Thoughts and Ideas to Contribute to the Colloquium
by Diana Stirling

I'd like to contribute to our discussion in three areas-the potential contribution of training and practice in the visual arts to building the scientific mind; thoughts about how delivering curriculum via the Internet invites design innovation; and a display in the Knowledge Café of two software programs that model complex systems and are fun and easy to use.

WAYS OF THINKING

I'd like to explore ways in which training in the visual arts might inform and enhance the development of the scientific mind. I'll examine the potential benefit of three particular aspects of visual exploration: *relationship*, *pattern recognition and creation*, and *structure and abstraction*, and how experience with these attributes might contribute to greater flexibility of thinking in scientific endeavor.

FLEXIBLE CURRICULUM DESIGN

I envision a computer-mediated curriculum that customizes itself to each user's preferences, documents the user's learning journey visually, and allows for multiple perspectives in the course of the user's explorations. I want to explore some of the design considerations involved in creating such a curriculum, as well as its potential benefits and challenges.

MODELING COMPLEX SYSTEMS

At a display in the Knowledge Café I'll offer a brief description and summary of the characteristics of complex adaptive systems and an introduction to the use of two powerful modeling tools for exploring them. The use of computer software such as StarLogo and NetLogo can be a wonderful way to explore the dynamics of these systems. These programs are easy enough for children to learn yet sophisticated enough for the needs of researchers. I'd like to suggest that these computer programs can vitally enhance the development of the scientific mind in users within a wide range of ages and levels of experience.