

# Evolutionary and Swarm Design

CPSC 599.33 — Summer 2001

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03 July 2001

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Course Abstract

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Evolutionary Computing

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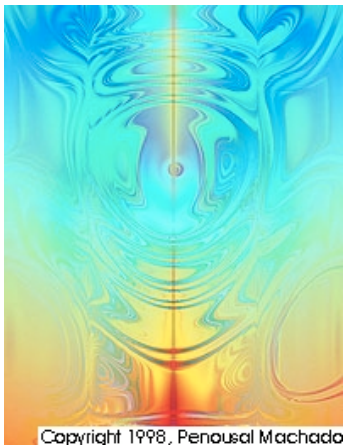
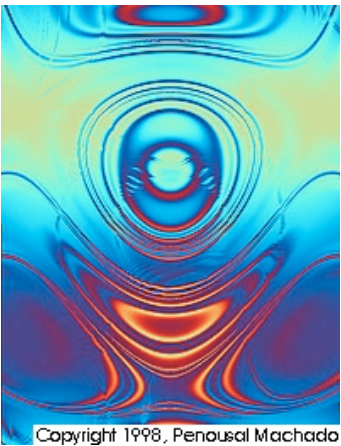
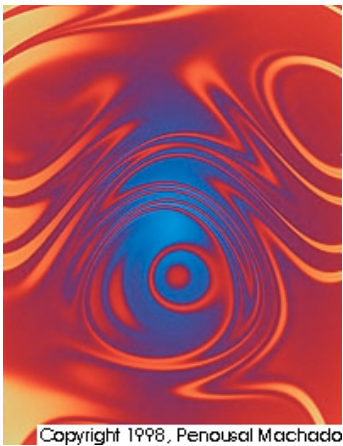
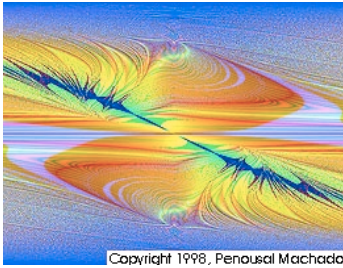
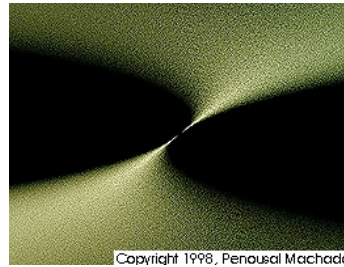
## Design by Evolution — A Gallery of Examples

### □ Evo-Art Online: A Few Examples

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#### ■ NEvAr: Neural Evolutionary Art

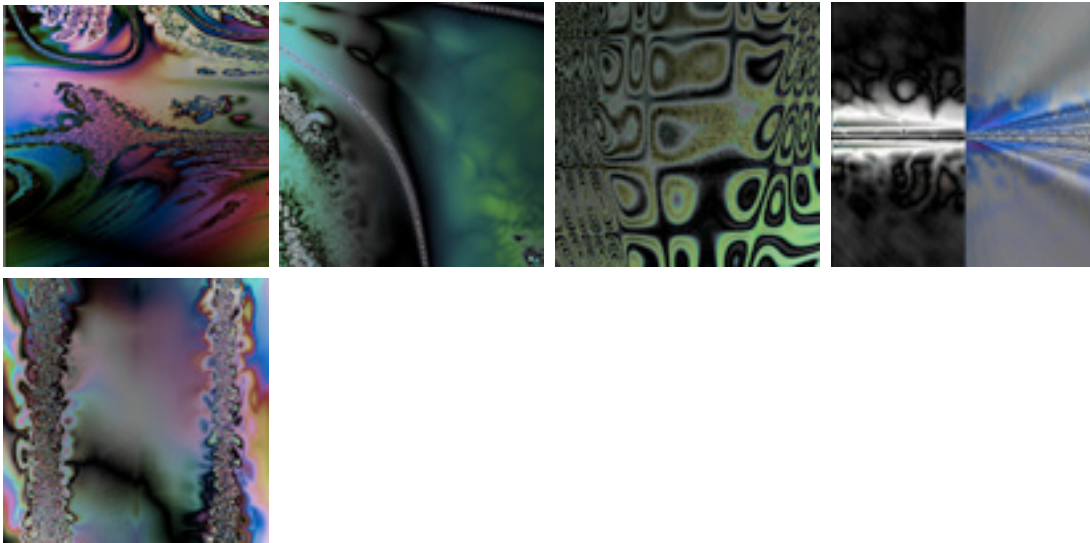
Panousal Machado — [www.dei.uc.pt/~machado](http://www.dei.uc.pt/~machado)



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### ■ Dr. Mutatis: Genetic Programming and Genetic Art

