# Accelerate New Knowledge

- Proposal Development Workshops
  - Virtual workshops based on successful models used in the past
  - Multi-phase approach:
    - Identify key questions and build teams
    - Develop compelling questions & approaches
    - Friendly, expert reviewer feedback before submission
  - Office hours



*Gather platform was successfully used by Gaolach, Padowski, and O'Rourke to host a virtual urban ag proposal dev. Workshop for >200 participants in 2024*



# Accelerate New Knowledge

**Response to Review:**  
More funds allocated to  
Seed Grant opportunities

- Seed Grant Opportunities
  - Prioritize and support new research in key IRN areas
  - Two awards per year (\$30k each), open to all network members
- Travel Grant Opportunities
  - \$2,500 awards to support in-person connections to advance IRN research ideas
  - ~ 4 awards per year, open to all network members



# Communicate Outcomes



- Support to regularly update NUREC website
  - Share mission and goals
  - Announce news, opportunities, and activities
  - Link to Urban Data Hub platform



- Leverage existing resources
  - Coordinate to get information, data, and outputs to decision makers and practitioners (e.g. NUDEL, NLC, NACo and others)
  - Limited funding support for peer-reviewed publication costs



- Urban Data Hub platform
  - Easy access to datasets, papers, other products
  - Customized tools for academic and non-academic needs



# Business and Operating Plan

## NRSP Core

- Project leadership
- IRN leads
- Professional Development team
- Urban Data Hub team
- External Evaluator
- Advisory Committee
  - agInnovations West
  - Dir of Research – National League of Cities

## NRSP Participants

- SWG Graduate Research Fellows (RAs)
  - 3/yr; 9-month 0.5FTE
- Seed Grants
  - 10 grants @ \$30,000 ea
- SWG Workshops
  - 3/yr for 25 attendees ea
- Travel Grant Awards
  - 24 @ \$2,500



# Business and Operating Plan

## Long-term Business Plan

- NUREC is long-term home for operations and management
  - NRSP funded activities / opportunities will be available to ALL regardless of membership in NUREC
  - similar to Extension Foundation: set of free and member-based activities
- NUREC is evolving into Research & Extension Consortium
  - Attract Consortium membership and funding beyond LGU/Extension
- Building a research & funding stream to serve the National League of Cities



# Intended Audiences

- **Scientific community:**
  - land-grant universities;
  - urban serving universities;
  - local, state, federal, and tribal governmental agencies.
  - This would include graduate students and postdoctoral researchers and fellows.
- **Policy makers:**
  - local, state, federal, and tribal governmental agencies and
  - their associated organizations such as the National League of Cities as a conduit to their members nationally
- **Extension and other practitioners:**
  - local, state, and national levels;
  - local non-governmental organizations who may access or benefit from the research through their local Extension offices.



# Questions?



# Why a National Research Support Project

## Urban Environments

- Complex systems
  - Human (including political)
  - Natural Environment
  - Built Environment
- Dense populations
- Result: interdependent social, ecological & technological relationships

## Response Requires

- Tailored approaches that account for complexity
- Sensitive to those diverse systems
- Promote meaningful partnerships versus extractive research and practices



# Impacts

## University

- Attract funding from municipalities, federal and state agencies, businesses, and others.
- Provide opportunities for faculty & students to address real-world challenges.
- Conduit between the University and the community.
- Support community engagement.
- Access to expertise not available.

## Research Faculty

- Identify collaborative research partners.
- New funding opportunities to support research and graduate students.
- Improved ability to conduct applied and translational research
- Tangible Impacts
- Scholarly products.



# Addressing National Issues

## National Issues

- Food security & sustainable food systems
- Health & wellness disparities
- Infrastructure & land use
- Climate change adaptation & mitigation
- Systems thinking
- Policy, systems, & environment (PSE) change

## Identifying Research Priorities

2024 – convening in DC at National League of Cities

- 43 individuals from federal agencies, local government, research, and extension identified:
  - 59 Research needs
  - 149 short, medium, and long-term outcomes
  - Additional cross-cutting observations and opportunities

6 Research & Extension prospectuses  
(16 individuals)



# Support for Current Research

## Hatch Funded Projects (Active FY 2019 through 2026)

### Keyword “Urban” - 21 Projects

- Community-based urban agriculture: infrastructure, design and management (de la Pena – CA)
- Urbanization and Anthropogenic Impact on Natural Resources and Water Systems (Hargiss – ND)
- Decoding Urban Soil Landscapes – A Framework for Improving Ecosystem Services (McSweeney – IL)

### Keyword “Cities” - 5 Projects

- Conserving and Creating Bird Habitat in Cities (Hostetler – FL)
- Urban Tree Ecosystem Services, Disservices, and Net Benefits (Koeser – FL)
- Water systems modeling for holistic water management in arid region (Saurav – TX)



# Hatch Funded Projects (Active FY 2019 through 2026)

## Keywords “Child Family Health” – 12 projects

- Neighborhood Risk, Paternal Parenting, and Early Childhood Outcomes (Yildirim – AL)
- The implications of stress for wellbeing in diverse families (Hibel – CA)
- Dynamic associations between children’s outdoor experiences, physical health, and school readiness (Schmidt, IN)

## Keywords “Youth Development” – 13 Projects

- Assessing youth development in 4-H: Exploring mediating and moderating, context-based processes in the elicitation of positive youth outcomes (Fogerty, FL)
- A Trauma-Informed Approach to Improving the Health and Well-Being of Children and Families (Stanton, MS)
- Examining Substance Use among Young Indiana Adolescents (Ruiz, IN)



# Why a National Research Support Project Focused on Urban?

Profound Demographic Changes since the Land-grant system was developed

# Why an Urban National Research Support Project Focused on Integration?

25% of USDA Hatch Funds and 25% of Smith-Lever funds must be spent on Integrated (Research and Extension) activities

