



Christine E. Parent, Assistant Professor  
University of Idaho  
Sabbatical Plan for Academic Year 2020-2021

**Abstract**

I plan to spend my sabbatical leave in Galapagos (Aug-Dec 2020) and mainland Ecuador (Jan-May 2021) to advance my research related to the characterization of multiple selection pressures in natural biological systems varying in complexity. I will use that time to pursue research objectives including the collection of data and snail specimens in Galapagos and on the mainland related to a project funded through an NSF CAREER award and for the preparation of future research proposals, the creation of a captive breeding program for Galapagos endemic snails, and the further development of a work relationship with local schools in Galapagos.

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**Description**

**OVERVIEW**

My long-term research goal is to maintain a thriving research program in evolutionary biology to better understand the formation and maintenance of biological diversity (e.g., morphological and species diversity). I do so by integrating field observations and collections, experimental manipulations in the laboratory, and rigorous quantitative analyses. More specifically, members of my lab have been pursuing two central lines of research: (1) the study of formation and maintenance of biodiversity in geographically explicit contexts using field-based approaches and (2) the study of multi-scale consequences of lineages exposed to novel environments in laboratory-controlled settings.

The research goal of my sabbatical leave is to focus on the first line of investigation, that is to use empirical approaches in the field to determine the relative importance of evolutionary processes on the formation of biodiversity at a range of spatial and temporal scales. To do so I propose to complete the four objectives described below during my sabbatical leave.

**OBJECTIVES**

**I. Collect biological data and specimens on Galapagos Islands, Ecuador.** In spring 2018 I was awarded an NSF CAREER award to support my research addressing one of the most challenging questions in biology; that is what determines species diversity (Kennedy and Norman 2005). The challenge of this unresolved biological question lies in its complexity. In particular, researchers have made considerable progress in identifying important factors contributing to biological diversity, but exactly how these factors work together largely remains unknown (Pennisi 2005). My NSF CAREER project addresses this question in an island setting where factors influencing diversity range in their complexity. The Galapagos Islands vary in age from very young (less than 50,000 years old) to old (more than 4 million years old) (Geist et al. 2014). This range in age can be used to study how biological diversity is shaped when communities are simple with few interacting species (on young islands), and when communities are more complex and characterized by numerous biological interactions (on older islands). My research team and I are leveraging this natural experiment on islands to measure the rate at which species are formed and diversity accumulates across communities of land snails ranging in complexity.

This work requires a large component of field collection. As part of my CAREER proposal I have planned to spend approximately 2 months in Galapagos every summer from 2018 until 2023 to collect specimens and data directly related to this work. Spending the first half of my sabbatical leave in Galapagos in the fall 2020 will allow me to greatly accelerate the data collection for this work, which forms the foundation of the research component of my NSF CAREER proposal.

**II. Establish a captive breeding program for endemic land snails on Galapagos.** Island systems are well known for their remarkable biological diversity (e.g., Kier et al., 2009; Mahler et al., 2013). The lineages that successfully colonize oceanic archipelagos often diversify into a range of species with greater morphological and ecological diversity than their relatives from the

mainland (Schluter, 2000). Isolation and fragmented landscape are among the factors that promote this diversification, and these factors are also responsible for making island species more vulnerable to extinction. Therefore, although island systems are often viewed as great natural laboratories, their biotas are disproportionately represented on conservation lists.

I will work in collaboration with the Galapagos National Park to initiate a captive breeding program for the endemic land snails of Galapagos. If successful, this program will serve two primary functions: (1) it will help increase the size of snail populations thereby contributing to their protection, and (2) it will provide the context to collect biological data on the life history, ecology, and reproduction of species that are very difficult to observe in the field.

Once established, this program will be a source on invaluable information related to the biology of endemic land snails that would otherwise not be available. We are particularly interested in the diet and the reproduction of these snails. The information thus collected will be used as preliminary data for future grant proposals at the Division of Environmental Biology at NSF.

