

University of California, Santa Cruz,  
Emeriti Group presents

## Emeriti Faculty Lecture by Mathematics Professor Ralph Abraham

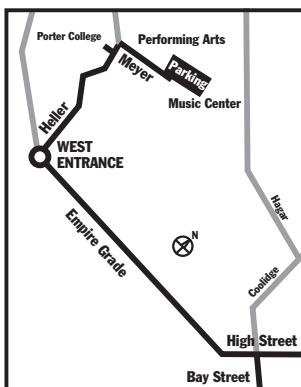
# Bolts from the Blue:

Startling Episodes from the  
Coevolution of Mathematics and Art

The history of mathematics is punctuated by important contributions from artists, while the history of art includes significant innovations by mathematicians. In this illustrated talk we will discover exemplary cases from each of the main periods of cultural history (and prehistory). Ice age music, Megalithic geometry, Islamic patterns, Kepler's music, Fractal paintings before computers. Is mathematics invented by humans, revealed from heaven, imported from space? What will be the next major advance on mathematical or artistic style?

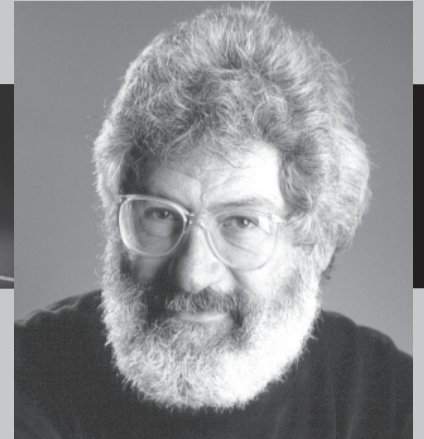
**7:00 p.m. Wednesday  
November 4, 2009  
Music Recital Hall**

*Free and open to the public*



*Sponsored by the Office of the Chancellor,  
the Division of Social Sciences, and the  
Departments of Psychology and Sociology,  
University of California, Santa Cruz*

**Parking is available for \$3.00  
per car in the Performing Arts lot**



**RALPH H. ABRAHAM** has been Professor of Mathematics at the University of California at Santa Cruz since 1968, retiring in 1994. He received his Ph.D. in Mathematics at the University of Michigan in 1960, and taught at Berkeley, Columbia, and Princeton before moving to Santa Cruz. In 1975, he founded the Visual Mathematics Project at UC Santa Cruz, and has performed works of visual and aural mathematics and music. He remains active in dynamical systems theory and its applications in numerous fields, and is an active editor for the technical journals *World Futures*, and the *International Journal of Bifurcations and Chaos*.

*For questions or accommodation requirements, contact UC Santa Cruz Special Events Office at 831-459-5003 or [specialevents@ucsc.edu](mailto:specialevents@ucsc.edu)*