



McMaster University



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## THE FIELDS INSTITUTE FOR RESEARCH IN MATHEMATICAL SCIENCES

### DIRECTOR'S SEMINAR

#### SPEAKER:

**DAVID K. CAMPBELL**  
Head, Department of Physics  
University of Illinois

#### On the Topic:

#### **"Nonlinear Science: The Next Decade"**

The past decade has witnessed an explosion of interest in the interdisciplinary subject of "nonlinear science". The promise for the next ten years is even greater. In this colloquium level presentation, we begin by reviewing several aspects of the recent progress in nonlinear science, focusing on the role that three central "paradigms" of nonlinearity -- "solitons and coherent structures", "deterministic chaos and fractals", and "patterns and complex configurations" -- have played in clarifying nonlinear phenomena in a variety of different contexts in natural sciences and engineering. We then speculate on the future development of these paradigms and propose that a fourth paradigm -- "adaptation and emergent behavior" -- will play a crucial role in the nonlinear science of the next decade.

**Monday, February 8, 1993**

**4:00 pm, room 3018**

**at**

**The Fields Institute**

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