**III. Collect biological data and land snail specimens on mainland Ecuador and Peru.** Over the past 6 years my research team and I have focused our efforts on the characterization of land snail diversity on Galapagos. A key component to understand why and how species diversify on islands is the characterization of their closely related lineages that reside on the nearby mainland. Currently very little is known about these lineages.

I plan to spend the second half of my sabbatical based at the Pontificia Universidad Católica del Ecuador (PUCE) in Quito Ecuador. During that time, I will collect data and snail specimens on the mainland, in Ecuador and Peru. I will first seek information from existing snail collections at museums across the world to identify regions of sampling interests in Ecuador and Peru. The data and samples collected will form the basis for the preparation of an NSF proposal for the Division of Environmental Biology.

**IV. Reinforce my collaboration with K-12 schools in Galapagos.** Since 2016 Drs. Brant Miller and Tonia Dousay (both faculty in the department of Curriculum and Instruction, College of Education, at UI) and I have been collaborating with the goal of bringing more hands-on research experience into the training of pre-service teachers at UI. To do so we have pursued 2 avenues: (1) we have paired our classes (my Dimensions of Biodiversity class BIOL404 that I teach every fall since 2018 and their EDCI433 and EDCI329 classes) so that our students work together on team-based inquiry projects during the semester when they take our courses, and (2) we are developing a working relationship with the schools in Galapagos to eventually take undergraduate students from UI to Galapagos to develop curriculum material for children in local schools.

I will use my time in Galapagos in the fall 2020 to bring these two initiatives together. More specifically, I will work in close collaboration with the local schools to establish a framework that will allow us to take undergraduate students from UI to Galapagos every summer to develop curriculum material for local schools. In the summer 2019, Dr. Miller and I are taking 4 undergraduate students (2 biology and 2 education majors) for a first iteration of this plan. Furthermore, Dr. Miller and I have a proposal in preparation for the NSF IUUSE (Improving Undergraduate STEM Education) program that, if funded, will allow us to fund the travel to and work in the Galapagos related to this educational plan for the subsequent 3 summers. Our vision is to eventually expand this program to other departments in the College of Science

(chemistry, geology, geography), and offer this opportunity to work in a near-peer settings to a wider range of undergraduate students at the UI. The time spent in Galapagos at local schools will allow me to further develop my network and set the stage for this opportunity that we would like to offer to the undergraduate students at UI.

### **FEASIBILITY**

I have conducted field work in Galapagos and collaborate with the National Park rangers and park officials since 1999. I have obtained the permits for the work proposed and the National Park is fully collaborating with these research efforts. In particular, the National Park is helping with the coordination of logistics of inter-island transport, the assignment of park rangers to help in the field, and by issuing field and sample exportation permits.

For the captive breeding program, we will start with breeding species that are easily accessible and present on Santa Cruz Island where the main National Park Offices are located and where I plan to be based in the fall 2020. The National Park administration will designate the location within the National Park boundaries for the program and will assign the human resource to maintain the breeding enclosures once established. The supplies to build the enclosure will be made available by the New Zealand Friends of Galapagos, and this foundation will also offer scientific advice and expertise on this particular project.

As for the development of the education component, we will build on our previous experience gained while leading a 2-day workshop on science inquiry with 8<sup>th</sup> grade students at Tomas de Berlanga (Foundation Scalesia), a school on Santa Cruz Island, in January 2018. I have been working with Justin Scoggin, the principal of that school and we have planned to expand this inquiry-based research experience for the students to an entire semester. Every year J. Scoggin leads a 10-day professional development workshop with all the teachers working in Galapagos schools and has invited us to participate in this event. We will take advantage of this tribune to reach out to all teachers in Galapagos and help them develop curriculum tools that will bring more evolutionary research into their classrooms.

