

# ERICA K BAKEN, PhD

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she/her/hers

Science Department  
Chatham University  
Pittsburgh, PA 15232

## PROFESSIONAL APPOINTMENTS

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- Since 2020 **Postdoctoral Fellow**, Chatham University, Dr. Michael Collyer  
*Preparing Liberal Arts Computational Scholars*
- 2016 - 2020 **Graduate Research Assistant**, Iowa State University, Dr. Dean Adams  
*Macroevolution of Microhabitat, Morphology, & Climate in Plethodontidae*
- 2015 - 2018 **Graduate Teaching Assistant**, Iowa State University
- 2013 - 2015 **Laboratory Assistant**, University of Minnesota, Dr. Emilie Snell-Rood
- 2013 - 2015 **Writing Assistant**, Augsburg College, Dr. Kevin Potts
- 2012 - 2013 **Field Researcher**, AIS Inc, Alaska Fisheries Groundfish Observer

## EDUCATION

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- 2020 **PhD Ecology & Evolutionary Biology**, minor: Statistics, *summa cum laude*,  
Iowa State University, Advisor: Dr. Dean Adams
- 2012 **BA Biology**, Pomona College, Thesis Advisor: Dr. Nina Karnovsky

## TEACHING & MENTORSHIP EXPERIENCE

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### *Lead Instructor*

- F 2021 **Applied Human Biology** (BIO 135), 3 credits, Chatham University  
Designed **lecture course** on student selected topics in human biology  
36 undergraduate non-biology-major students, virtual & in-person
- F 2021 **Elementary Statistics** (MTH 110), 3 credits, Chatham University  
Designed **lecture course** on basic statistical theory & literacy  
31 undergraduate students, various majors, virtual & in-person
- Sp 2021 **The Organism** (BIO 144), 3 credits, Chatham University  
Designed 2 sections of **flipped course**, 2<sup>nd</sup> in the introductory series  
~30 undergraduate students per section, virtual & in-person
- Sp 2020 **Discussions in Ecology & Evolution Research** (BIO 495), 1 credit, ISU
- Sp & F 2019 Designed **discussion course** reading and critiquing primary literature
- Sp 2018 Passed materials to new graduate students to continue course
- Sp & F 2017 6-14 undergraduate biology-major students per semester
- Sp 2019 **The Yellowstone Experience** (NREM 496b), 2 credits, ISU  
Designed & led a **10-day field trip course** with co-instructor Dr.  
Rentz, including literature discussions & field research projects  
15 undergraduate biology-major students
- Su 2018 **Introductory Biology** (BIO 101), 3 credits, ISU  
*Knaphus Teaching Fellowship*  
Designed **lecture, active learning, lab course** with 2 local field trips  
4 undergraduate non-biology-major students

**Teaching Assistant**

- F 2018 **Vertebrate Biology Lab** (BIO 365L), 4 credits, ISU  
F 2017 Lectured & led 110-min stand-alone laboratory classes each week  
F 2016 Designed, graded, & provided feedback on tests, worksheets, & essays  
F 2015 ~24 junior-level students per section, 2 sections per semester  
Sp 2016 **Principles of Biology II Lab** (BIO 212L), 3 credits, ISU  
Lectured & led 110-min stand-alone laboratory classes each week  
Graded & provided feedback on quizzes, & lab reports  
~24 sophomore-level students per semester, 2 sections per semester

**Guest Lecturer**

- F 2019 Herpetology: Wrote & delivered lecture on my herpetology research  
F 2019 Vertebrate Biology: Amended & delivered lecture on Nervous Systems  
F 2018 Statistical Analyses in R: Wrote & delivered workshop on R Studio  
F 2018 Vertebrate Biology: Amended & delivered lecture on Chordate Biology  
F 2018 Vertebrate Biology: Amended & delivered lecture on Systematics  
Sp 2017 Community Ecology: Wrote & delivered lesson on Biodiversity  
Sp 2017 Community Ecology: Wrote & delivered lesson on Disease Ecology  
F 2016 Vertebrate Biology: Amended & delivered lecture on Respiration  
F 2016 Vertebrate Biology: Amended & delivered lecture on Circulation

**Mentorship**

- Since 2021 Lab Technician: Jordan Hooks  
Since 2021 Undergraduate Research Assistant: Lauryn Shamblee  
Since 2021 Undergraduate Research Assistant: Damiana Bradley-Slagle  
2016–2019 Undergraduate Research Assistant: Lauren Mellenthin  
**Co-authored two papers, four posters, & four oral presentations**  
delivered at national & international societal conferences  
Currently Ph.D. student in EEB department at Yale University  
Awarded GRFP

**PUBLICATIONS**

◇ undergraduate mentee

*In Prep*

11. **Baken EK**, D Bradley-Slagle◇, A Seago, & ML Collyer. Morphological evolution is constrained by chemical defense evolution in *Lagrinii*.

