

Manuel A. Báez**Poster: The Phenomenological Garden**

Topic: The Morphology of the Amorphous

Author:

Manuel A. Báez
 Carleton University,
 Azrieli School of
 Architecture & Urbanism,
 Canada
 Director: Crossings
 Interdisciplinary
 Research
<http://manuelbaez.pbworks.com/TEDx-presentation>

Publications:

[1] Petitjean, Michel, Edit., *Symmetry: Culture & Science* 2009, Vol. 16, Chapter: “*The Garden of Morphological Symmetry*”, Symmetrion, Hungary, 2009
 [2] Sala, Nicoletta, Edit., *Chaos and Complexity in the Arts & Architecture*, Chapter: “*Crystal & Flame*”, Nova Science Pub., New York, 2007

Contact:

Manuel_baez@carleton.ca

Abstract:

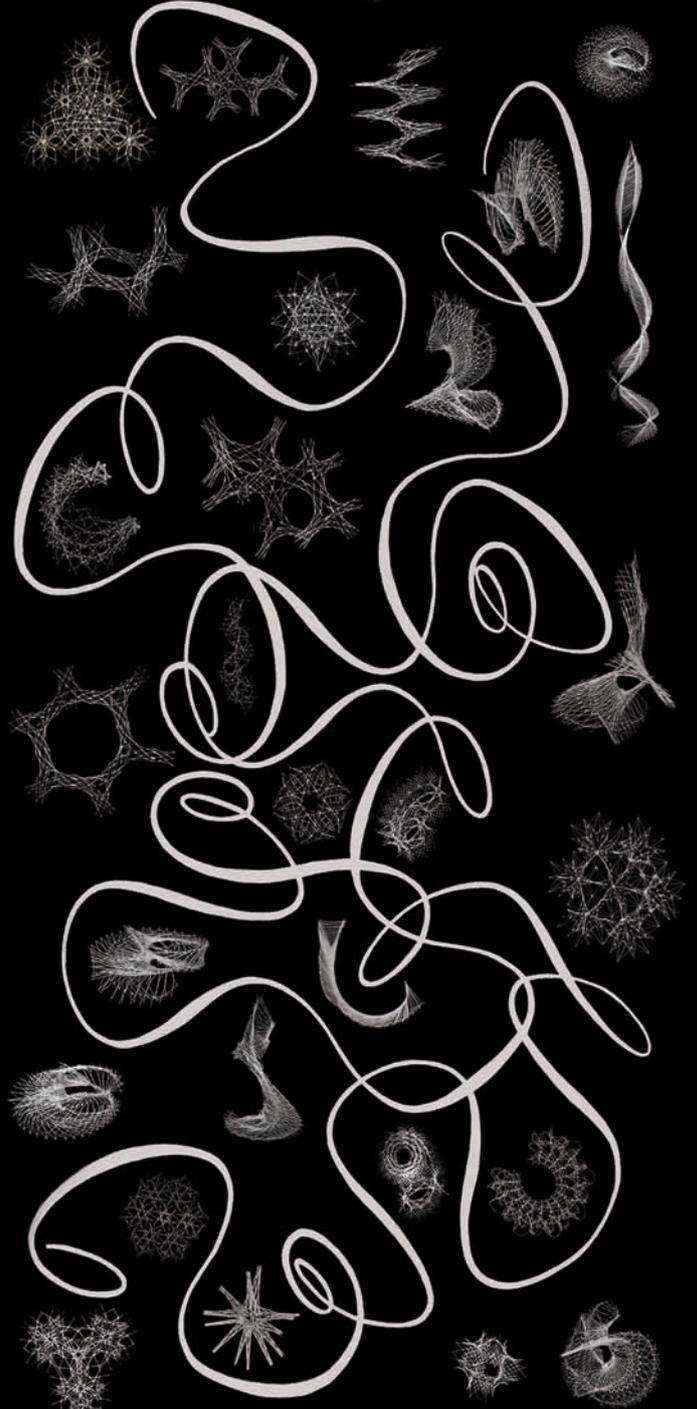
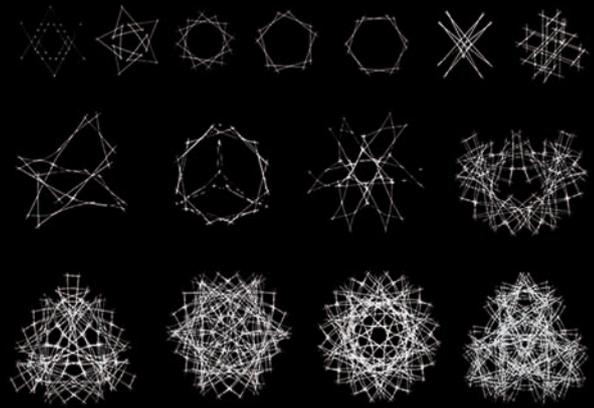
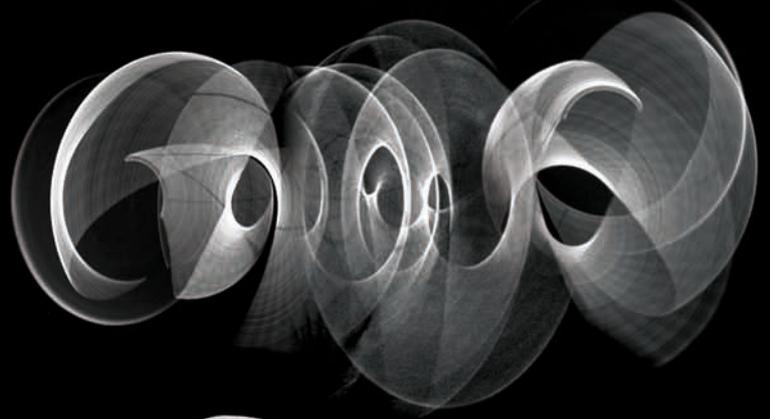
Nature’s fundamental processes inherently generate regulatory systems and patterns that correlate with the rich realm of natural phenomena. These fertile processes inherently involve elemental relationships that dynamically evolve into integrative systems with startling form and structure generating capabilities. The generative potential and interrelated cellular patterns of these processes offers more comprehensive insights into emergent complex morphology. The intrinsic nature of these *process-patterns* reveals highly coordinated cellular relationships that are simultaneously stable and yet highly dynamic. The poster offers the evolution of work that is exploring how complex and richly integrated structures and forms are generated from such *process-patterns*. The images on the upper right and left, and the central-right undulating *line*, are from an initial project that used a ceiling-mounted potter’s wheel to spin a string into sequential wave-formations (see lower left side) that are initially stable and gradually transform, becoming turbulent at higher speeds. This project, titled *Ariadne’s Thread/Rumi’s Ocean*, was inspired by scientific investigations of dynamic phenomena. It was recorded from different vantage points, generating a wealth of morphological formations and generative working procedures. The project initiated this architectural and sculptural work-in-progress entitled the “**Phenomenological Garden.**” The potter’s wheel was also used to cast wax-forms generated within its spinning vortex. Views of one of these casts are shown in the middle-left side and, to their right, are other views of the spinning string. The forms generated through these procedures and their inspirational sources, initiated an investigation into its sculptural and architectural potential.