During my time on the mainland, PUCE will facilitate my research by providing office and lab space at their institution from January to May 2021. They will also facilitate the recruitment of students to participate in this research. Students will be trained in field methods to collect data and snail specimens, laboratory methods, and phylogenetic approaches. I am in the process of securing the permit for the collection and importation of snail specimens from the mainland.

Finally, my research team and I have already published results from our work on Galapagos land snails (Parent and Crespi 2006, Parent and Crespi 2009, Parent 2012) and the proposed work will significantly contribute to this line of research funded through my NSF CAREER award. We have published one (Kraemer et al. 2019) and submitted two articles (Phillips et al. submitted, Gillespie et al. submitted) based on the NSF CAREER funded research and we have another two articles in preparation. During my sabbatical leave I plan to devote a substantial portion of my time to write and edit manuscripts prepared by my research team and plan to submit grant proposals (we have three NSF proposals currently in preparation) to continuously support the work conducted by my team.

## OVERALL SIGNIFICANCE

Islands are living laboratories where evolutionary change is clear, tangible, and can be directly observed. On Galapagos, the number of selection pressures increases from young to old islands as species assemble in more diverse and complex communities. Although substantial research efforts have been devoted to quantifying selection in simple environments, there is a need to characterize the effects and interactions of multiple selection pressures in complex natural biological systems, and the proposed work will contribute to fill this gap. The data collected will be used to address hypotheses related to the effects of multiple selection pressures (i.e., increased complexity) on the rate of phenotypic change and adaptation in endemic lineages diversifying on islands. There is a need for natural systems where multiple traits and numerous selective pressures can be tracked and quantified to fully reveal the effects of multiple selective pressures have on phenotypic differentiation. The Galapagos snails are such a system.

Although international scientists frequently conduct research in locations like Galapagos, all too often they collect data and leave without significant engagement with local communities. Furthermore, the Galapagos archipelago is a UNESCO site and is visited by 175,000 visitors annually (Mejía & Brandt 2015). Nevertheless, the local students in Galapagos have very limited exposure to the evolutionary research conducted in their backyard, and our developing collaboration with local schools aims at filling that gap.

Finally, at the time I will be on sabbatical I expect to have 2 graduate students who will be in their second year of their PhD program. I will also have a postdoctoral researcher who will assist in managing the work and the personnel in the Parent lab at the UI while I will be away.

## CITED LITERATURE

- Geist D, Snell H, Snell H, Goddard C, Kurz MD 2014 A paleogeographic model of the Galápagos Islands and biogeographical and evolutionary implications. *The Galápagos: a natural laboratory for the Earth Sciences. American Geophysical Union, Washington DC, USA* 145-166.
- Gillespie, R. et al. In review. Comparing adaptive radiations across space, time, and taxa. *J Heredity*
- Kennedy D, Norman C 2005 What don't we know? *Science* 309:75-75.
- Kier G, Kreft H, Lee TM, Jetz W, Ibisch PL, Nowicki C, Mutke J, Barthlott W 2009. A global assessment of endemism and species richness across island and mainland regions. *Proc Nat Acad Sci USA* 106: 9322–9327.
- Mahler DL, Ingram T, Revell LJ, Losos JB. 2013. Exceptional convergence on the macroevolutionary landscape in island lizard radiations. *Science* 341: 292–295.
- Mejía CV, Brandt S 2015. Managing tourism in the Galapagos Islands through price incentives: A choice experiment approach. *Ecol Econ* 117:1-11.
- Parent CE, Crespi BJ 2006 Sequential colonization and diversification of Galápagos endemic land snails genus *Bulimulus* (Gastropoda, Stylommatophora). *Evolution* 60: 2311-2328.
- Parent CE, Crespi BJ. 2009 Ecological opportunity in adaptive radiation of Galapagos endemic land snails. *Am Nat* 174: 898-905.
- Parent, CE 2012. Ecological and evolutionary determinants of land snail species richness on islands. *Am Malacol Bull* 30:207-215.
- Pennisi E 2005. What determines species diversity? *Science* 309: 90.
- Phillips JG, Linscott TM, Rankin AM, Kraemer AC, Shoobs NF, Parent CE. In Review. Archipelago-wide patterns of diversity and divergence among an endemic radiation of Galápagos land snails. *J Heredity*.
- Schluter, D 2000. The ecology of adaptive radiation. Oxford University Press, Oxford.

