1027-05-20 **Ross M. Richardson*** (rmrichardson@math.ucsd.edu), Dept. of Mathematics, UCSD, 9500 Gilman Dr., La Jolla, CA 92093-0112. *New Models and Questions in Geometric Random Graphs.* Preliminary report.

Classical random graph theory, in the spirit of Erdős and Rényi, has become a mature and well-established part of the graph theory landscape. The theory of geometric random graphs, graphs formed in part from geometric information, has been given comparatively little attention by the graph theory community, and indeed has developed largely within a small niche of the statistics and percolation literature.

In the last few years, the interest in geometric random graphs has grown rapidly and among a wider community. Problems such as cellphone routing and social network modeling have brought computer scientists and combinatorics researchers into the field. As such, questions and techniques from combinatorics, discrete geometry, and computer science have become more prominent in the field.

In this talk, we will survey the past and current state of random geometric graphs. We present our own work regarding local/global phenomena in random graphs with two new models and applications. We will also discuss the emerging work of others. Finally, we will present some open questions and research directions which will be of interest to the graph theory and combinatorics community more broadly. (Received January 01, 2007)