**Title:**Innovation and Collaboration through the Eyes of a Longtime Genetic Algorithmist

**Abstract:**The terms "innovation" and "collaboration" are important words in the 21st century, and this talk considers them from the perspective of genetic algorithms (GAs)--search procedures based on the mechanics of natural selection and genetics.  GAs may be thought of as a computational models of innovation, and this interpretation is explored first using the concepts of *the race*and *the sweetspot.*GAs may also be thought of as inducing a kind of collaborative process between human and machine, and this interpretation is explored next through an *evolutionary collaboration system*called DISCUS.  Finally, genetic algorithms can be thought of as models of certain kinds of social systems and this interpretation is explored through a new movement called *The Big Beacon,*a movement for the transformation of engineering education.  The Big Beacon contains GA-like elements in a network of collaborative constituents including students, educators, practicing engineers, and engineering employers, organized in a manner designed to disrupt the status quo. The talk concludes with some remarks about the distinctively human aspects of collaboration and innovation tied to certain emotional variables that are not the normal subject of engineering or computer scientific discourse.