# CURRICULUM VITAE

University of Idaho

**NAME:** Christine E. Parent

**DATE:** Mar 23, 2019

**RANK OR TITLE:** Assistant Professor

**DEPARTMENT:** Biological Sciences

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**DATE OF FIRST EMPLOYMENT AT UI:** November 10, 2013

**DATE OF TENURE:** untenured

**DATE OF PRESENT RANK OR TITLE:** November 10, 2013

## EDUCATION BEYOND HIGH SCHOOL:

### Degrees:

Ph.D.: Simon Fraser University, Vancouver, BC, Canada, 2008, Evolutionary Biology

M.S.: Carleton University, Ottawa, ON, Canada, 2000, Evolutionary Biology

B.S.: McGill University, Montreal, QC, Canada, 1998, Biology

## EXPERIENCE:

### Teaching, Extension and Research Appointments:

- Assistant Professor, University of Idaho, Dept. of Biological Sciences, 2013 – Present
- Postdoctoral Fellow, University of California Berkeley, Dept. of Environmental Sciences, Policy, and Management, 2012 – 2013
- Postdoctoral Fellow, University of Texas at Austin, Dept. of Integrative Biology, 2008 – 2012
- Graduate Teaching Assistant, Simon Fraser University, Dept. of Biological Sciences, 2004 – 2008
- Graduate Research Assistant, Carleton University, Dept. of Biological Sciences, 1998 – 2000
- Graduate Teaching Assistant, Carleton University, Dept. of Biological Sciences, 1998 – 2000

## TEACHING ACCOMPLISHMENTS:

### Areas of Specialization:

Evolutionary Biology, Island Biology, Biogeography, Invertebrate Zoology

### Courses Taught at UI:

- Dimensions of Biodiversity, BIOL404, Fall 2018 (21 student credit hours per semester)
- Invertebrate Zoology, BIOL484, Fall 2015, 2016 (average of 38 average student credit hours per semester)
- Principles of Structure and Function Across the Tree of Life, BIOL213, co-taught with Dr. David Tank, every Spring since 2015 (average of 428 student credit hours per semester)

### Seminar Courses and Reading Groups at UI:

- BCB Seminar: IBEST-CMCI seminar, Spring 201
- BIOL Seminar: Transcriptomics of Biological Interactions, Spring 2017
- BIOL Seminar: Evolutionary Transcriptomics, BIOL501, co-listed at WSU, Spring 2016
- BIOL Seminar: Community Eco Evo (aka CommunitEE reading group), BIOL501, every Fall and Spring semester since Spring 2015. Average 1-5 graduate students registered per semester, 81 Faculty, postdocs, graduate students on the mailing list.

**Teaching and Research Practicum:**

- Lab teaching practicum for BIOL213: 3 students in 2016, 4 students in 2017, 5 students in 2018
- Undergraduate Research, BIOL301 and BIOL401: 3 students in 2015, 9 in 2016, 8 in 2017, 7 in 2018
- Directed Study, BIOL499: 3 students in 2015
- Research in Molec/Cell/DevBio, BIOL495: 1 student in 2014
- Undergraduate Research in Ecology and Evolution, BIOL496: 3 students in 2014

**Students Advised at UI:**

Undergraduate Students:

*Undergraduate Academic Advising:*

- 11 students in 2018
- 9 students in 2017
- 8 students in 2016
- 7 students in 2015
- 5 students in 2014

*Undergraduate Student Mentored with Research Projects, students who received independent support in the form of awards or grants are indicated with \* (38 students):*

