Donald Frank

August 14th 2017

BIO 101J

**Lab 8: Microbiology journal or magazine article**

**URL:** [**https://blogs.scientificamerican.com/oscillator/the-future-of-food-is-microbiology/**](https://blogs.scientificamerican.com/oscillator/the-future-of-food-is-microbiology/)

David Chang, founder of Momofuku restaurant chain, gives an informative lecture for Harvard’s Science and Cooking seminar. The theme of the talk is *The Future of Food is Microbiology.*

David highlights how microbial diversity is the key to unlocking new flavors in food. The Momofuku brand has created a lab that ferments foods naturally and through inoculation; as a result, Momofuku has teamed up with Harvard’s Microbiology department to screen and document the microbial discoveries. The goal is to create new flavors that can only be produced in East New York using the local microbial community. David explains that most of the experimentation results in failure – upwards of 99%; however, *happy accidents* occur occasionally and result in new flavors using different molds and bacteria.

The lecture begins with David Weitz, Professor of Physics and of Applied Physics at Harvard, giving a description of the diversity of microbial world. He breaks down the DNA structure to four particular bases, and how these bases code for proteins. He equates the possible genetic diversity of an organism as 10n log4 . Using the genome – the sequence of nucleotides – of *E. coli* as 4.6 million, Professor Weitz calculates the possible diversity of a simple bacteria as 102,760,000. He uses this large number to demonstrate that only a very small percentage of microbes will ever be discovered and their diversity is beyond the scope of modern science.

David Chang begins his talk by explaining the history and origins of certain flavors produced by fermentation. He attributes Asian culture for