

# Nicholas K. Fletcher

Chemical and Biological Sciences Department  
Montgomery College, Takoma Park/Silver Spring Campus  
Phone: (949) 433-9933      nfletch00@gmail.com

## Education:

- PhD** *Ecology and Evolutionary Biology, Cornell University* 2019  
Advisor: Jeremy Searle  
Committee: Matt Hare, Jerry Herman, Nina Therkildsen, Richard Harrison
- BA** *Integrative Biology, University of California Berkeley* 2009  
Graduated with honors

## Teaching Experience:

### Montgomery College, Takoma Park/Silver Spring:

**Instructor**, Biol 150/L: Introduction to Biology I (x2) 2019, 2020  
Lecturer and instructor for two ~24-student, introductory biology classes. Wrote and performed twice-weekly lectures and weekly associated labs. Designed coursework and exams. Led lab demonstrations, created assignments, and facilitated lab training.

### Cornell University:

**Field course instructor**, BioEE 2525 Winter 2020  
Instructor for Ecology and Conservation of the Neotropics, a 12-student field course based out of Puerto Madryn, Argentina. Responsible for leading paper discussions, designing research projects, mentoring undergraduates, and providing research support.

**Instructor of record**, BioEE 2070/ STS 2781: Evolution 2018  
Lecturer and instructor for ~45 student, non-majors class on evolution. Wrote and performed weekly lectures. Created syllabus, designed coursework and exams, assigned readings, organized guest lecturers, and led discussions.

**Instructor of record**, BioEE 4980: Teaching Experience 2018  
Instructor/ mentor for three undergraduate teaching assistants for BioEE 2070.

**Instructor/Lecturer**, BioEE 2070/ STS 2781: Evolution 2017  
Co-organizer and lecturer for ~50 student, non-majors class in evolution.

**TA**, BioEE 1780: Galápagos Writing in the Majors 2016  
Unique course focused on students from underrepresented groups in biology, centered on an experiential learning trip to the Galapagos. Developed and created syllabus, assignments, readings, and other course material. See examples of student work: <https://bit.ly/2yCITxB>

**TA**, BioEE 2740: Vertebrates: Structure, Function and Evolution Lab 2014, 2017, 2018  
Led specimen-based labs focused on evolution, diversity and morphology of vertebrates.

|  |      |
|--|------|
| TA, BioEE 4501: Mammalogy Lab  | 2015 |
| Led specimen-based labs and a field trip focused on evolution and diversity of mammals.            |      |
| TA, BioEE 4701: Herpetology Lab  | 2015 |
| Led specimen-based labs and a field trip focused on evolution and diversity of herps.              |      |
| TA, BioEE 2070: Evolution  | 2014 |
| Single/Head TA for discussion-focused, non-majors evolution course with 60 students.               |      |
| TA, BioEE 1780: Evolutionary Biology and Diversity   | 2013 |
| Discussion- and activities-focused section with field trips related to evolution and biodiversity. |      |

### Other Teaching Experience:

|  |            |
|--|------------|
| Invited Lecture: NTRES 3400: Molecular Tools for Conservation, Cornell | 2018, 2019 |
| Invited Lecture: BIOG1250: Seven Nights at the Museum of Vertebrates   | 2018       |
| Invited Lecture: Population Genetics, University of Colorado Boulder   | 2017       |
| Teaching as Research National Conference, Cornell University           | 2017       |
| Practice of Inclusive Teaching in STEM Workshop, Cornell University    | 2016       |
| Invited Lecture, BIOEE 4700, Herpetology, Cornell University           | 2015       |
| Invited Lecture, BIOEE 2740, Vertebrates, Cornell University           | 2014       |
| Invited Lecture, BIOEE 4701, Herpetology Lab, Cornell University       | 2013       |
| Instructor, BIOEE 4501, Mammalogy Field Techniques, Cornell            | 2013       |
| Instructor, Non-Model Genomics Workshop, Cornell University            | 2013       |
| Instructor, New York Master Naturalist Program, Cornell University     | 2012       |
| Instructor, Santiago Creek Alternative High School, Santa Ana, CA      | 2010       |
| Instructor, Ocean Institute, Dana Point, CA                            | 2008, 2009 |

### Publications:

**Fletcher, N. K.**, Acevedo, P., Paupério, J. Alves, P.C., Herman, J.S., Searle, J.B. (2019). Glacial cycles drive rapid divergence of cryptic species of the field vole. *Ecology and Evolution*. 9:14101-14113.