- \*Dylan Debaun, REU student (U Michigan), May – Aug 2019
- \*Nicole Recla, Undergraduate Volunteer (**Hill, UI, REU Undergraduate Fellow**), Nov 2018 – Present
- \*Conner Philson, **REU student** (Radford University), May – Aug 2018
- Aaron McNee, Undergraduate Volunteer, Aug 2018 – Present
- Wyatt Duchow, Undergraduate Volunteer, Nov 2017 – May 2018
- Brianna Jung, undergraduate Volunteer, Oct 2017 – Present
- \*Madison Bergeman, Undergraduate Researcher (**Hill & UI Undergraduate Fellow**) Sep 2017 – Present
- \*Chloë Philip, **REU student** (Penn State University), May – Aug 2017
- \*Brandon Larsen, Undergraduate Researcher (**MURI & UI Undergraduate Fellow**), Jan 2017 – Present
- Alexandra Flores, Undergraduate Volunteer, Dec 2017 – May 2018
- Miranda Lybyer, Undergraduate Researcher, Sep 2016 – Aug 2017
- \*David Richards, Undergraduate Researcher (**Hill & UI Undergraduate Fellow**), College of Science Dean's Award, Sep 2016 – May 2018
- \*Nicole Carter, Undergraduate Researcher (**Hill & UI Undergraduate Fellow, Honors Program Awardee**), Aug 2016 – May 2018
- \*Cassandra Goodmansen, Undergraduate Researcher (**MURI Fellow**), Aug 2016 – Aug 2017
- \*Tyler Souza, Undergraduate Researcher (**MURI & UI Undergraduate Fellow**), Aug 2016 – May 2018
- \*Garren Riggers, Undergraduate Researcher (**UI Undergraduate Fellow**), Aug 2016 – Present
- Alexandra Ginther, Undergraduate Researcher, Aug 2016 – Dec 2016
- \*Meifan Zhang, Undergraduate Researcher (**Hill Fellow**), Aug 2016 – May 2017
- \*Rebecca LaVerne Winzer, Undergraduate Researcher (**NSF Undergraduate Biology Mathematics Fellow**), May 2016 – Sep 2016
- \*Alixandra Prybyla, **REU student** (Columbia University), May – Jul 2016
- \*Anna Oetting, Undergraduate Researcher (**UI Undergraduate, Sundquist Undergraduate Research, Biological Sciences Undergraduate Research & MURI Fellow**), Apr 2016 – Present
- \*Katylynn Miller, Undergraduate Researcher, Jan 2016 – May 2018
- Daniel Ault, Undergraduate Researcher, Jan 2016 – Dec 2016
- \*Ubaldo Arana, Undergraduate Researcher, Jan – May 2016
- Whitney Heuer, Undergraduate Researcher, Sep 2015 – Aug 2016
- \*James Wendell, Undergraduate Researcher, May 2015 – May 2016
- \*Austen Hilding, **REU student** (Gustavus College), May – Aug 2015
- \*Reina Nielsen, **REU student** (Gustavus College), May – Aug 2015
- \*Sara Winzer, Undergraduate Researcher (**Biological Sciences Undergraduate Research, INBRE, UI Undergraduate, & NSF Undergraduate Biology Mathematics Fellow**), Apr 2015 – Aug 2017

