

## BIOLOGICAL PATTERN FORMATION SEEN THROUGH A MATHEMATICAL LENS

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**Abstract:**

Pattern formation during development of the adult form of an organism requires precise spatio-temporal control of gene expression. This typically involves complex signal transduction and control networks, but some basic issues can be understood using simple paradigms such as the French flag problem. In this talk we will address the question of how to produce the same pattern on organisms of very different size, i.e., how do developing systems produce scale-invariant patterns.



**Bio:**

Hans Othmer, a Professor of Mathematics at the University of Minnesota since 1999, has had a long and distinguished career in the field of mathematical biology. Prof. Othmer received his Ph.D. in Chemical Engineering from the University of Minnesota in 1969. Prior to returning to the University of Minnesota, Prof. Othmer was a faculty member at Rutgers University and the University of Utah and has received several awards such as the Senior Research Award from the Alexander von Humboldt Foundation and the Akira Okubo Prize from the Society of Mathematical Biology, both of which honor the extent of Prof. Othmer's work throughout his career. Through the use of mathematical modeling, Prof. Othmer has made important contributions to the areas of cell motility and chemotaxis, pattern formation in biochemical kinetics, embryonic development, and the development of cancer, among others. His work has influenced the way in which many researchers approach biological problems in a mathematical way.

**DATE: THURSDAY MAY 12, 2011**  
**TIME: 3:30PM (REFRESHMENTS AT 3:15)**

**FUTURE COLLOQUIUM DATES:**

*Fall Semester 2011*

*Place: 3M auditorium in the Owens Science Hall, Frey Science and Engineering Center  
Sponsored by the Center for Applied Mathematics (651-962-5524)*



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