1078-28-336 **Rolando De Santiago**, **Michel L Lapidus**, **Scott Roby** and **John A Rock***
(jarock@csupomona.edu). *Discrete generalized fractal strings and generalized lattice strings.*

In this talk, we discuss two related special cases of generalized fractal strings. The first case considers discrete generalized fractal strings which have weights given by a countably infinite nondecreasing sequence of positive real numbers which are not necessarily integer. In this setting, the geometric zeta function is shown to be equal to a Dirichlet series whose form is reminiscent of the geometric zeta function of an ordinary fractal string. The second case considers discrete generalized fractal strings whose whose weights are complex-valued and yet the scales are powers of a unique positive real number which is less than one. Hence, in this setting, we establish a generalization of lattice strings to include complex multiplicities which are determined via a corresponding recurrence relation. (Received December 12, 2011)