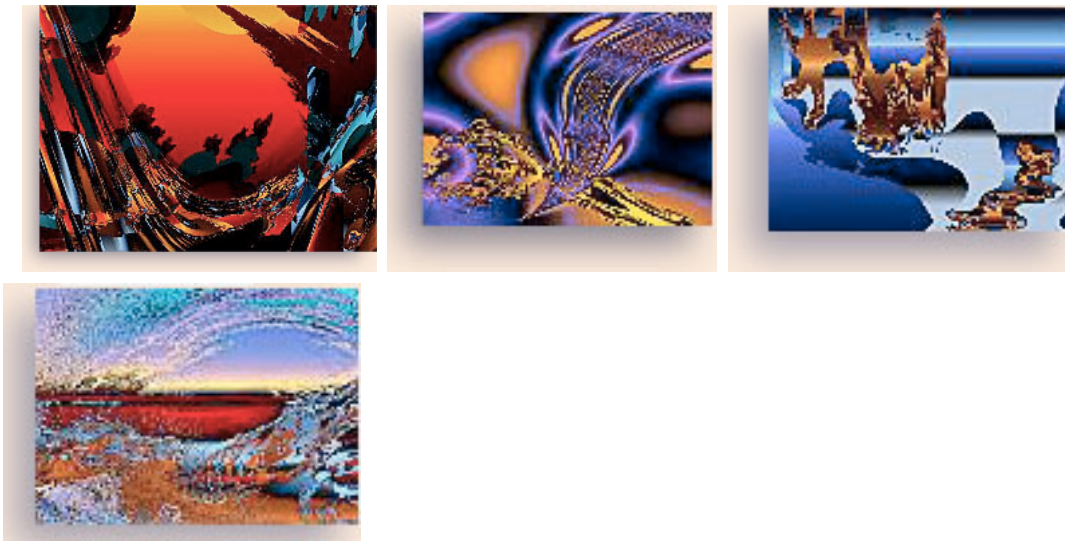
Ken Musgrave — [www.wizardnet.com/musgrave/mutatis.html](http://www.wizardnet.com/musgrave/mutatis.html) or  
[www.fractalworlds.com](http://www.fractalworlds.com)



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### ■ The Evolutionary Art of Steven Rooke

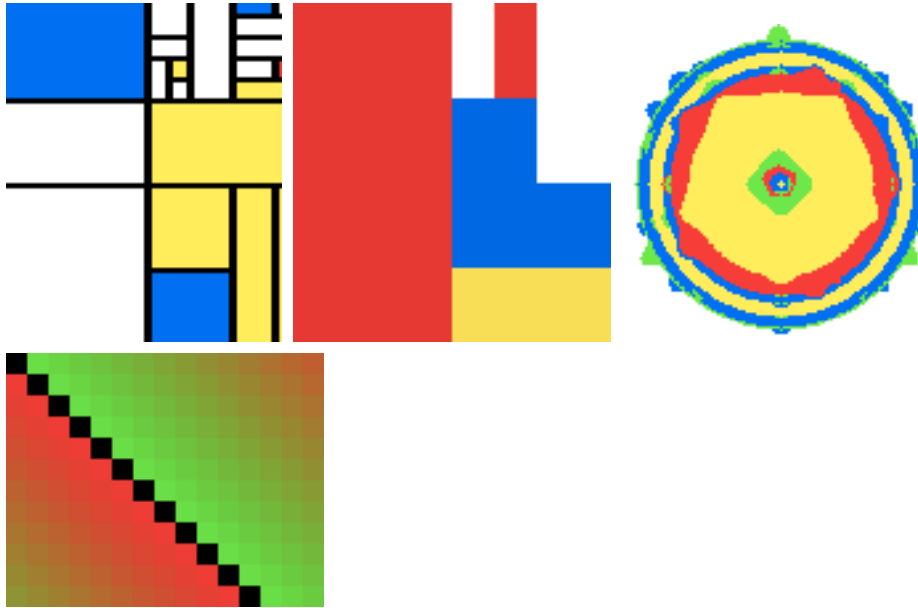
Steven Rooke — [www.azstarnet.com/~srooke](http://www.azstarnet.com/~srooke)



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### ■ Art by Evolution on the Web

Jano van Hemert — [www.wi.leidenuniv.nl/~jvhemert](http://www.wi.leidenuniv.nl/~jvhemert)

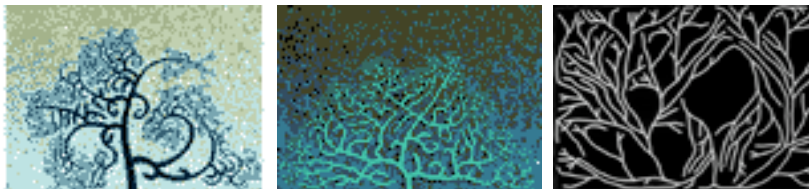


Piet Mondriaan — Theo van Doesburg — Mandala art — Fractal art

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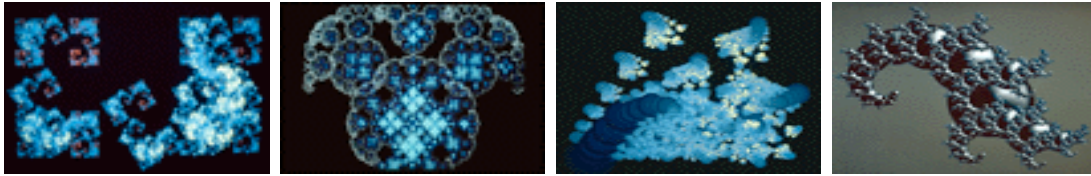
### ■ Art and Artificial Life

Jeffrey Ventrella — [www.ventrella.com](http://www.ventrella.com)



