Austin M. Smith, Ph.D.

Curriculum Vitae

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**EDUCATION**

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| December 2024 | **Doctor of Philosophy**, University of South Florida, Tampa, FL  Major: Integrative Biology - Ecology & Evolution  Advisor: Andrew M. Kramer  Dissertation: “Species distribution models with environmental time series data and deep learning*”* |
| May 2018 | **Master of Science**, University of Florida, Gainesville, FL  Major: Interdisciplinary Ecology – Wildlife Ecology & Conservation  Advisors: Wendell P. Cropper Jr.; Michael Moulton  Thesis: “A comparison of machine learning methods to classify Chukar Partridge (*Alectoris chukar*) establishment patterns in Washington state” |
| August 2013 | **Bachelor of Arts**, University of Florida, Gainesville, FL  Major: Mathematics  Minor: Secondary Education |

**ACADEMIC APPOINTMENTS**

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| May 2020 – Dec. 2024 | **Graduate Research Assistant**, University of South Florida, Tampa, FL  Contributed projects include:   * Assessing spatial patterns of invasive pathway * Nowcast modeling of Covid-19 infections * Integrating time series analysis into long-term species dispersion models * Correlating environmental factors to presence of Chronic Wasting Disease   Duties included: conducting literature reviews to gather relevant academic sources and synthesize findings; data collection through fieldwork, surveys, lab experiments, and other research methods.; analyzing data via R and Python statistical software and GIS; supporting the interpretation of results; and contributing to the writing of research papers, reports, and other academic documents. |
| Aug. 2019 – May 2024 | **Graduate Teaching Associate,** University of South Florida, Tampa, FL  Duties included: Preparing course materials, delivering lectures, and facilitating recitation or review sessions; grading/assessing student work, including assignments, exams, and lab reports; overseeing course platforms (e.g., Canvas), distributing materials, and addressing student questions; and holding scheduled office hours to offer academic guidance to students, clarifying course content, assisting with assignments, and preparing for exams. |
| Oct. 2018 – Jan. 2020 | **Research Assistant,** University of South Florida, Tampa, FL  Contributed projects include:   * Determining best statistical protocols for modeling invasive species spatial distributions   Duties included: conducted literature reviews to gather relevant research for ongoing projects; assisted with data collection for research projects and lab experiments; analyzed data using R and Python statistical software, and helped interpret the results; and write research papers, reports, and contributing to peer-reviewed journal articles. |
| Aug. 2015 – Jun. 2018 | **Graduate Teaching Assistant,** University of Florida, Gainesville, FL  Duties included: Perform independent research under the guidance of faculty members; analyze and simulate data for faculty research projects; assist with literature searches; conduct and assist classroom lectures; overseeing course platforms (e.g., Canvas), distributing materials, and addressing student questions; hold scheduled office hours to offer academic guidance to students, clarifying course content, assisting with assignments, and preparing for exams; and participate in field studies and record avifaunal behavior, presence, distribution, and habitat usage |

**GRANTS & FELLOWSHIPS**

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| Aug 2023 – Dec 2023 | *Dissertation Completion Fellowship*, Office of Graduate Studies, University of South Florida, Tampa, FL. $9,000 + tuition & fees |
| June 2023 | *Conference Travel Award*, Department of Integrative Biology, University of South Florida, Tampa, FL, $2236.67 |
| June 2017 | *Conference Travel Funding*, Department of Wildlife Ecology and Conservation, University of Florida, $1300 |

**PEER-REVIEWED PUBLICATIONS**

*Published:*

* **A. M. Smith**, W. P. Cropper Jr., M. P. Moulton. 2021. A quantitative assessment of site-level factors in influencing Chukar (*Alectoris chukar*) introduction outcomes. <https://doi.org/10.7717/peerj.11280>

*In review:*

* **A.M. Smith**, C. Capinha, A. M. Kramer. Incorporating environmental time series into species distribution models.  *In review*
  + **Pre-print available on bioRxiv**: <https://doi.org/10.1101/2022.10.26.513922>

