



May 4, 2021

To: NIFA Farm of the Future Listening Session

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The Weed Science Society of America (WSSA) appreciates the opportunity to comment on the initiative to establish a Farm of the Future testbed and demonstration site at a Land Grant University. The WSSA is a non-profit scientific society that promotes research, education, and extension outreach activities related to weeds; provides science-based information to the public and policy makers; and fosters awareness of weeds and their impacts on managed and natural ecosystems.

The Weed Science Society of America has identified precision technologies for weed management as a high priority for research. We see opportunities for major advancements in the development of intelligent weeding systems that combine 1) reliable and efficient real-time discrimination of weeds and crops under diverse field conditions with 2) precision removal of individual weeds using a spot-treatment herbicide application, mechanical removal or other alternative weed control tools such as lasers. We see many potential benefits of these technologies including:

- Reduced input costs
- Greater weed control efficacy and selectivity
- Improved profitability
- Reduced risk associated with herbicide off-target movement
- Reduced soil erosion and runoff associated with excessive mechanical cultivation
- Increased soil carbon sequestration due to less soil disturbance
- New tools for managing herbicide-resistant weeds
- New tools for managing weeds in organic production systems

Major advances in intelligent weeding technology will require collaboration among weed scientists, mechanical engineers, computer scientists and others. Federal funding at a Land Grant University focused on the advancement of this technology would greatly accelerate the development and deployment of innovative intelligent weeding systems and potentially lead to a new era in weed management in U.S. agriculture.