Mason, N.A., **Fletcher, N.K.**, Gill, B., Funk, W.C., Zamudio, K.R., (2020). Coalescent-based species delimitation is sensitive to geographic sampling and isolation by distance. *Systematics and Biodiversity*. 18: 269-280.

Lou, R., **Fletcher, N.K.**, Wilder, A.P., Conover, D.O. Therkildsen, N.O., Searle, J.B. (2018). Full mitochondrial genome sequences reveal new insights about postglacial expansion and regional phylogeographic structure in the Atlantic Silverside (*Menidia menidia*). *Marine Biology*. 165:124. (Featured as a Highlight article: <https://bit.ly/2uCBzOp>)

Gonzalez-Villalobos, R.A., Janjoulia, T., **Fletcher, N.K.**, Giani, J.F., Nguyen, M.T.X., Riquier-Brison, A.D. , Seth, D.M., Fuchs, S., Eladari, D., Picard, N., Bachmann, S., Delpire, E., Peti-Peterdi, J., Navar, L.G., Bernstein, K.E., McDonough, A. A.. (2013). The absence of intrarenal ACE protects against hypertension. *Journal of Clinical Investigation*. 123:2011-2023.

Nguyen, M.T., Yang, L.E., **Fletcher, N.K.**, Lee, D.H., Kocinsky, H.S., Bachmann, S., Delpire, E., McDonough, A.A. (2012). Effects of K<sup>+</sup>-deficient diets with and without NaCl supplementation on Na<sup>+</sup>, K<sup>+</sup>, and H<sub>2</sub>O transporters' abundance along the nephron. *American Journal of Physiology, Renal Physiology*. 303:F92–F104.

*Accepted/ In Review Publications:*

**Fletcher, N.K.** & Hare, M.P. (2020). Population history and genetic structure in the western Atlantic surfclam (*Spisula solidissima* sp.). *Accepted at Journal of Shellfish Research*.

Taft, H., McCosky, D., Miller, J., Pearson, S., Coleman, M., Mittan, C.S., **Fletcher, N.K.**, Mittan, C.S., Meek, M.H., Barbosa, S., Research-management partnerships: an opportunity to integrate genetics in conservation actions. (*Accepted at Conservation Science and Practice*).

Genova, L.A., Johnson, B.B., Castelli, F.R., Arcila Hernández, L. M., Chang van Oordt, D. A., Demery, A. J., **Fletcher, N. K.**, *et al.* What is speciation, how does it occur, and why is it important for conservation? (*In review at Course Source*).

### **Publications in prep (manuscripts available):**

**Fletcher, N.K.**, Lou, R., Herman, J.S., Searle, J.B. Genome-wide analysis of the Celtic Fringe pattern of genetic diversity in British field voles. (*In prep for Evolution*).

Meek, M.H., Beever, E.A., Barbosa, S., Campbell-Staton, S.C., Fitzpatrick, S.W., **Fletcher, N.K.**, Hellmann, J.J., Mittan, C.S., Reid, B.N. New tools for studying local adaptation and the future proofing of populations for climate change. (*In prep for Frontiers in Ecology and Evolution*).

### **Teaching Awards:**

Cornelia Ye Outstanding Teaching Assistant Award 2016  
*Awarded annually to two TAs university-wide who have "clearly demonstrated dedication and excellence in their teaching responsibilities."*

Gitner Teaching Prize, CALS, Cornell University 2017  
*University-level award given to TAs who have "demonstrated their devotion to undergraduate teaching"*

### **Fellowships & Grants:**

|  |             |
|--|-------------|
| Smithsonian Institution Fellowship Program ( <i>declined</i> )       | 2020        |
| Atkinson Center Sustainable Biodiversity Fund (\$6,975)              | 2018        |
| American Society of Mammalogists Travel Grant (\$400)                | 2018        |
| Orenstein Fund Grant, Cornell University (\$907)                     | 2017        |
| NSF Doctoral Dissertation Improvement Grant (\$20,028)               | 2016        |
| Center for Vertebrate Genomics: Genomics Scholars Program (\$15,000) | 2015 - 2016 |
| Cornell Graduate School Conference Travel Grant (\$440)              | 2016        |
| Kieckhefer Adirondack Fellowship, Cornell University (\$5000)        | 2014        |
| Einaudi Center International Research Travel Grant (\$900)           | 2014        |
| Presidential Life Science Fellowship, Cornell University             | 2012 - 2013 |

|   |                  |
|---|------------------|
| NSF Graduate Research Fellowship Program ( <i>Honorable Mention</i> ) | 2013             |
| Society for the Study of Evolution Rosemary Grant Award (\$2206)      | 2013             |
| American Society of Mammalogists Grant in Aid of Research (\$1500)    | 2013             |
| Andrew W. Mellon Student Research Grant, Cornell University (\$1000)  | 2013             |
| Sigma Xi Grant in Aid of Research (\$500)                             | 2013             |
| Paul Feeney Graduate Research Fund, Cornell University (\$950)        | 2013, 2014, 2015 |

