

## FINDING

## RANDOMNESS

We will discuss a family of inverse problems of the form “For which reals  $x$  does there exist a probability measure  $m$  of type  $T$  such that  $x$  is random in the sense of  $m$ ?” In the first lecture, we will focus on continuous measures. In joint work with Jan Reimann, we show that randomness relative to continuous measures is related to the fine structure of Goedel’s  $L$ , the universe of constructible sets. In the second lecture, we will discuss randomness relative to measures with the mass distribution property, which by work of Reimann is related to effective Hausdorff dimension, and also randomness relative to measures with well-behaved Fourier transform, which is related to properties of uniform distributions and the theory of Diophantine Approximation.

**21 MAY 2019 (TUES)**  
**9.30–10.30AM**  
**FINDING RANDOMNESS**

**27 MAY 2019 (MON)**  
**9.30–10.30AM**  
**FINDING BETTER RANDOMNESS**



## THEODORE A. SLAMAN

Slaman received his PhD from Harvard University in 1981 with Gerald Sacks as his dissertation supervisor. After a two-year fellowship, he joined the faculty at the University of Chicago. In 1996, he moved to the University of California Berkeley and has remained there since. Slaman is a frequent visitor to Singapore, and holds an NUS Distinguished Visiting Professorship.

Slaman has worked primarily on topics in Recursion Theory. He has been involved in applying a recursion theoretic perspective in other areas, such as models of Peano arithmetic, Reverse Mathematics, Set Theory and Diophantine Approximation.

### Venue

Auditorium  
Institute for Mathematical Sciences  
3 Prince George’s Park, Singapore 118402