

SPEAKER: Kevin T Kelly (Carnegie Mellon University)

TITLE: Simplicity, Truth, and Topology (Joint work with Konstantin Genin).

ABSTRACT: Ockham's razor is the undeniable scientific penchant for simple theories. Without it, scientists would be swimming in an infinity of alternative theories compatible with the information available. But in what sense does such a bias help one find the true theory? Using concepts drawn from topology and algebraic geometry, we argue that Ockham's razor is a necessary condition for keeping science on the straightest possible path to the truth, even though that path cannot be guaranteed to be entirely straight. The argument provides a fresh interpretation of Popper's falsificationist philosophy of science, which has long been popular with practicing scientists.