

**Dr. Nathaniel Miller, UNC Mathematical Sciences Professor,
Publishes Book on Euclidean Geometry**

Dr. Nathaniel Miller, Associate Professor of Mathematical Sciences in the College of Natural and Health Sciences at the University of Northern Colorado, has published a new book entitled *Euclid and His Twentieth Century Rivals: Diagrams in the Logic of Euclidean Geometry*. The book is being published by the Center for the Study of Language and Information at Stanford University, and is being distributed by the University of Chicago Press. The book's title is an adaption of the title of a book by the mathematician Lewis Carroll, who wrote the book *Euclid and his Modern Rivals* in 1879. In this book, Carroll, also the well known author of *Alice's Adventures in Wonderland*, attempted to defend Euclid from criticisms brought about by nineteenth century developments in geometry and logic. Similarly, Dr. Miller's book seeks to defend Euclid from criticisms stemming from twentieth century developments in geometry and logic.

Euclid's *Elements* is a seminal work in mathematics. It dates from around 300 BC and has been a central text of mathematical education since that time. Twentieth-century developments in logic and mathematics have led many people to view Euclid's proofs as inherently informal, especially due to the use of diagrams in proofs. In *Euclid and His Twentieth-Century Rivals*, Dr. Miller discusses the history of diagrams in Euclidean Geometry, develops a formal system for working with them, and concludes that they can indeed be used rigorously. One aim of his research is to show that Euclid's *Elements* is, for the most part, not as flawed as some people have supposed, and that it is still an unsurpassed introduction to rigor and proof in mathematics.

He also introduces a diagrammatic computer proof system, based on this formal system. This volume will be of interest to mathematicians, computer scientists, and anyone interested in the use of diagrams in geometry.