*Self-avoidance and recursion*





*Fractal art*

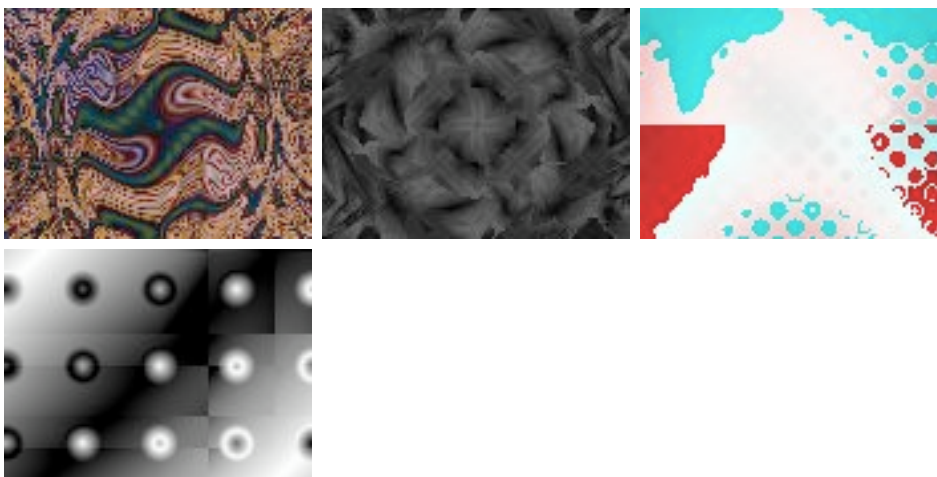


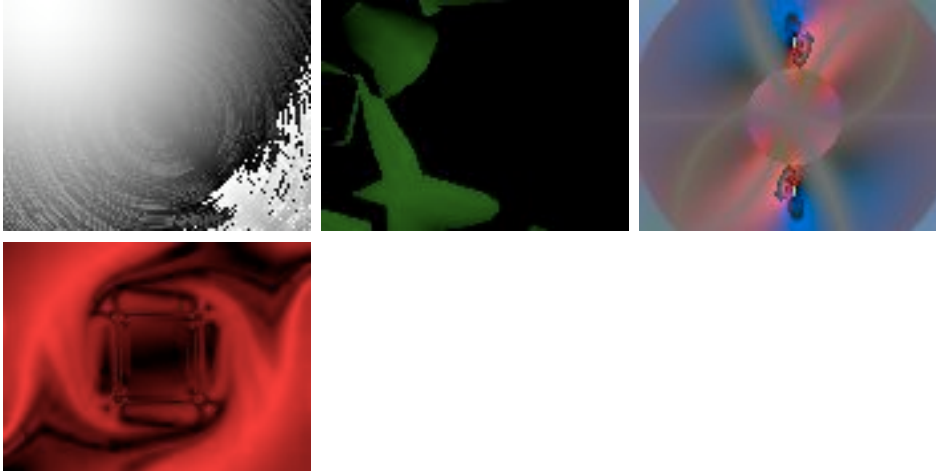
*Mathematical compositions*

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■ **Cambrian Art**

Mattias Fagerlund — [www.cambrianart.com](http://www.cambrianart.com)





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■ *Gallery of Random Art* — Carnegie Mellon University

Andrej Bauer — [gs2.sp.cs.cmu.edu/art/random](http://gs2.sp.cs.cmu.edu/art/random)



## □ The Robot as an Artist

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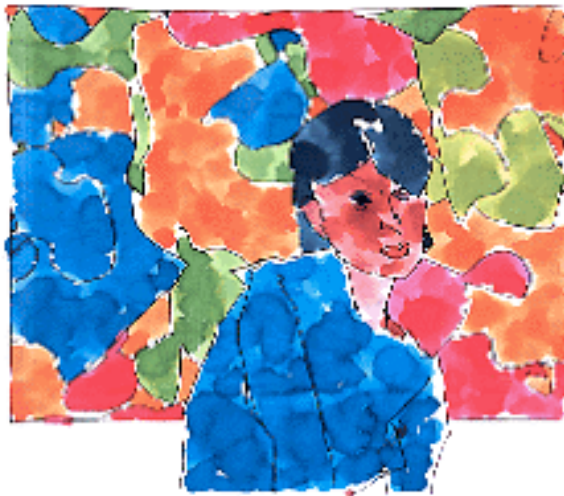
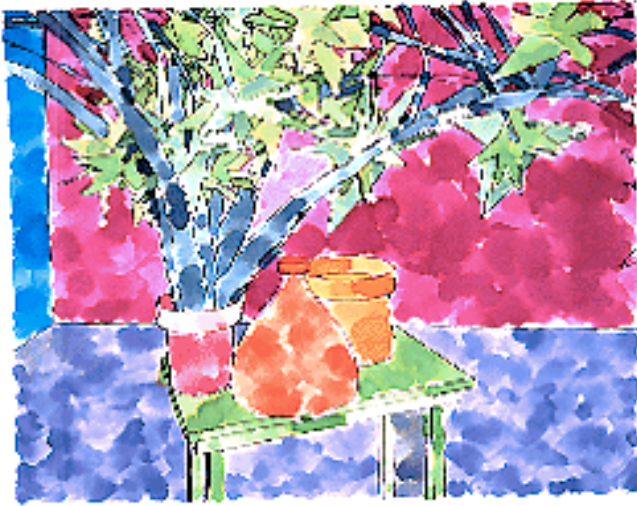
### ■ Aaron — The Robot as an Artist

Harold Cohen — [www.scinetphotos.com/aaron.html](http://www.scinetphotos.com/aaron.html)







