

# Scientists appeal for ambitious microbiome study

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The Unified Microbiome Initiative Consortium (UMIC) aims to vastly improve research on microbiomes, whether they be in the soil, the water or the human gut

A group of 48 scientists from 50 US institutions Wednesday called for more ambitious research into the tiny microorganisms that play a huge role in health, energy and farming.

Known as the Unified Microbiome Initiative Consortium (UMIC), the

effort aims to vastly improve research on microbiomes, whether they be in the soil, the water or the human gut.

The project would uncover the role of individual microbes—which include fungi, bacteria, viruses, algae and more—and how they communicate with each other, their hosts, and their environment.

The US-based program would have a 10-year timeframe, and could be complemented by a European effort, [scientists wrote](#) in the journals *Science* and *Nature*.

"Over the past 20 years, new technologies have reshaped our understanding of the essential roles microbes play on our planet," said a statement by Miyoung Chun, executive vice president of science programs at The Kavli Foundation.

"A Unified Microbiome Initiative would develop the transformative tools and research teams we need to harness the power of these communities to improve human health, agricultural productivity, bioenergy production, and environmental stability."

There are believed to be 100 trillion microbes in the [human gut](#), and they are critical to health and development, but scientists are only just beginning to understand why.

Those calling for the new effort hail from the Department of Energy, national laboratories, universities and research institutions.

The group came together during a series of "coordinated but separately convened meetings held by The White House Office of Science and Technology Policy and The Kavli Foundation," said a statement from the Wyss Institute for Biologically Inspired Engineering at Harvard University.

"Technology has gotten us to the point where we realize that microbes are like dark matter in the universe," said Eoin Brodie, deputy director of the Climate and Ecosystem Sciences Division at the DOE's Lawrence Berkeley National Laboratory.

"We know microbes are everywhere, and are far more complex than we previously thought, but we really need to understand how they communicate and relate to the environment."

According to Jeff Miller, co-author of the Science paper and director of the California NanoSystems Institute, the initiative "might hold the key to advances as diverse as fighting antibiotic resistance and autoimmune diseases, reclaiming ravaged farmland, reducing fertilizer and pesticide use, and converting sunlight into useful chemicals."

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