

Prof. Michael Sadowsky
Director, BioTechnology Institute
Distinguished McKnight Professor
University of Minnesota
USA



Professor Michael Sadowsky, a fellow in the prestigious American Academy of Microbiology, is internationally known and respected for his research work in the area of environmental microbiology. He currently is co-director of the Microbial and Plant Genomics Institute. He has published more than 100 original articles, and his work is widely cited by researchers in several scientific disciplines. Prof. Sadowsky has an **H-index of 74**.

He is a renowned speaker and the author of more than 350 articles, and is currently Editor-in-Chief for Microbiology Spectrum ASM's newest journal. Dr. Sadowsky holds a PhD in Microbiology from the University of Hawaii and an MS in Microbiology from the University of Wisconsin-Oshkosh. He completed his Bachelor of Science with a major in bacteriology at the University of Wisconsin-Madison. He is a fellow in the prestigious American Academy of Microbiology and the American Association for the Advancement of Science.

Research efforts in his laboratory are directed towards several areas, all involving microbial ecology, genomics, environmental microbiology, and host-microbe interactions. A professor in the University's department of Soil, Water and Climate, department of Plant and Microbial Biology, and The BioTechnology Institute, Sadowsky has been studying the symbiotic relationship between leguminous plants and rhizobial soil bacteria. He has focused on a process called 'nodulation' by which bacteria form root nodules and help fix nitrogen in these plants, allowing them to thrive and reproduce in nutrient-poor soil in the absence of added nitrogen fertilizers. Sadowsky's research involving photosynthetic Bradyrhizobium bacteria was highlighted in Science magazine and his work has suggested that there are several ways that bacteria can form nodules in the symbiotic relationship, a finding with important agricultural implications.

He also has been using metagenomic analyses of the human GI tract, done using new DNA sequencing and computational methods, to provide valuable insights into host-microbe interactions, the microbial ecology of this complex ecosystem, and practical knowledge about how human GI tract microorganisms are related to human health. He has embarked on this new research area with the help and collaboration of Dr. Alex Khoruts and Dr. Byron Vaughn, practicing clinical gastroenterologists, to study *C. difficile* associated disease (CDAD). His expertise in genomics and human GI metagenomics complements strengths in clinical gastroenterology, human physiology, and mucosal immunology. This is an exciting new area of study for us, which has been very productive already and has great potential in developing new treatments for obesity. Lastly, he was the co-developer of modern fecal microbiota transplantation technology and has continued to use the method to treat a variety of diseases including CDAD, UC, and IBD.

Prof. Sadowsky's also has developed methods for determining sources of fecal bacteria in water have been widely published and received mention in an issue of Time magazine as a key contribution to environmental microbiology. The ability to distinguish the sources of fecal contamination is important both in assessing possible health risks and in facilitating effective clean-up strategies. Sadowsky is leading a group of researchers in the development of high-throughput and robotic methods of analyzing water, sand and sediment samples to determine sources of fecal bacteria.