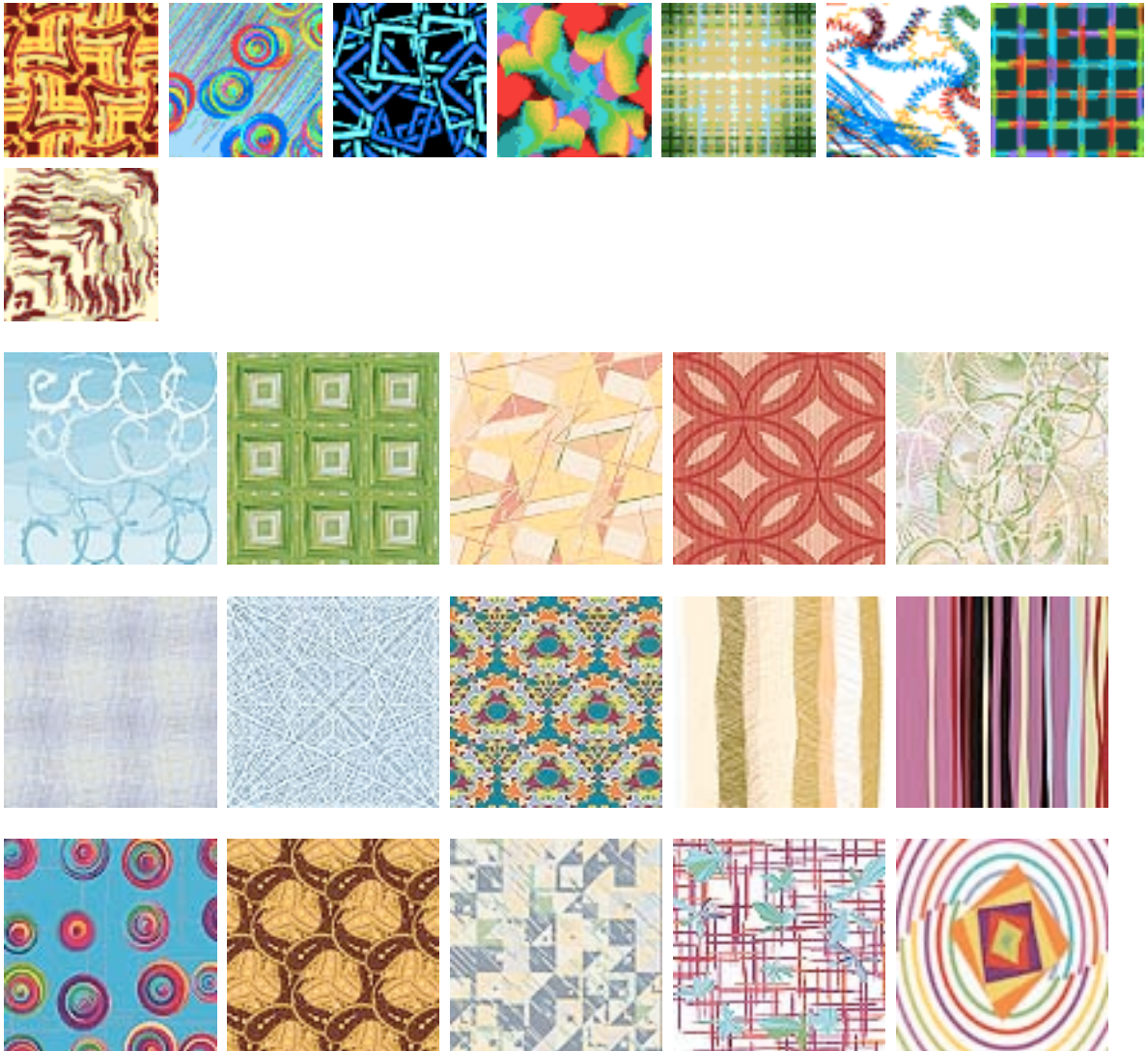




## □ "Evolutionary" Computer Graphics

### ■ Artlandia

Igor Bakshee — [www.artlandia.com](http://www.artlandia.com) or [www.graphica.com](http://www.graphica.com)



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## ■ Graphica

Michael Trott — [www.graphica.com](http://www.graphica.com)

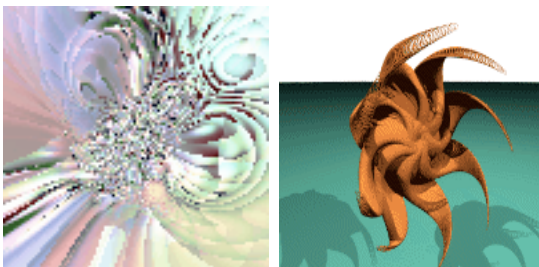


## □ Organic Genetic and Evolutionary Art

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### ■ *Organic Genetic and Evolutionary Art* — An Overview

