**Key Issue #6: Expanding and Targeting Urban and Community Forestry Research**

Expanded research was cited as both an area of progress in the last decade and also a strong continuing need in the next ten years. Thought leaders noted three primary needs around science and research: 1) validating and replicating research, 2) creating value-added research – conducting research in areas it is most needed, and 3) science delivery – how to use the science and make it accessible and relevant to leaders in community groups, municipalities, and across sectors and agencies. Areas of urgent research needs were suggested in both technical and human arenas, such as improved soil tree pit design for UCF sustained health, climate change impacts, regionally-adapted biodiverse plant species, and replication and expansion of existing studies about psycho-social impacts on human health and safety. The delivery and accessibility of research continues to be a challenge, so a priority for the next ten years is to develop ways to make research results relevant and accessible to community members and professionals.

> **IDEAS FOR ACTION - Gaps, Needs, Opportunities**
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> - Conduct further social research on understanding potential human health benefits, including economic benefits of UCF, in a more comprehensive and sustained manner. Other research needs include:
>   - Conduct more core base research into UCF benefits, to answer simple questions such as "what do birds eat?" which are critical yet little understood.
>   - Connect UCF design, placement, and management strategies with Best Management Practices identified in existing and emerging research.
>   - Conduct research on the barriers to entry into the UCF field and how to reduce them for young people entering the arboriculture and urban forestry profession.
>   - Conduct research on UCF in tropical regions; build on and expand past collaborative research agendas such as a past NUCFAC meeting in Puerto Rico.
>   - Expand the availability and accessibility of data and research related to the psychological, health, an ecological benefits of UCF.
> - Conduct more technical long-term studies to address the effects of climate change planning on a ten, 20, to 30-year horizon instead of only a six to 12-month horizon.
> - Gather and utilize data for urban tree canopy assessments; develop a national protocol for how to utilize UTC data nationwide.
> - Make research and data accessible to community members, advocates and practitioners so they can regularly utilize it. For example, i-Tree tool data should be able to be shared among different agencies and NGOs within a municipality.

- Increase the number of UCF researchers within the USFS. For example, there are 273 scientists in the USFS but only seven are urban forest scientists. *(Related to Key Issue 14 as well.)*

- Connect research efforts by different federal agencies that have urban forests programs to leverage dollars, and to thereby enable more difficult research into causation rather than correlation.

- Utilize social media in research to gather information from the community of practice and from the general public, being mindful of using appropriate protocols to ensure quality and reliable citizen-collected data. For example, it should be possible to use trained volunteers to help count ash trees in communities, monitor those trees for Emerald Ash Borer, and upload data via a smart phone app.

- Develop an "i-Tree Anthro" to quantify the human health benefits of trees; this could open significant possibilities for potential increased awareness and funding.