

Brother Lucian Blersch Symposium:
*Advances in Science
through Mathematics*

Mathematics has historically contributed to advances in many areas of science. As scientists attempt to understand the intricacies of life and our world, mathematics continues to provide new tools and advances in understanding. This symposium brings mathematicians and scientists together to discuss some of the recent connections between mathematics and science.

*Organized by the School of Natural Sciences
St. Edward's University*

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Brother Lucian Blersch Symposium:
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Friday, February 16, 2001

1-6:30 p.m.

Ragsdale Center

St. Edward's University





Ken Stephenson, Ph.D.

Professor Stephenson has been in the Mathematics faculty at the University of Tennessee for 25 years, interspersed with visiting positions in Hawaii, The Open University, Cambridge, and Florida State. He was an undergraduate at Michigan, served in the US Navy, and then earned his PhD under Walter Rudin at Wisconsin. As a Rudin student, Stephenson is at heart a complex analyst. He was always intrigued by the more geometric aspects of that topic, however, so he was hooked when Bill Thurston conjectured a connection between “circle packings” and conformal maps. Since then he’s been deeply involved in developing a new “discrete function theory”. His current emphasis is on neuroscience, where an interdisciplinary group is implementing circle packing methods for routine imaging of the human cerebral cortex. So with the aid of modern computers, nineteenth century pure mathematics meets twenty-first century brain research. What more could an analyst want?



Hong Qian, Ph.D.

Professor Qian received his B.A. in Astrophysics from Peking University in China in 1982, and his Ph.D. in Biophysics and Biochemistry from Washington University in St. Louis in 1989. Subsequently, he worked as postdoctoral researcher at University of Oregon and Caltech on biological physics and mathematical biology. Before joining the University of Washington, he was an assistant professor of Biomathematics at UCLA School of Medicine. From 1992-1994, he was a fellow with the Program in Mathematics and Molecular Biology (PMMB), a NSF-funded multi-university consortium. Professor Qian’s main research interest is the mathematical approach to and physical understanding of biological structures and processes, especially in terms of stochastic mathematics and statistical physics. His past researches include protein thermodynamics and folding, DNA supercoiling and electrostatics, and macromolecular mechanics of single molecules, as well as various mathematical modeling for enzyme kinetics, muscle contraction, blood flow in vascular network, and cancer metastasis.

Panel Members:

- Ken Stephenson**, Professor of Mathematics, University of Tennessee
- Hong Qian**, Professor of Applied Mathematics, University of Washington
- Mary Kopecki-Fjetland**, Assistant Professor of Chemistry and Biology, SEU
- Edward Marcotte**, Assistant Professor of Biochemistry, University of Texas, Austin
- Moderator: Jean McKemie**, Professor of Mathematics, SEU



Welcome

Keynote speeches:

***Circle Packing meets Brain Mapping:
nineteenth century math meets
twenty-first century neuroscience***

Ken Stephenson, University of Tennessee

Mathematical Modeling in Biology

Hong Qian, University of Washington

Panel Discussion

Undergraduate Research Poster Session

Reception