NSF proposal number: <u>6609398</u>
Title: <u>Conference on Ordered Rings at Louisiana State University</u>
Program: <u>NSF 05-540</u>

**PROJECT SUMMARY**

An international conference, with 20 to 30 participants, will be held on the campus of Louisiana State University in Baton Rouge, Louisiana, from Wednesday April 25 to Saturday April 28, 2007. This conference will be the tenth in a series of annual conferences on ordered algebraic structures that have been taking place in the southeastern United States, previous conferences having been at the University of Florida, Vanderbilt University and the University of Mississippi.

**Intellectual Merit.** The proposed conference will feature current research work in the general area of *ordered rings*, including work on spectra, representations and completion operators of ordered rings, with applications in topology and real algebraic geometry. Carefully planned presentations interspersed with ample opportunities for experts to describe and discuss important unsolved problems and engage in intense mathematical interactions will be offered in a setting conducive to intellectual work. The goals include supporting younger researchers and strengthening collaborative links, especially international ones. We note, in particular, that real algebraic geometry—a field with important practical applications—is presently much more intensively studied in Europe than in the USA. We aim to encourage American researchers to seek stronger links to this work.

**Broader Impact.** This conference initiates LSU as a partner in instituting a permanent annual conference series in ordered algebraic structures that will circulate among institutions in the Southeast. Also, at this meeting we will take steps to improve communication, knowledge-access and leadership within and across research communities. Specific strategies for this are described in the proposal. They include plans for a web site that will supply a variety of reference works and resources for researchers in ordered algebraic structures and real algebraic geometry.