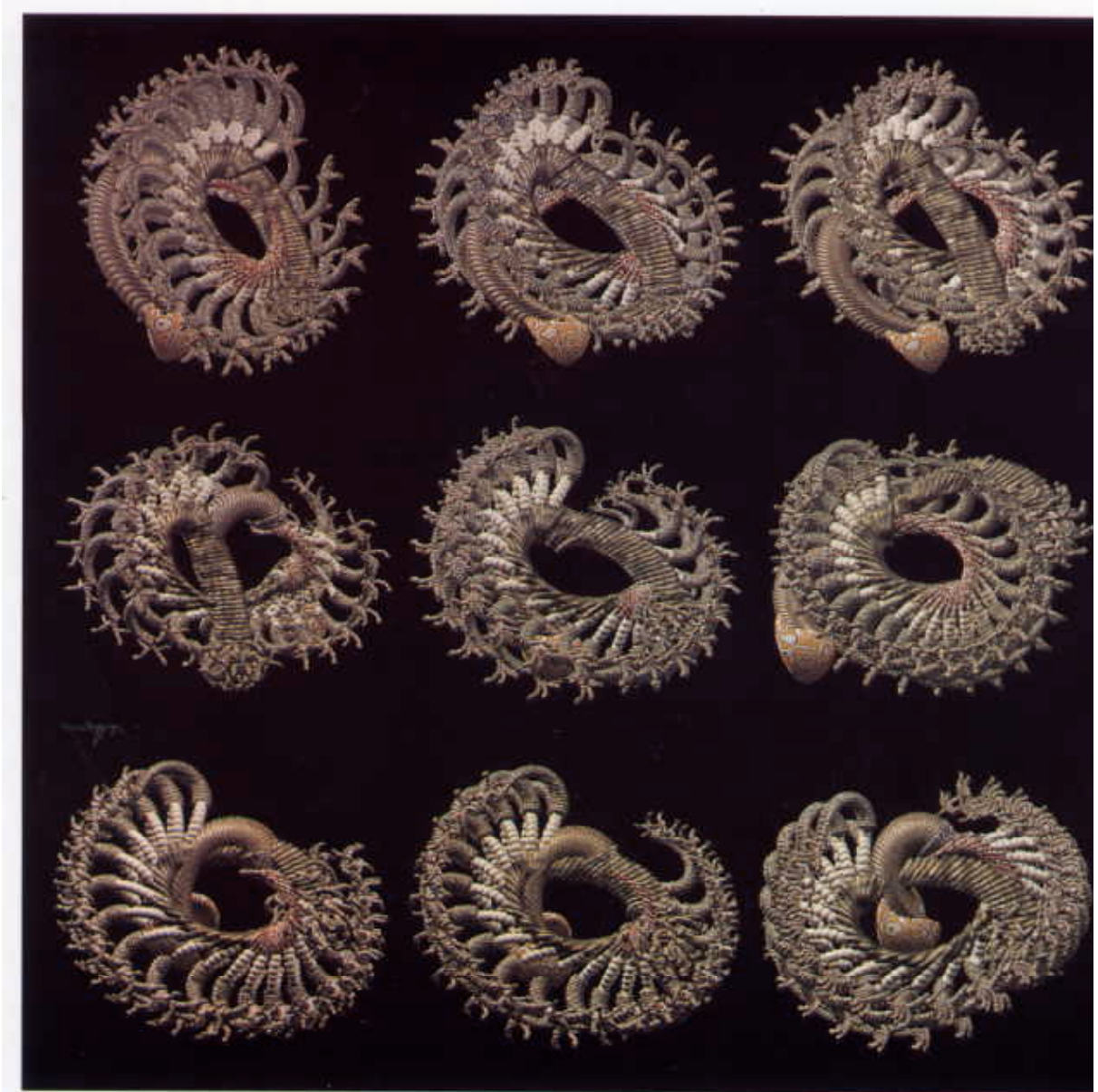
Andrew Rowbottom — [www.netlink.co.uk/~snaffle/form/evolutio.html](http://www.netlink.co.uk/~snaffle/form/evolutio.html)



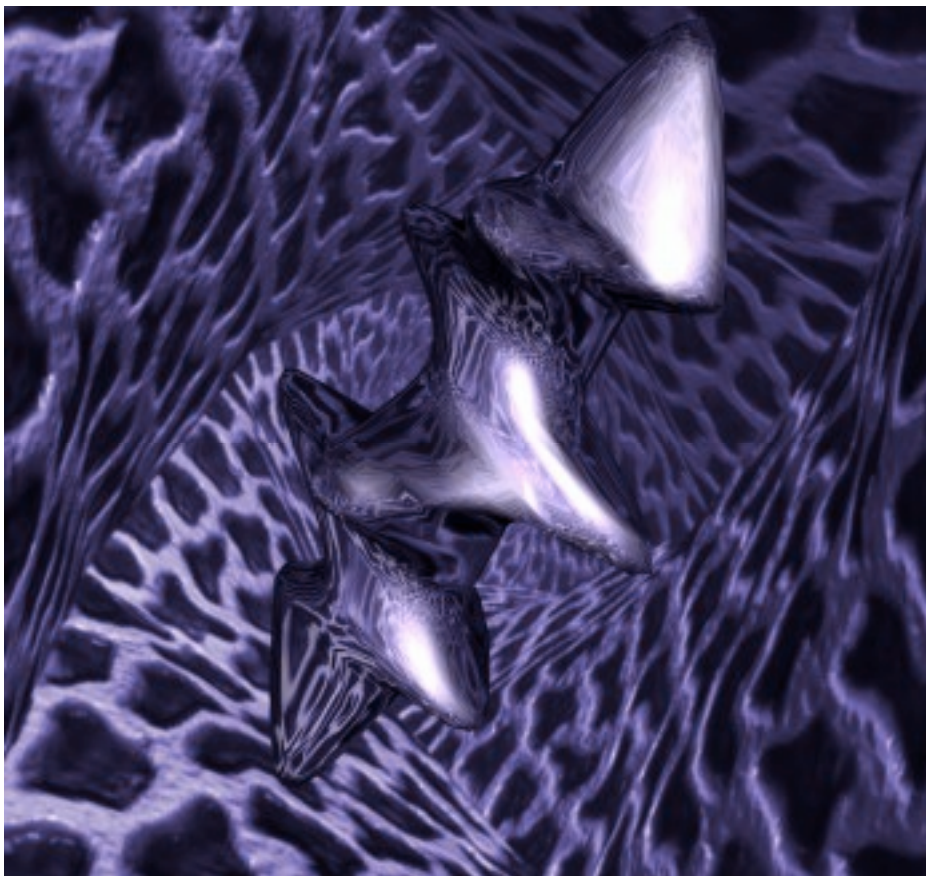
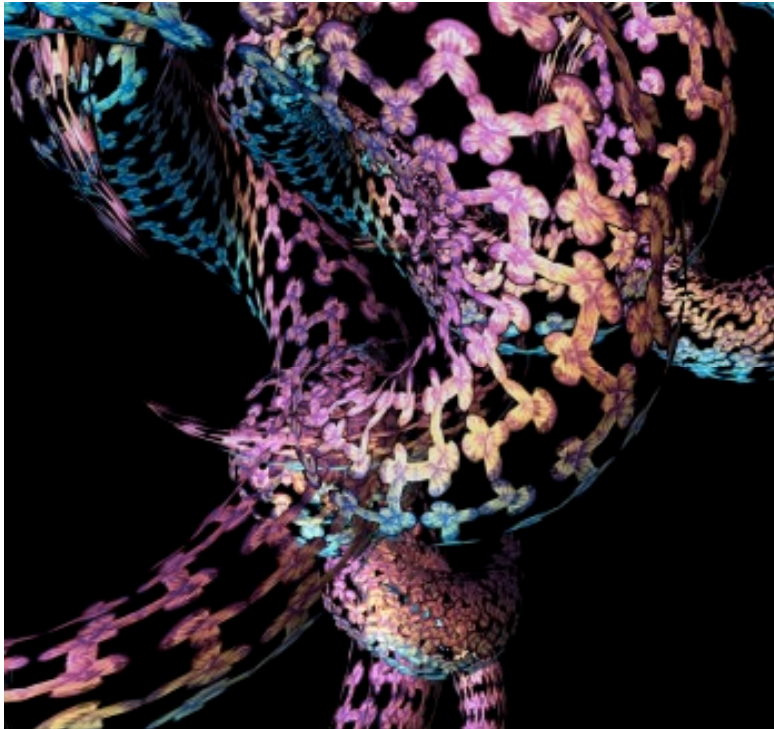
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## ■ Evolutionary Art and Computers