Systematic analysis of the dynamics of basic geometric relationships generated a series of cellular units and hands-on procedures that allow for the intuitive discovery of the interrelationships between form, structure, and process. The form generating potential of these units has been explored through the foldability of their 2-dimensional patterns and by joining them using wooden dowels and rubber bands into 3-dimensional lattices. Simple units and their complex evolving combinations are shown on the lower-left. The flexible joints, units and integrated assemblies, generate a variety of forms and structures through the emergent, transformative and organizing properties. How these properties are systematically analyzed determines what is discovered and developed through the process. The rich variety is shown throughout the undulating string and on the lower-right colour images. Recent architectural proposals are shown on the lower-left. The morphological diversity revealed through this research offers new insights into nature’s processes as our increasing understanding of complex phenomena is being embraced for technological and conceptual inspiration.

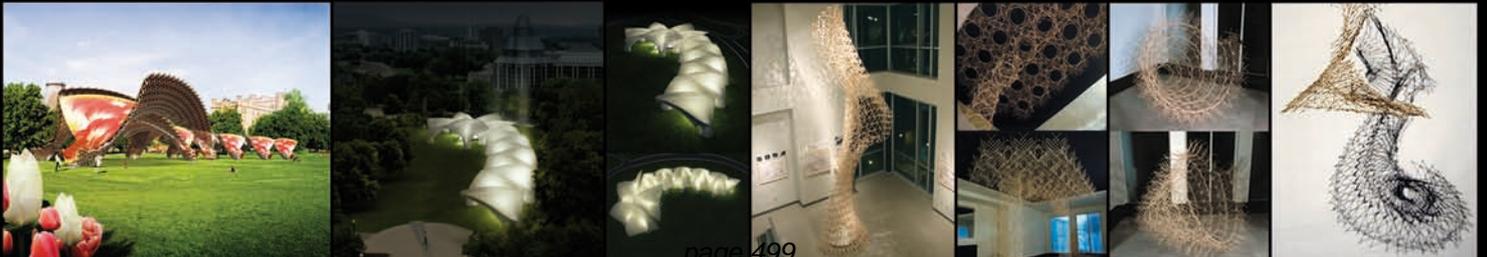
Keywords: Emergence, Complexity, Patterns, Self-Organization, Fractals, Form-Finding, and Biomimetics

The Phenomenological Garden

Manuel A. Baez - Architect, Associate Professor, Director of Crossings Interdisciplinary Research
 Azrieli School of Architecture and Urbanism, Carleton University, Ottawa, Canada
 e-mail: manuel_baez@carleton.ca



Works from the Crossings Workshop by: Manuel Baez, Diana Park, Karam Georges, Sharif Khan, Chloe Allen, Sherrin Rokallah, Mei Ling Chow, Joyco Baddour, Sahar Kubba, Marwan Shaker, Daniel Cronin, John Blas, & Dan Linda Liu



Starting from the left: Images 1, 2 & 3. Mayor's Hill Park Pavilion proposals, Ottawa Tulip Festival (#1), 2009. 4. Complex Simplicity installation at the David Azrieli Gallery, Carleton University, 2006. 5 & 6. Views from the Phenomenological Garden, Metaphoric Interweavings Symposium installations, Grantbrook Academy of Art, 1998. From the Crossings Workshop Suspended Animation series, cellular form study with cast shadow, bamboo dowels and rubber bands, 2002-3, work by Diana Park.