*Published or Accepted*

10. Collyer ML, **EK Baken**, & DC Adams. *Accepted*. A standardized effect size for evaluating and comparing the strength of phylogenetic signal. MEE.  
9. **Baken EK**, ML Collyer, A Kaliontzopoulou, & DC Adams. 2021. geomorph 4.0 and gmShiny: enhanced analytics and a new graphical interface for a comprehensive morphometric experience. MEE.  
8. **Baken EK**, LE Mellenthin◇, & DC Adams. 2021. Is salamander arboreality limited by broad-scale climatic conditions? PLoS One 16(8): e0255393.  
7. **Baken EK**, & MK O'Donnell. 2021. Clinging ability is related to particular aspects of foot morphology in salamanders. Ecol Evol 11(16): 11000-11008.

6. Dooley SK, **EK Baken**, W Moss, A Howe, & JK Young. 2021. Identification and evolution of Cas9 tracrRNAs. *The CRISPR Journal* 4(3): 438-447.
5. **Baken EK**, DC Adams, & MS Rentz. 2020. Jigsaw method improves learning and retention for observation-based undergraduate biology laboratory activities. *J Biol Educ*: 1-6.
4. **Baken EK**, LE Mellenthin  $\diamond$ , & DC Adams. 2020. Macroevolution of desiccation-related morphology in plethodontid salamanders as inferred from a novel surface area to volume ratio approach. *Evol* 74(2): 476-486.
3. **Baken EK**, & DC Adams. 2019. Macroevolution of arboreality in salamanders. *Ecol Evol* 9: 7005-7016.
2. Potts KB, **E Baken**, A Levang, & DP Watts. 2016. Ecological factors influencing habitat use by chimpanzees at Ngogo, Kibale National Park, Uganda. *Am J Primatol* 78: 432-440.
1. Potts KB, **E Baken**, S Ortmann, DP Watts, & RW Wrangham. 2015. Variability in population density is paralleled by large differences in foraging efficiency in chimpanzees (*Pan troglodytes*). *Int J Primatol* 36: 1101-1119.

#### FELLOWSHIPS, GRANTS, & AWARDS (\$24,258 total)

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2020	ISU EEB Research Excellence Award	
2019	ISU EEB Teaching Excellence Award	
	ISU Professional Development Grant	\$500
	ISU EEOB Departmental Travel Grant	\$250
	ISU GPSRC Best Oral Presentation Award	\$150
	Preparing Future Faculty, <b>Fellow</b>	
2018	ISU George Knaphus Teaching Fellowship	\$6,518
	ISU Brown Graduate Fellowship	\$10,000
	ISU Professional Development Grant	\$500
	ISU EEOB 3-Minute-Thesis Competition, <b>1<sup>st</sup> Place</b>	
	Preparing Future Faculty, <b>Scholar</b>	
2017	California Academy Stearn's Grant	\$300
	SSB Graduate Student Research Award	\$1,700
	ISU Wakonse Fellowship for Excellence in Teaching	\$700
	ISU Teaching as Research Grant	\$1,250
	ISU Graduate College Interdepartmental Travel Grant	\$750
	ISU EEOB Departmental Travel Grant:	\$750
	ISU Professional Development Grant	\$200
	ASIH Stoye Best Student Presentation Award, JMIH	\$300
	CIRTL, <b>Associate</b>	
2016	Reiman Gardens Science Communication Fellowship	
	ISU Professional Development Grant	\$180
	ISU EEB Program Travel Grant	\$100
	ISU EEOB Departmental Travel Grant	\$110
	Preparing Future Faculty, <b>Associate</b>	

