

MICHAEL CATCHEN - CURRICULUM VITA

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EDUCATION

University of Colorado, Boulder

Master of Arts, Ecology and Evolutionary Biology, GPA: 3.94

exp. May 2020

Committee: *Sam Flaxman (advisor), Dan Doak, Brett Melbourne, Julian Resasco*

Bachelor of Arts, Ecology and Evolutionary Biology, GPA: 3.94

exp. May 2020

RESEARCH EXPERIENCE

Metapopulation Fragmentation Model

Fall 2017 - Present

Flaxman Lab, University of Colorado at Boulder

A spatially-explicit, individual-based model of populations in fragmented habitats. Understanding the effects of habitat loss and fragmentation is one of the most pressing issues in conservation today, and the goal of mpfm is to enable us to understand how various different properties of the landscape, including patch connectivity, environmental heterogeneity/autocorrelation, and isolation-by-resistance affect the dynamics of populations in fragmented landscapes.

[Source Code on Github](#)

PROFESSIONAL EXPERIENCE

Dept. of Ecology and Evolutionary Biology, University of Colorado

Boulder, CO

Lab Assistant

Summer 2018

Lab assistant in the Melbourne Lab. Kept model *Tribolium* systems running, learned the logistics of running long-term ecological experiments in the laboratory.

Dept. of Applied Mathematics, University of Colorado

Boulder, CO

Learning Assistant

Spring 2016-Fall 2017

Taught calculus 1, 2, and 3 in a workgroup setting, gained experience in communicating abstract concepts, reframing mathematical ideas in different ways for different learners.

NASA Jet Propulsion Laboratory

Pasadena, CA

Software Engineering Intern

Summer 2017

Worked as a flight software engineer for LunarFlashlight and NEAScout 6U cubesats. Developed skills in planning and implementing flight software system architecture, unit testing, and integration testing on the flight software system level using C and Python.

NASA Jet Propulsion Laboratory

Pasadena, CA

Systems Engineering Intern

Summers 2015 and 2016

Created a content management system for the Mission Planning, Sequencing, and Analysis division's website. Developed skills using popular web frameworks for both front and back-end development. Learned skills in asynchronous web development.

COURSEWORK

Math

Multivariable Calculus, Differential Equations, Linear Algebra, Probability Theory, Stochastic Processes

Computing

Data Structures, Algorithms, Computer Systems, Software Engineering Methods

Biology

Genomics, Phylogenetics

SKILLS

Languages	R, C/C++, Python, Bash, MATLAB, L ^A T _E X.
Software & Tools	git, tidyverse, numpy/scipy/pandas, Adobe Photoshop, Adobe Illustrator
Operating Systems	UNIX, macOS, Linux (Ubuntu, Redhat)

REFERENCES

Dr. Samuel M. Flaxman
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