Stephen Todd and William Latham









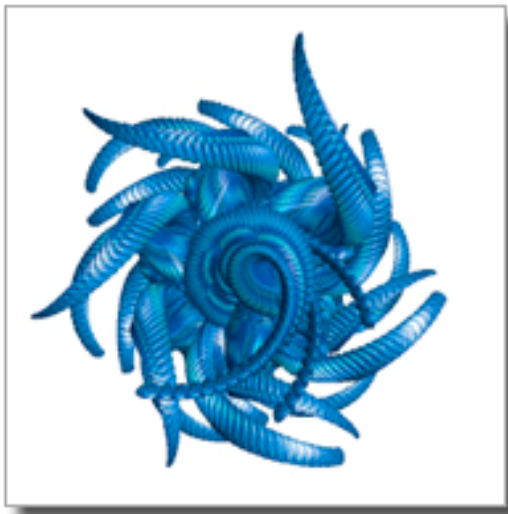


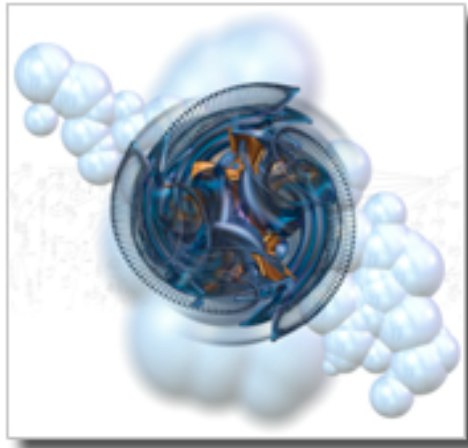


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■ **Organic Art**

William Latham and Mark Atkinson — [www.artworks.co.uk](http://www.artworks.co.uk)

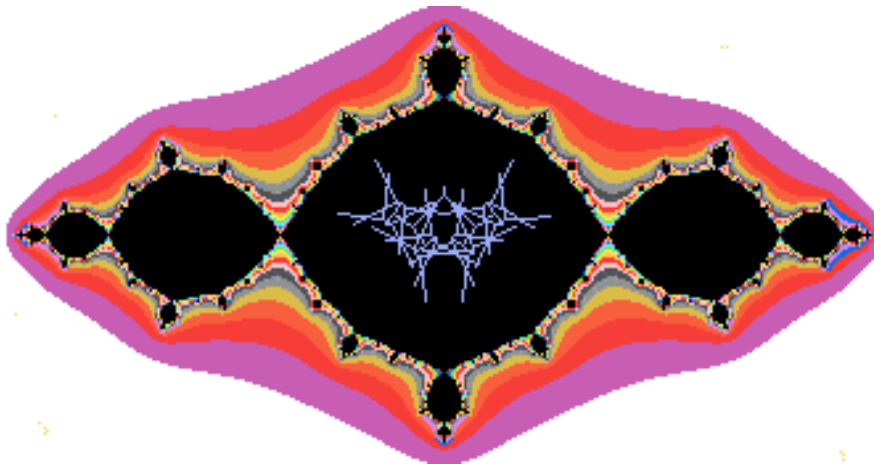




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■ **Introduction to Evolutionary Graphics by Computer**

Linda Moss — [www.marlboro.edu/~lmoss/planhome/index.html](http://www.marlboro.edu/~lmoss/planhome/index.html)