- Ariana Gaskin, Undergraduate Researcher, Jan 2014 – Dec 2017
- \*Zachary Root, Undergraduate Researcher, Nominated for College of Science Outstanding Undergraduate Researcher Award (**UI Undergraduate & Biological Sciences Undergraduate Research Fellow**), Sep 2014 – May 2016
- \*Jose Araujo, Undergraduate Researcher (**INBRE Fellow**), Sep 2014 – Dec 2015
- Allen Tedrow, Undergraduate Researcher, Sep 2014 – May 2015
- \*Mitchell Go, WSU Undergraduate Researcher (**NSF Undergraduate Biology Mathematics Fellow**), May – Aug 2014
- \*Mary Walton, Undergraduate Researcher (**NSF Undergraduate Biology Mathematics Fellow**), Jan 2014 – Aug 2015
- Michaela Brinkmeyer, Undergraduate Researcher, Jan – May 2014
- \*Justin Anast (co-mentor with Holly Wichman, Tanya Miura), Undergraduate Researcher, Winner of College of Science Outstanding Undergraduate Researcher Award (**NSF Undergraduate Biology Mathematics, Pohl Undergraduate Research, & Biological Sciences Undergraduate Research Fellow**), Nov 2013 – May 2016
- Megan Licht, Undergraduate Volunteer, Nov 2013 – May 2014

#### Graduate Students:

##### *Currently advising to completion of degree as major professor (3):*

- Kelly Martin, Ph.D. Biology, starting Aug 2019
- Katie Peterson, Ph.D. Biology, Aug 2014 – Present
- Mason Linscott, Ph.D. BCB, Aug 2014 – Present

##### *Advised to completion of degree as major professor (2):*

- Yannik Roell, M.S. Biology, Aug 2015 – Aug 2017
- Johnathan Kaiser, M.S. Biology, Aug 2015 – Aug 2017

##### *Currently serving on graduate committee (11):*

- Daniel Turck, Ph.D., Biology, Spring 2019 – Present
- Dean Taylor, M.S., EPPN, Spring 2018 – Present
- Kevin Lewallen, Ph.D. BCB, Fall 2017 – Present
- Sarah Hendricks, Ph.D. BCB, Fall 2017 – Present
- Madelaine Proulx, M.S. Biol. Université de Sherbrooke Canada, Spring 2017 – Present
- Nathaniel Shoobs, Ph.D. Biology at Drexel University, Spring 2017 – Present
- Jn Contina, Ph.D. EPPN, Spring 2017 – Present
- Marie Janneke Schwaner, Ph.D. Biology, Spring 2017 – Present
- Mark Smithson, Ph.D. Biology at WSU, Fall 2016 – Present
- Amanda Stahlke, Ph.D. BCB, Fall 2015 – Present
- Kenetta Nunn, Ph.D. BCB, Spring 2015 – Present

##### *Served on graduate committee (6):*

- Tulsı Damase, Ph.D. Chemistry, Fall 2016 – Fall 2018
- Grahm Johnson, M.S. Biology, Fall 2016 – Fall 2018
- Sarah Jacobs, Ph.D. Biology, Graduated Spring 2018
- Kristen Peterson, Ph.D. BCB, Fall 2014 – Spring 2015 (transferred to M.S. in Stats)
- Tyler Hether, Ph.D. BCB, Graduated Spring 2016
- Simone DesRoches, Ph.D. Biology, Graduated Spring 2014

#### **Courses Developed:**

- BIOL404 Dimensions of Biodiversity
- BIOL484 Invertebrate Zoology, lectures and laboratories
- BIOL213 Structure and Function Across the Tree of Life (co-developed with Dave Tank)

#### **Non-credit Classes, Workshops, Seminars, Invited Lectures, etc. (11):**

- *Islands as Living Laboratories: Color Adaptation in Galapagos Land Snails*. Guest lecture, BIOL114, Nov 2018
- *Islands as Living Laboratories: Color Adaptation in Galapagos Land Snails*. Guest lecture, BIOL114, Mar 2018
- *Islands as Living Laboratories: Color Adaptation in Galapagos Land Snails*. Guest lecture, BIOL114, Nov 2017