*In preparation:*

* **A. M. Smith**, W. P. Cropper Jr., M. P. Moulton. Machine learning as a tool for managing game bird introductions.
* M. P. Moulton, W. P. Cropper Jr., **A. M. Smith**. A comment on Rock Partridge (*Alectoris graeca*) introductions.
* **A.M. Smith**, A. M. Kramer. Assessing deep learning protocols for optimizing time series-based species distribution models
* **A.M. Smith**, A. M. Kramer. Forecasting Species Distributions with Time Series Classification Models

**PRESENTATIONS** *\* Presenting author*

*Contributed:*

## A. M. Smith, W. P. Cropper Jr.\*, M. Moulton. Introductions of chukars (*Alectoris chukar*) in the United States. 85th Annual Meeting of the Association of Southeastern Biologists. March 2024, Chattanooga, TN

* **A. M. Smith\***, C. Capinha, A. M. Kramer. Species distribution modeling with time series data and deep learning. (poster). University of South Florida Artificial Intelligence + X Symposium. September 2023, Tampa, FL.
* **A. M. Smith\***, A. M. Kramer. Assessing deep learning protocols for optimizing time series-based species distribution models. (poster). Ecological Society of America Annual Meeting. August 2023, Portland, OR.
* **A. M. Smith\***, C. Capinha, A. M. Kramer. Predicting species distributions with environmental time-series data and deep-learning. Ecological Society of America Annual Meeting. August 2021, Virtual.
* **A. M. Smith\*,** W. P. Cropper Jr., M. Moulton. A comparison of machine learning methods to classify Chukar Partridge (*Alectoris chukar*) establishment patterns in Washington State. (poster). Ecological Society of America Annual Meeting. August 2018, New Orleans, LA.

*Invited*:

* University of South Florida, Department of Integrative Biology seminar series. A comparison of machine learning methods to classify chukar establishment patterns in Washington state. November 2019.
* University of South Florida, USF Math Club speaker series. Mathematics and machine learning: tools for niche theory & species distribution models. October 2019.

**COURSE TAUGHT**

*Primary instructor:*

* **Instructor**, BSC2011L – Biodiversity, University of South Florida. Lab. 2 sections, 24 students (each).
  + Semesters taught: Fall 2024; Spring 2023; Fall 2022; Spring 2020; Fall 2019.
* **Instructor**, PCB3043L – Principles of Ecology, University of South Florida. Lab. 2 sections, 23 students (each).
  + Semesters taught: Spring 2022

*Secondary instructor*

* **Teaching Assistant**, BSC2011 – Biodiversity, University of South Florida. Lecture. 1 section, ~250 students.
  + Semesters taught: Spring 2023
* **Teaching Assistant**, WIS 2040 – Wildlife Issues in a Changing World, University of Florida. 3 section, ~ 150 students (each).
  + Semesters taught: Spring 2018; Fall 2017; Summer 2017; Spring 2017; Fall 2016; Summer 2016; Spring 2016
* **Teaching Assistant**, WIS 2552 – Biodiversity Conservation: Global Perspectives, University of Florida. Online. 1 section, 50 students.
  + Semesters taught: Spring 2018; Fall 2017; Summer 2017; Spring 2017; Fall 2016; Summer 2016; Spring 2016

*Guest lecturer:*

* PCB 6456C – Biometry (graduate course), University of South Florida. Lecture and lab. Spring 2024
* PCB 6456C – Biometry (graduate course), University of South Florida. Lecture and lab. Spring 2023

**MENTORING**

* Jordan Kaszyk (B.S. Cellular and Molecular Biology, University of South Florida. Spatial modeling of Chronic Wasting Disease. Spring 2020 – Summer 2022
* Raquel Gonzalez (B.S. Integrative Animal Biology), University of South Florida. Spatial modeling of invasive species. Fall 2019

**PROFESSIONAL SERVICES**

**Journal Reviews:**

* General Ecology:Ecosphere (1)

**Community Experience:**

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| 2018 – Present | *Lead Caretaker & Community Educator*, Bird of Prey Aviary, Boyd Hill Nature Preserve, St. Petersburg, FL |

**Professional Affiliations**:

American Association for the Advancement of Science (2018-2021); American Ornithological Society (since 2018); British Ecological Society (since 2022); Ecological Society of America (since 2017); The Wildlife Society (since 2018)