□ **Genetic L-System Programming**

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## Swarm Systems

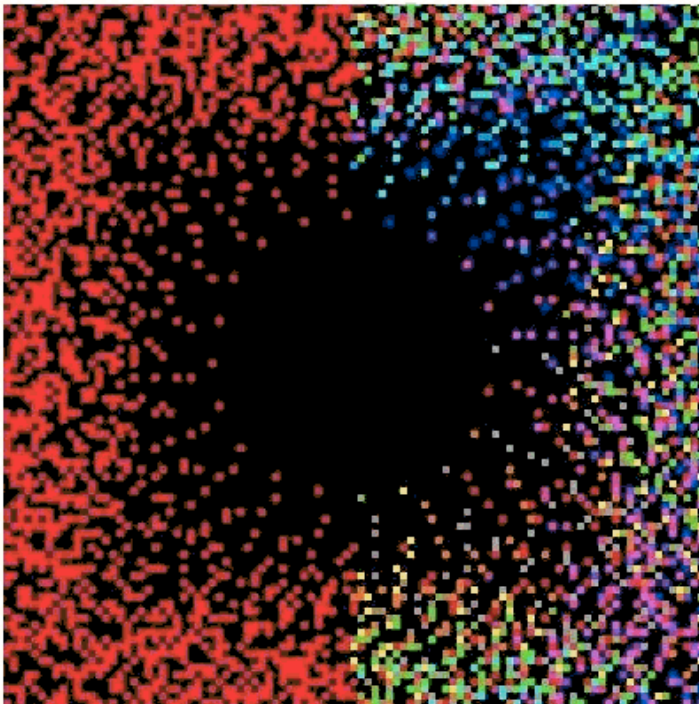
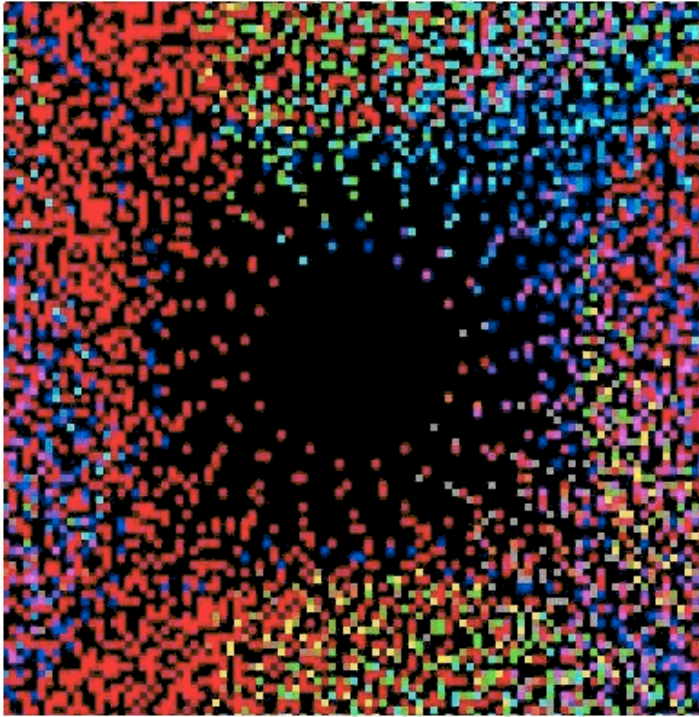
- **Cell Replication:**
- **Competitive Cell Replication:**
- **"BlocksWorld":**

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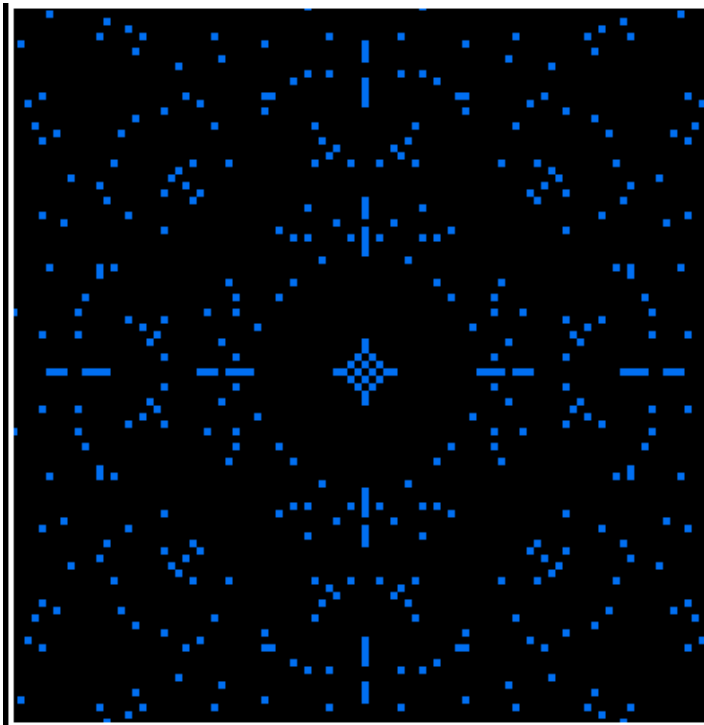
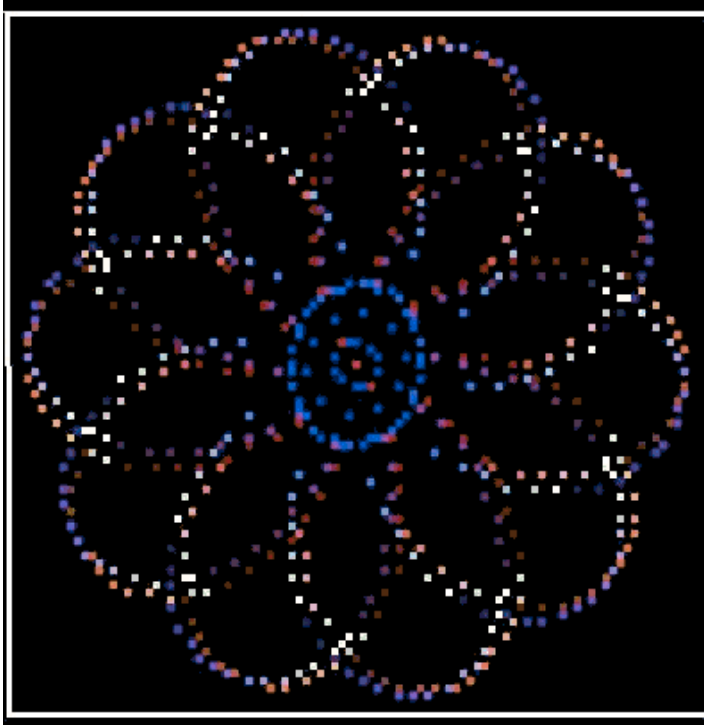
## Design by Swarms