**INVITED & CONTRIBUTED PRESENTATIONS** \* presenter, ◇ undergraduate mentee

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- 2021 **Baken EK\***: Talk, *Evolution, Virtual*  
 Collyer ML\*, DC Adams, & **Baken EK**: Talk, *Evolution, Virtual*  
**Baken EK\***: Key-Note Address, *Science Research Day, Chatham University*  
**Baken EK\***, LE Mellenthin◇, & DC Adams: Talk, *Asilomar, Virtual*
- 2020 **Baken EK\***, LE Mellenthin◇, & DC Adams: Talk, *EEB Symposium, ISU*  
**Baken EK\***. Invited 50-min Talk. *R Statistics Seminar, ISU*
- 2019 **Baken EK\***, LE Mellenthin◇, & DC Adams: Poster, *Evolution, RI*  
**Baken EK**, LE Mellenthin◇\*, & DC Adams: Poster, *Evolution, RI*  
**Baken EK\*** & DC Adams: Talk, *Evolution, RI*  
**Baken EK\***: Talk, *Graduate & Professional Student Research Conference, ISU*  
**Baken EK\*** & LE Mellenthin◇: Invited 50-min Talk, *R Stats Seminar, ISU*  
**Baken EK\***: Invited 50-min Talk, *Reptile & Amphibian Club, ISU*
- 2018 **Baken EK\*** & DC Adams: Talk, *JMIH, NY*  
**Baken EK\***, M Rentz & DC Adams: Poster, *SABER, MN*  
**Baken EK\***: Invited 50-min Talk, *R Stats Seminar, ISU*  
**Baken EK\***: Talk, *EEB Symposium, ISU*  
**Baken EK\***: 3-min Thesis, *EEOB 3 Minute Thesis Competition, ISU*
- 2017 **Baken EK\*** & DC Adams: Talk, *JMIH, TX*  
**Baken EK\*** & DC Adams: Talk, *Evolution, OR*  
**Baken EK\*** & DC Adams: Invited 50-min Talk, *R Stats Seminar, ISU*  
**Baken EK\***: Invited 50-min Talk, *Reptile & Amphibian Club, ISU*

**INSTITUTIONAL SERVICE & OUTREACH**

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- 2021 R package ‘geomorph’: **Contributing Author**  
 R Shiny app ‘gmShiny’: **Sole Author**  
 Virtual Evolution Conference: **Session Moderator**  
 Chatham University’s Student Scholarship Interview Day: **Interviewer**
- 2020 Letters to a Pre-Scientist: **STEM Professional**
- 2019 ISU STEM Conference for Girls: **Presenter (11x) & Volunteer (2x)**  
 ISU EEOB Faculty Search Committee: **Graduate Student Representative**  
 ISU Graduate Student Organization: **Honors & Awards Representative**
- 2018 ISU EEB Graduate Student Organization: **Social Chair**  
 STEM-Scholars Graduate School Application Workshop: **Volunteer**  
 LunchinatoRs: ISU EEOB’s R Community Group: **Organizer**
- 2017 ISU EEOB Graduate Student Organization: **Secretary**  
 ASIH Student Workshop: **Planning Committee Member**  
 FIRST LEGO® League State Competition: **Volunteer Core Values Judge**  
 ISU EEB Graduate Student Organization: **Social Chair**
- 2016 Reiman Gardens Public Outreach Events: **Presenter (3x)**
- Reviewed Manuscripts (n = 15) for:** Am Antiq (2x); Am Nat; Copeia; Ecol Evol; Ethol  
 Ecol Evol; Evol (2x); ICB; J Evol Biol; J Fish Biol; MEE (2x); Palaeogeogr,  
 Palaeoclimatol, Palaeoecol; Sci Rep

## **PROFESSIONAL DEVELOPMENT**

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- 2017 Carl Gans Workshop on CT Imaging Technology & Morphology
- 2016 Workshop in Phenomics: Geometric Morphometrics Using R  
Workshop in Comparative Phylogenetics & Niche Modeling in R

## **AFFILIATIONS**

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- Since 2019 National Center for Science Education
- Since 2018 Society for the Advancement of Biology Education Research
- Since 2017 American Naturalist
- Since 2016 Society for the Study of Evolution
- Since 2016 Society for Systematic Biologists
- 2015 - 2020 American Society of Ichthyologists & Herpetologists
- 2015 - 2020 Herpetologists' League
- 2016 - 2018 Society for Advancement of Chicanos & Native Americans in Science