Although scientific research tends to be incremental and intentional, occasionally a groundbreaking insight or discovery dramatically changes the scientific landscape with a more comprehensive and accurate view of the natural world. The National Academies of Science, Engineering, and Medicine have launched a study, Science Breakthroughs 2030, to identify questions, ideas, and technologies that will accelerate discoveries and lift food and agriculture research to the next level. We encourage all of our members to be fully engaged in this process.

Our agronomy, crop science, and soil science disciplines are fundamentally important to food security, environmental sustainability, and economic and political stability. Despite their importance, these areas of study receive relatively little attention or funding. Incredible ideas that are potentially risky or expensive, even if they could lead to groundbreaking tools or insights, are often left on the table.

Some great scientific discoveries are serendipitous, but many others are the direct consequence of a clearly defined need. For example, the need for a sequenced human genome spurred an investment in sequencing technologies that reduced costs by several orders of magnitude. Low-cost sequencing has opened doors not just for human medicine but for all branches of life science.

The National Academies is kick-starting this kind of need-based “big” thinking in the food and agricultural sciences that is regularly seen in medicine and in Silicon Valley. To that end, they have assembled a committee to identify the greatest challenges facing agriculture in the coming decades and to determine the knowledge, tools, and technologies necessary for scientists to solve these challenges.

The committee is looking for the next big idea, that one essential thing that would help solve the most intractable food and agricultural problems facing the world? Submit it to https://ideabuzz.com/a/buzz/nasem/science-breakthroughs-2030.

Agricultural breakthroughs are needed to sustainably feed and clothe humanity, provide energy, and protect the environment for our growing population. Our engagement will lead to investments and breakthroughs that will enable us to meet the challenges laid at our door.

E. Charles Brummer, CSSA president; Jessica Davis, ASA president; Andrew N. Sharpley, SSSA president; and Ellen Bergfeld, CEO, and Karl Anderson, director of government relations for ASA, CSSA, and SSSA