



On the edge of ignorance

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After a slow start in the 1600 and 1700's, there has been an explosion of new information in the field of microbiology. Yet despite the discovery of DNA and gene regulation, the advent of molecular biology, and the newly fashionable "omics," we still have vast areas of ignorance. This lecture explores some of these. The number of foodborne pathogens has increased from three in 1920 to more than thirteen in 2015. Are there still more? How does the structure of spores determine their function? How do "good" bacteria have become pathogens? Why has the emphasis of food safety moved from meats to produce? How do bacteria age; become viable but nonculturable; form organized communicating communities; and function as organs within organs? These topics, and others yet unknown, are on the edge of our ignorance.