Jasmine Otto

✉ jotto3@uic.edu
math.uic.edu/~jotto3

Life inspires art inspires life. That is, some models are reified.

Education

2015–present **Seeking MS, Applied Math**, *University of Illinois at Chicago*, Chicago, IL.
Expected 2017. Passed MS Exam.

2012–2015 **BS, Mathematical Computer Science**, *University of Illinois at Chicago*.
Minor in Biology. Graduated *summa cum laude*.

2009–2012 **Work transferred**, *College of DuPage*, Glen Ellyn, IL.
Early admissions.

Experience

Research

Fall 2016 **Independent study**, *Ecological Sociobiology*, with Professor Lou Kauffman.
Memetic flow on a social graph. Patterns due to diffusivity, advection, nonlinear response.

Fall 2016 **Research assistant**, *Numerical Methods*, under Professor Rafail Abramov.
Compressible flow dynamics.

2016 **Independent study**, *Population Ecology*, with Professor Joel Brown.
Game-theoretic model of persistence of altruism due to reputation.

Summer 2013 **Visiting undergraduate**, *Electronic Visualization Laboratory*, UIC.
Agent-based pattern generation.

Teaching

Fall 2016 **Organizer**, *SIG Math Coding*, UIC ACM.

Spring 2016 **Teaching assistant**, *Applied Linear Algebra*, under Professor Chris Skalit.

Fall 2015 **Graduate mentor**, *Mathematical Computing Laboratory at UIC*.
Advised undergraduates visualizing simple closed curves on a hyperbolic surface in 4D.

Activity

June 2016 **Participant**, *SMS 2016: Dynamics of Biological Systems*, University of Alberta.
Supported by MSRI. Gave draft of altruism model at poster session.

October 2014 **Presenter**, *Undergraduate Mathematics Symposium*, UIC.
Presented undergraduate capstone on agent-based predator-prey dynamics.

2016 **Participant**, *Political Ecologies Working Group*, UIC Institute for the Humanities.

October 2016 **Attending**, *Procedural Generation Jam 2016*, online.

October 2015 **Attended**, *AMS Central Fall Sectional*, Loyola University Chicago.

Selected Works

August 2016 **Model**, *Vesicle Formation [Web]*.
By local interactions in discrete space and self-referential dynamics, demonstrates emergent pattern and extinction. Describes the same behavior that cells perform by mitosis, yet glosses over the molecular structure of the lipid bilayer.
Original model by Varela, Maturana, and Uribe. Software by Nicky Case.

Febuary 2016 **Model**, *Rug [Video]*.
An experiment with the Gierer-Meinhardt model of 2D pattern formation.

March 2013 **Model**, *Triangle Trisection [JAR]*.
Demo: the trisectors of any triangle form an equilateral triangle inside the figure.

Distinctions

May 2015 **Member**, Phi Beta Kappa.

April 2015 **Outstanding scholarship**, Biological Sciences at UIC, in BIOS 100 and 101.

Foreign Language

novice **Mandarin** *2 yrs college study, emphasis written.*

Computer Languages

scientific	R, Python, SAGE, Prolog	back-end	Java/Scala, C/C++
visual	Processing, Jupyter, NetLogo	domain specific	OpenFOAM
bridges	Processing.js, Cython, IRKernel	document	LyX, LaTeX

Interests

research Memetic evolution. Chained morphogens. Optimization in high-dimensional behavioral / developmental space. Cybernetics, cognition. Cliodynamics, socioecology.

teaching Interactive media for storytelling. Intuitive learning from narrative and context. Procedural generation to explore parameter space. Bridges between languages with appropriate interfaces or appropriate algorithms.