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fine arts*. Preliminary report.

Turing (1952), Meinhardt (1972), Young (1986), Witkin and Kass (1991), and Fleisher (1995) have all famously considered mathematical models based on reaction and diffusion - which exhibit increasing degrees of complexity and sophistication - in order to simulate biological pattern formation. We investigate a reaction-diffusion model after Eggenberger (1994) that is more faithful to the notion of cellular processes and more amenable to applications in the fine arts, and we discuss the convergence of reaction-diffusion generative art methods with swarm, autonomous agent, and collective robotic techniques. (Received August 28, 2010)