

I'm a postdoctoral scholar in biology with extensive skills in bioinformatics, statistical methods, and programming. I get excited about making sense of messy and difficult data; I'm not afraid of developing novel analyses; and I love to create data visualizations to make complex data and ideas accessible to all. I am seeking a position that utilizes and challenges my expertise in data science and programming.

---

## EXPERIENCE

### ***University of Notre Dame***

#### **NSF Postdoctoral Fellow (5/12 to present)**

I lead a project that estimates forest composition by sequencing DNA from fossils. I design and implement simulations of genetic data, develop statistics, visualize data, and write manuscripts.

### ***Louisiana State University***

#### **NSF Postdoctoral Fellow (1/10 to 5/12)**

As an [NSF sponsored Postdoctoral Fellow](#), I developed statistical methods used to reconstruct past geographic range changes of species as a result of changes in climate. This project utilized approximate Bayesian statistical computational methods.

### ***PhyloGeoViz.org***

#### **Developer (5/07 to present)**

I designed, implemented (Javascript and PHP), tested, deployed, and now maintain the program [PhyloGeoViz](#), an open-source, web-based visualization tool that plots genetic data in Google Maps or Google Earth. This project was kickstarted by my participation in the [Google Summer of Code 2007](#).

### ***Duke University***

#### **Ph.D. Student (08/02 to 12/09)**

I studied the historical range expansion of a parasitic plant following the last ice age. This involved quantitative comparisons between genetic and fossil datasets for parasite and host species. I utilized spatial linear models, Bayesian coalescent based analyses, and numerous phylogeographic and landscape genetic methods.

## COMMUNITY & OUTREACH

I was the Planning Committee Chair ('07-'09) and Webmaster ('05-'09) for [Women in Science and Engineering](#) at Duke.

I was a coordinator and mentor for the [Howard Hughes Precollege science program](#) ('07-'08) that provided research experience to high school students from underrepresented groups.

## SKILLS

R programming  
Bayesian statistics  
Bioinformatics  
Linear modeling  
Geographic Information Systems  
Molecular biology  
Phylogenetics

## EDUCATION

### ***Duke University***

#### **Ph.D. Biology (2002-2009)**

Dissertation: Host constraints on the post-glacial migration history of the parasitic plant, *Epifagus virginiana*

### ***Univ. of Colorado at Boulder***

#### **B.A. EPO Biology and Biochemistry (1998-2002)**

Summa cum laude, Outstanding Graduate for the College of Arts and Sciences (valedictorian)

## AWARDS

National Science Foundation (NSF) Postdoctoral Fellowship in Biology, NSF Doctoral Dissertation Improvement Grant, NSF Graduate Research Fellowship, James B. Duke Fellowship, and 14 other research grants over the last 10 years.

*A list of publications and presentations can be found on my website, [ericatsai.com](http://ericatsai.com).*