962-52-9   **Ronald L. Graham*** (`graham@ucsd.edu`). *The Steiner Problem.*

There are many situations in which one would like to connect a collection of points in some metric space by a network having the minimum possible total length. Such problems have a long and distinguished history, and occur in such areas as the design and analysis of telecommunications networks, oil pipeline networks, heating and air-conditioning duct systems, algorithms for phylogenetic reconstruction from DNA sequences, and the layout of circuits on VLSI chips, to name a few.

In this talk we survey what is known and what is not known about this problem, and how it has been impacted by current developments in theoretical computer science. (Received May 09, 2000)