Over the past 20 years, a technological revolution has been taking place on farms across America. Tractors, combines, and other field equipment utilize global positioning systems (GPS) to improve seeding and application accuracy and efficiency. Sensor technology is making it possible to gauge plant vigor and make fertility decisions on the go, improving nutrient application accuracy. And geographic information systems (GIS) provide the backbone for the collection and analysis of field data and crop yield, enabling farmers and their trusted advisers to develop the best possible cropping plan.

These technologies allow farmers to engage in what is known as precision agriculture. Precision agriculture uses many modern farming practices to make production more efficient. Growers are able to take large fields and manage them as though they are a group of small fields. This reduces the misapplication of products and increases crop and farm efficiency.

An important but underappreciated fact is that many of the advancements used in precision agriculture—GPS, GIS, and sensor technologies—were made possible by foundational technologies developed through federally funded research. It’s a story that our members are probably familiar with, but many members of Congress might not know. That’s where our Societies come in.

**Precision Ag Congressional Reception**

On 4 March, ASA, CSSA, and SSSA partnered with the Task Force on American Innovation and the Congressional Soils Caucus to present “Deconstructing Precision Agriculture,” a congressional reception designed to demonstrate the importance of three essential technologies of precision agriculture that originated from a broad spectrum of federally funded science: guidance systems and GPS, data and mapping with GIS, and sensors and robotics.

Hosted in the Agriculture Committee Room at the Longworth House Office Building, the event drew more than 75 Beltway-based legislative professionals, who engaged with experts and innovators from each area of focus. For each technology, a farmer, a representative from an agriculture technology company, and a scientist described how they worked together to fuel U.S. innovation and the economy.

The speakers from each panel were able to share their stories to illustrate how these technologies are applied in real field conditions.

ASA, CSSA, and SSSA member Raj Khosla, professor of agriculture at Colorado State University, a world-renowned expert in sensor technology, moderated presentations. Each panel revealed the strong connection between government research initiatives and advanced agriculture practices. “Precision agriculture is not rocket science, but we employ the fruits of rocket science to make agriculture more productive,” Khosla noted in his remarks.

In his presentation, professor and ASA, CSSA, and SSSA member William Raun, discussed how early passive sensor technology was further developed at Oklahoma State University into active sensors, capable of creating their own light and of capturing information about plant health. The Greenseeker plant health sensor, now manufactured by Trimble, is the commercial manifestation of this research.

These are just a few examples of the connection between basic research and field applications that make agriculture more efficient and productive. By working with our scientific, industry, and congressional partners here in Washington, DC, ASA, CSSA, and SSSA can help tell the story of the importance and impact of federally funded research.