### **Selected Presentations:**

**Nicholas Fletcher** "Using genomics to study the rapid divergence of cryptic species during glacial cycling" Smithsonian Conservation Biology Institute. Washington, DC 2019. **Invited seminar.**

**Nicholas Fletcher** et al. "Glacial cycles drive rapid differentiation in the field vole, *Microtus agrestis*" American Society of Mammalogists Meeting. Manhattan, KS 2018. **Oral.**

**Nicholas Fletcher.** "Insular voles as a model for inbreeding genomics of isolated populations" EEB Graduate Student Symposium. Ithaca, NY 2017. **Oral.**

**Nicholas Fletcher.** "Glacial cycles drive rapid genomic differentiation in the field vole" Evolution Meeting. Portland, OR 2017. **Poster.**

**Nicholas Fletcher.** "Glacial cycling drives rapid genomic divergence in the field vole (*Microtus agrestis*)" Ontario Ecology, Ethology, and Evolution Colloquium. Kingston, ON 2017. **Oral.**

**Nicholas Fletcher.** "Glacial cycles drive rapid cryptic speciation in the field vole (*Microtus agrestis*)" EEB Graduate Student Symposium. Ithaca, NY 2016. **Oral.**

**Nicholas Fletcher.** "Phylogeography and speciation in the field vole (*Microtus agrestis*)" Evolution Meeting. Austin, TX 2016. **Poster.**

**Nicholas Fletcher.** "Rapid E-vole-ution: Isolation during glacial refugia drives differentiation in the field vole (*Microtus agrestis*)" Center for Vertebrate Genomics Symposium. Ithaca, NY 2016. **Poster.**

**Nicholas Fletcher.** "Phylogeography and speciation in the field vole (*Microtus agrestis*)" EEB Graduate Student Symposium. Ithaca, NY 2015. **Oral.**

**Nicholas Fletcher.** "The Genomics of Speciation" Corning Community College and Mansfield University Genomics Workshop Grand Finale Symposium. Ithaca, NY 2015. **Invited speaker.**

**Nicholas Fletcher.** "Intrarenal Renin-Angiotensin System Critical for Angiotensin II regulation of NCC, NKCC, SPAK" West Coast Salt and Water Club, Cambria, CA 2012. **Oral.**

**Fletcher, N.K.,** Janjoulia, T., Picard, N., Eladari, D., Riquier-Brisson, A., Nguyen, T.X.M., Lee, D.H., Peti-Peterdi, J., Gonzalez-Villalobos, R.A., McDonough, A.A. "Stimulation of renal sodium transporters' abundance and phosphorylation during chronic angiotensin II (AII) infusion requires intrarenal RAS" Experimental Biology Meeting, San Diego, CA 2012. **Poster.**

Fletcher N.K., Lee D.H., McDonough A.A., "Effect of dietary K/Na ratio on muscle sodium pump abundance" 13th International ATPase Conference, Pacific Grove, CA. 2011. **Poster.**

**Service and Professional Development:**

|  |              |
|--|--------------|
| Open Education Resource Training, Montgomery College   | 2020         |
| Symposium organizer: "Incorporating local adaptation into conservation practice", NACCB, Toronto, ON                                   | 2018         |
| Co-Organizer/Presenter: EEB Diversity Preview Weekend  | 2017, 2018   |
| Co-Founder/Secretary: Conservation Genetics Working Group<br><i>Official working group within the Society for Conservation Biology</i> | 2015-present |
| Workshop on High-throughput Sequencing Data, OICR, Toronto, ON   | 2017         |
| Lead Organizer: EvoDay 2016: Evolution and Conservation  | 2016         |
| Student Award Committee ICCB 2017  | 2016-2017    |
| Co-Organizer: EEB Diversity and Inclusion Group  | 2015-2019    |
| Co-Organizer: EvoGroup Cornell   | 2015-2019    |
| Moderator: Conservation Genetics Sessions, NACCB, Madison, WI  | 2016         |

**Peer review for academic journals:** *Conservation Genetics, BMC Evolutionary Biology, Mammalian Biology*

**Languages/ certifications:**

Fluent in Swedish.

Conversational in Spanish, written and oral.

Proficient in R, bash, and Perl programming.

Lab safety, hazardous materials, and FERPA certified training (Montgomery College).