1074-94-293 **David Conti*** (david.conti@ucdconnect.ie). *Enumerating Trellis Pseudocodewords.*

A central paradigm in modern coding theory is to represent codes by special graphs from which powerful decoding algorithms can be derived. Trellises are among the most notable of such graph representations of codes, one main reason being that they benefit from a fruitful algebraic/combinatorial theory. Their decoding performance under important modern algorithms has been shown to depend on so called pseudocodewords (and their pseudoweights). In this talk we will take a stroll through trellises and their pseudocodewords, by presenting some fundamental questions and a motivating conjecture on a special trellis representing the Golay code. We will show how an algebraic framework can be developed to help us study and enumerate trellis pseudocodewords, bringing into the picture recurrence sequences and invariant theory. This is part of the Ph.D. research of D. Conti under the supervision of N. Boston. (Received August 23, 2011)