1147-03-540   **Douglas Cenzer*** (`cenzer@ufl.edu`), Department of Mathematics, University of Florida, and
                     Chris Porter. *The extraction rate of Turing functionals.* Preliminary report.

The goal of this talk is to discuss recent work on the extraction rate of Turing functionals. Roughly, the extraction rate of a Turing functional Φ that computes a sequence X from a sequence Y is the limit supremum over n of the ratio of the number of bits of X output by Φ given n bits of Y as input. We will make this definition precise, using the notion of a canonical generator for a Turing functional. We will then turn to calculating the extraction rate of specific Turing functionals, most prominently, the Levin-Kautz conversion procedure that converts biased randomness to unbiased randomness, where the biased randomness is defined in terms of a computable, shift-invariant ergodic measure. We will also consider the extraction rate of random functions on Cantor space. (Received January 25, 2019)