UNIVERSITY OF ILLINOIS EXTENSION 4-H STEM PIPELINE: THE 4-H AGRICULTURE & ENGINEERING CHALLENGE

4-H is the flagship youth development program for the College of ACES and the University of Illinois Extension. For over 100 years, 4-H has served as a critical pipeline for preparing youth ages 8-18 for agriculture and STEM (Science, Technology, Engineering, and Mathematics) careers. As new technologies continue to evolve, the gap is broadening between the demand for workers in agriculture-related fields and the pipeline of qualified candidates to fill those positions. The Illinois 4-H Youth Development Program has a unique opportunity to engage the bright minds of youth from across rural and urban communities in Illinois. The 4-H Agriculture & Engineering Challenge will bring together junior and high school youth, with higher education and corporate mentors, to investigate and solve today’s challenges in agriculture. This real world learning opportunity will help youth build skills and knowledge critically needed in a rapidly changing workplace.

OPPORTUNITY:

4-H plays an essential role in filling out-of-school time with goal-focused learning opportunities that engage youth in mentoring relationships, hands-on learning and opportunities to apply what they are learning within meaningful, community-centered activities. The University of Illinois Extension 4-H pipeline of experience is designed to spark and maintain STEM interest from an early age, strategically adding age-appropriate challenges and opportunities as youth grow older. As teens, youth are beginning to identify career interests and making plans for post-high school. It is at this critical time that we have the opportunity to engage their talents and to broaden their awareness of future career opportunities as they relate to agriculture. The 4-H Agriculture & Engineering Challenge creates a space for collaborative activities anchored in real-world problems that will help youth build skills needed to fill Illinois jobs, and to keep the field of agriculture on the cutting edge of innovation.

The 4-H Agriculture & Engineering Challenge targets youth ages 13-18 from rural and urban communities across Illinois and includes the following components:

• An online, multimedia database of learning resources that include examples of contemporary needs in agriculture, examples of research-informed STEM innovations within agriculture, and related careers that bridge urban and rural communities.
• Small groups of youth working with corporate and higher education experts to develop responses to agriculture-related issues they have identified in their communities.
• High tech “maker” hubs strategically placed around the state with partnership groups (e.g. schools, libraries, YMCAs) to provide youth equitable access to innovative technologies for invention, prototyping and experimentation.
• Three regional showcase events that provide an opportunity for small groups to share emerging work and receive feedback within an intentional climate of diversity, creativity and innovation.

University of Illinois Extension
College of Agricultural, Consumer and Environmental Sciences
A culminating showcase, 4-H Agriculture & Engineering Challenge, hosted by the College of ACES at the University of Illinois, Urbana-Champaign campus. This showcase would occur in conjunction with the existing Illini Summer Academy program in which teens (13-18) explore future fields of study through an on-campus experience.

A credentialing system that allows youth to track their activities and to have them validated by experts, creating an online portfolio for use in future college and career applications

RESOURCES REQUIRED:

University of Illinois Extension 4-H has an existing network of over 140 staff and over 20,000 volunteers. 4-H is in every county in Illinois and is represented in both rural and urban communities. The recruitment and support of the 4-H Agriculture & Engineering Challenge will be supported by this rich network of youth professionals. The additional program elements needed to fully implement this program will require funding to be allocated toward the following:

1. Online, multimedia database of learning resources, regional/state showcase platform and credentialing system.
2. A new 4-H corporate and higher education partnership coordinator to identify opportunities for collaboration and steward relationships related to youth-adult partnerships around agriculture-focused innovation.

Contact
JENNIFER SMITH
Assistant Director of Development
jlsmith8@illinois.edu
217-333-9355

Contact
ANGIE BARNARD
Executive Director
Illinois 4-H Foundation
abarnard@illinois.edu
217-333-9295