

Supporting the Microbial Sciences in Agriculture

ASM supports robust investments in research and innovation that leverage the promise of the microbial sciences to meet and guide growing global demands for food and energy while mitigating the impact of climate change.

Microbiology Research and Applications in Agriculture

The essential contribution of microbes to human and animal health, environmental resilience and agricultural productivity are only beginning to be widely recognized. Microbiology can provide a deeper understanding of the trillions of microorganisms in our environment and inform new tools that maximize production, support soil, plant and animal health.

Increased understanding of plant, soil and animal microbiomes can:



-  **Improve** the safety of our food supply.
-  **Boost** crop productivity.
-  **Significantly** improve animal, soil and plant health.
-  **Improve** water quality and reduce negative impacts from climate change.
-  **Deliver** stable and long-lasting disease control in agricultural production systems.

The National Academies of Science Engineering and Medicine released a report in 2019 that identified 5 breakthrough opportunities that could dramatically increase the capabilities of food and agricultural science by 2030, along with recommendations to shift how the research community approaches its work and initiatives for each of the breakthroughs that will require robust support.

In particular, the report recommends further study of how the microbiome can influence crop production and efficiency and increase resilience. The report recommends that in order to have more productive and sustainable crop production systems; research must identify and harness the “soil microbiome’s capability to produce nutrients, increase nutrient bioavailability and improve plant resilience to environmental stress and disease.”

¹National Academies of Sciences, Engineering, and Medicine 2019. *Science Breakthroughs to Advance Food and Agricultural Research by 2030*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25059>.

As scientific understanding of microbes continues to advance, we call on Congress and the Administration to:



Invest in basic, translational and applied agricultural research and regulatory science that enhances the health of animals, plants, people and the environment. ;



Recognize the integral role that plant, animal, soil and water microbiomes play in a healthy and economic food supply and the environmental benefits of agriculture.



Fund programs that provide critical human resources and infrastructure needed to deploy new knowledge and technologies in the field.



Advance policies that foster a diverse agricultural workforce, such as AFRI's Foundational and Applied Science Program, which supports grants in 6 AFRI priority areas to advance knowledge in both fundamental and applied sciences important to agriculture.



Support a One Health approach to antimicrobial resistance.



Incentivize the translation of basic research to real world, scalable market-based solutions.



Promote research and policies that support environmentally sustainable agricultural practices and their deployment on environment lands.