



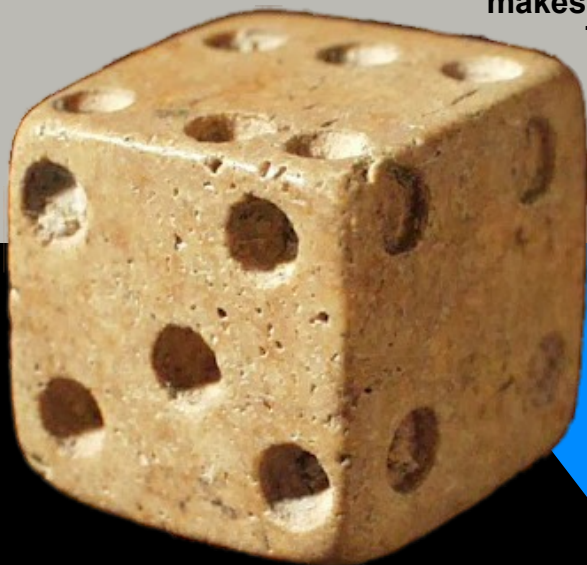
## MATTHEW RICHEY '81

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# TAKE WHAT YOU HAVE GATHERED FROM COINCIDENCE: UNDERSTANDING -- AND USING -- RANDOMNESS

What does it mean to be random? We encounter randomness every day -- it's part of how we talk about the weather, sports, and even love. Despite being so familiar, randomness has proven to be an elusive idea to pin down. Even mathematicians have struggled to define randomness, leading to competing and sometimes conflicting definitions. Whatever it is, randomness is a driving force behind many modern computational algorithms. These algorithms --- the Metropolis Algorithm, Markov chain Monte Carlo Methods, and others --- use randomness as the secret ingredient that makes it possible to tackle famously difficult questions such as the Traveling Salesperson Problem. Using many pictures (and even a few references to important culture figures), this lecture will look at the historical quest to define randomness and illustrate how randomness allows us to solve many of today's most challenging applied mathematics problems.



**MATH MONDAY - SPRING 2019**

**MONDAY - JANUARY 28 - 3:10 PM**

**Franklin Miller, Jr. Lecture Hall - Hayes 109**