MATTHEW GROBIS

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106A Guyot Hall, Princeton University
Princeton, NJ 08544

EDUCATION and RESEARCH

2018*   **Princeton University**   **expected graduation date*
Ecology and Evolutionary Biology PhD program
April 2015: Achieved PhD Candidacy
Advisors: Iain Couzin and Dan Rubenstein

2013   **Max Planck Institute for Ornithology, Seewiesen**
U.S. Fulbright research fellow
Advisor: Niels Dingemanse

2012   **University of Illinois at Urbana-Champaign**
B.Sc. in Integrative Biology Honors
Graduated with High Distinction (Biology); Cum Laude (University)
Advisor: Alison Bell

EXTERNAL GRANTS and FELLOWSHIPS

2017   National Science Foundation Doctoral Dissertation Improvement Grant
2013   National Science Foundation Graduate Research Fellowship
2012   U.S. Student Fulbright grant to Germany

PEER-REVIEWED PUBLICATIONS

[3]   Pruitt JN, Wright CM, Keiser CN, DeMarco A, **Grobis MM**, Pinter-Wollman N. (2016) The Achilles' Heel Hypothesis: Misinformed keystone individuals impair collective learning and reduce group success. ***Proceedings of the Royal Society B***. 283: 20152888.

[2]   Stuber EF, **Grobis MM**, Abbey-Lee R, Kempenaers B, Mueller JC, Dingemanse NJ. (2014) Perceived predation risk affects sleep behaviour in free-living great tits (*Parus major*). ***Animal Behaviour***. 98: 157-165.

[1]   **Grobis MM**, Pearish SP, Bell AM. (2013) Avoidance or escape? Discriminating between two hypotheses for the Function of schooling in threespine sticklebacks. ***Animal Behaviour***. 85: 187–194.

PROGRAMMING LANGUAGES
Examples: https://github.com/mmgrobis, https://mattgrobis.com/science-life

Advanced: R, Python

Intermediate: LaTeX, Markdown

Beginner: SQL, C++

TEACHING EXPERIENCE

Teaching Assistant	Princeton University	Princeton, NJ, USA
- *Introductory Biology*	EEB 211	Fall Semester 2013
- *Behavioral Ecology*	EEB 323	Fall Semester 2014
- *Biology of Coral Reefs*	EEB 346	Spring Semester 2018
Course Author and Instructor	Princeton University	Princeton, NJ, USA
- *How to Talk Science*	10030	Intersession 2016
- *Introductory Statistics and R*	None (informal)	May – July 2017
President / Instructor	Univ. IL at Urbana-Champaign	Champaign, IL, USA
- *Shotokan Karate Club*	Student Organization	Spring 2009 – July 2012

ORGANIZATIONAL EXPERIENCE

PPRC graduate student conference co-organizer   *Spring 2014, 2015, 2016*
- Annual graduate student conference between Princeton, University of Pennsylvania, Rutgers, and Columbia ecology and evolution departments
- **2016, 2014:** advertised conference, recruited speakers, arranged transportation
- **2015:** advertised conference, recruited speakers, reserved rooms and food, coordinated travel, chaired conference

Princeton EEB Statistics series co-founder and co-organizer   *Spring 2016*
- Helped organize a series of statistical workshops led by graduate students and postdocs in the Ecology and Evolutionary Biology department at Princeton
- Delivered the lectures "Intro to Data Visualization in R" and "Intro to Programming in R"

Undergraduate team management   *Spring – Summer 2017*
- Hired, taught, and managed a team of seven Princeton undergraduates for data processing related to my thesis work

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PROFESSIONAL SERVICE

Statistics Without Borders   *December 2017*
Coding Volunteer
- Member of a team (4 people) that translated a WHO client's data processing workflow from Excel to R
- Wrote R scripts to consolidate data from multiple sources, clean and reshape the data, and output a compiled data set

Institutional Animal Care and Use Committee   *Fall 2015 – Fall 2017*
Graduate student representative
- Reviewed all protocols involving vertebrate research at Princeton at monthly meetings, inspected animal research facilities semiannually

Ad Hoc Reviewer   *Spring 2013 – present*
- Perform peer review on submissions to academic journals
- *Animal Behaviour*, *Behavioral Ecology*, *Environmental Biology of Fishes*, *Frontiers in Applied Mathematics and Statistics, Journal of Animal Ecology*, *New Journal of Physics*

SCIENCE OUTREACH

Director and Co-Founder, Princeton Open Labs   *December 2015 – Summer 2017*
- Organized science outreach talks and activities for local elementary, middle, and high schools

- Hopewell Elementary School, Hopewell, NJ: *Spring 2016*
  Coordinated with school administration and established interactive lecture series, delivered "Animal Collectives" interactive lecture to 3rd, 4th, and 5th graders. (~90 students total)

- Princeton-area middle and high schools, Princeton, NJ: *March, May, October 2016*
  Helped organize and run 3 on-campus science outreach events, delivered "Animal Collectives" and "The Path to Science" lectures to 7th-12th graders. (~200 students total)

- Phi Kappa Psi Fraternity, Trenton, NJ: *June 2016*
  Organized and gave 2 interactive science lectures to teenagers in the Phi Kappa Psi Fraternity in Trenton, a historically underprivileged area in New Jersey (~30 students total)

- Vernon Hills High School, Vernon Hills, IL: *November 2015*
  Delivered lecture to AP Biology students about academia and how to develop transferrable skills

Managing Editor and Co-Founder, *Highwire Earth*   *Fall 2015 – Summer 2017*
- Princeton-affiliated sustainable development blog with an interdisciplinary focus
- Wrote posts, found contributors, and edited submissions prior to publication on the website

Science fair judge, Hopewell Elementary School   *Spring 2015, 2016*
- Evaluated 4th-grade science projects and provided feedback to students

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SELECTED BLOG POSTS

Machine learning
1. Multivariate linear regression via gradient descent

Frequentist statistics
1. Visualizing the danger of multiple t-test comparisons

Introduction to programming in R
1. What is R?
2. Random data and plotting
3. For loops and random walks
4. Functions and if statements
5. The apply functions

Data visualization and other fun projects
1. Visualizing my daily commute
2. Are for loops or apply faster?
3. Comparing scalars, vectors, and matrices