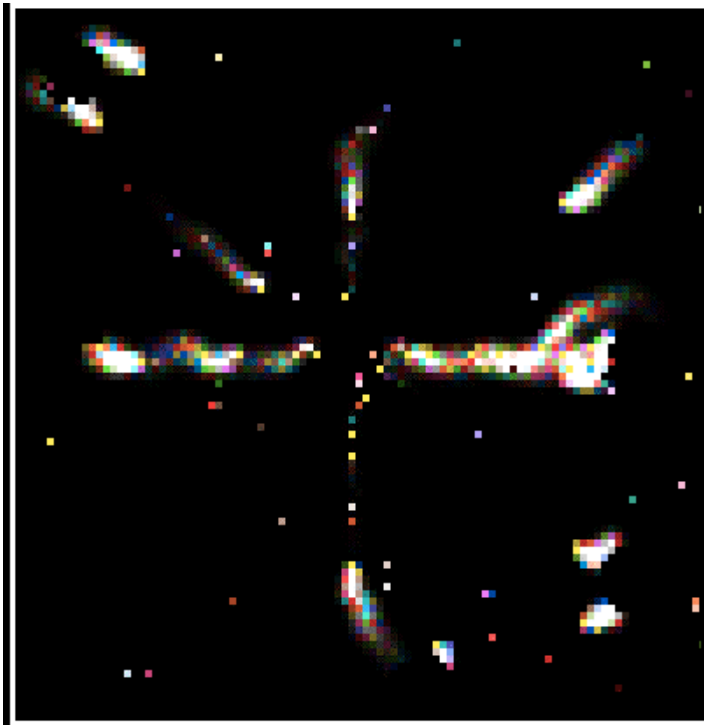
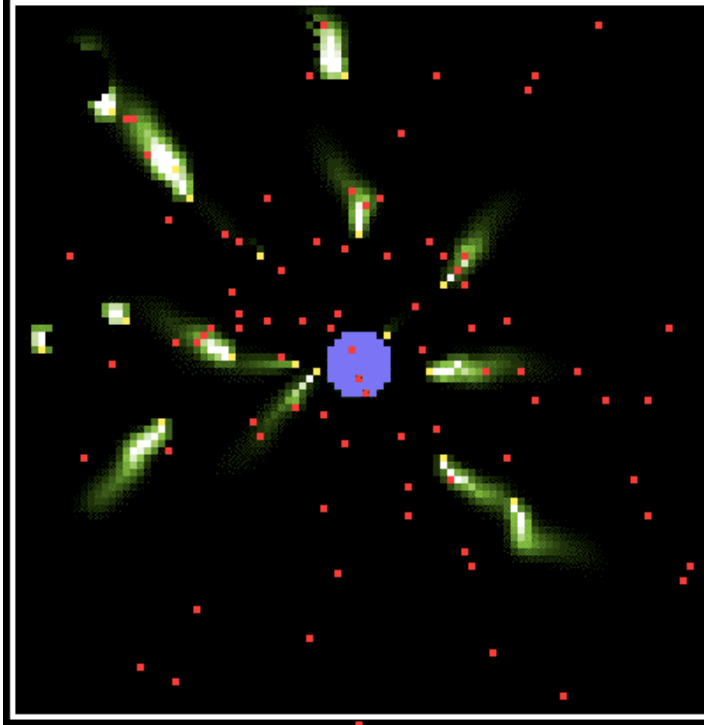
- **Turtle Art**

Example projects by [Namrata Khemka](#)





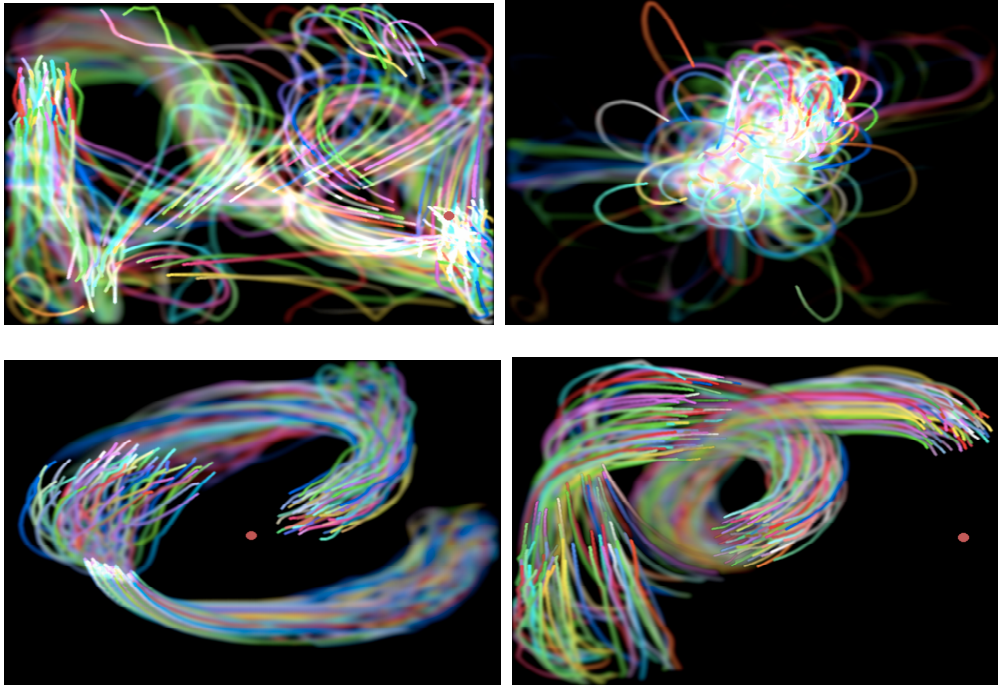




□ Self-Assembly

## □ Swarm Art

Swarm Art by Euan Forrester ([Euan's web page](#)):



## Projects in Evolutionary and Swarm Design

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References

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Online References

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*MathReader* and *Mathematica*

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