- *Color Adaptation in Galapagos Land Snails*. Guest lecture, BIOL114, Mar 2017
- *Islands as Living Laboratories: Adaptation and Speciation in Rapidly Diversifying Lineages*. Guest lecture, BIOL114, Oct 2016
- *On the Snail's Trail: Tracking Evolution on Islands*. Guest lecture, BIOL114, Mar 2016
- *Evolution and Ecology of Invertebrates*. Guest lecture, BIOL114, Nov 2015
- *Evolutionary Research on Island Systems*. Guest lecture, BIOL101, Sep 2015
- *Evolution and Ecology of Invertebrates*. Guest lecture, BIOL116, Mar 2015
- *Models and experimental tests of niche use*. Guest lecture, MATH494, Mar 2014
- *On the snails' trail: evolution on Galapagos Islands*. Guest lecture, Island Biology Class, Department of Geography, Nov 2013

#### Honors and Awards:

- Alumni Award of Excellence (Mentor), University of Idaho, 2018
- Alumni Award of Excellence (Mentor), University of Idaho, 2017
- Excellence in Teaching Award, Faculty of Science, Simon Fraser University, 2008
- Teaching Assistant Award, Department of Biological Sciences, Simon Fraser University, 2008

#### SCHOLARSHIP ACCOMPLISHMENTS:

##### Publications, Exhibitions, Performances, Recitals:

##### Refereed/Adjudicated (3):

- **Parent, C.E.** and Coppois, G. 2016. On the snails' trail: evolution and speciation among a vanishing tribe. Completely updated text. In: *Galápagos: Preserving Darwin's Legacy, 2<sup>nd</sup> Edition (revised text)*. De Roy T. (ed). Bloomsbury Natural History.
- Gillespie, R.G. and **Parent, C.E.** 2014. *Adaptive Radiation*. Online Oxford Bibliographies in Evolutionary Biology. Losos, J.B. (ed.). New York: Oxford University Press. Added online on 2014-01-13. DOI: 10.1093/OBO/9780199941728-0004
- **Parent, C.E.** and G. Coppois. 2009. On the snails' trail: evolution and speciation among a vanishing tribe. Pp. 74-81. In: *Galápagos: Preserving Darwin's Legacy*. De Roy T. (ed.). Bateman Ltd.

##### Peer Reviewed/Evaluated (27):

##### \* indicates Parent Lab member

- \*Kraemer, A.C., C.W. Philip, A.M. Rankin, **C.E. Parent**. 2019. Tradeoffs direct the evolution of coloration in Galápagos land snails. *Proceedings of the Royal Society, series B* 286 DOI:10.1098/rspb.2018.2278
- Norder, S.J., K. Proios, R.J. Whittaker, P.A.V. Borges, M.K. Borregaard, F.B.V. Florens, W.D. Kissling, L. de Nascimento, R. Otto, F. Rigal, B.H. Warren, J.M. Fernández-Palacios, E.E. van Loon, **C.E. Parent**, K.A. Triantis, K.F. Rijdsdijk. 2019. Past archipelago configuration affects present-day oceanic island biodiversity. *Global Ecology and Biogeography* 28(2):184-197. DOI: 10.1111/geb.12835
- **Parent, C.E.**, P. Fisher, W. Jolley, A. Alifano, K.J. Campbell. In Press. Assessment of snail exposure to the anticoagulant rodenticide brodifacoum in the Galapagos Islands. *Proceedings of the Island and Invasive Species Conference*.
- Damase, T.R., T.A. Miura, **C.E. Parent**, P.B. Allen. 2018. Application of the Open qPCR instrument for the in vitro selection of DNA aptamers against Epidermal Growth Factor Receptor and Drosophila C virus. *ACS Combinatorial Science* 20(2):45-54.
- Rosenblum, E.B., **C.E. Parent**, E.T. Diepeveen, C. Noss, K. Bi. 2017. Convergent phenotypic evolution despite contrasting demographic histories in the fauna of White Sands. *The American Naturalist* 190(S1): S44-S56.

- Villanea, F.A., **C.E. Parent**, B.M. Kemp. 2016. Reviving Galapagos's snails: extraction and amplification from extinct endemic land snail species using ancient DNA methods. *Journal of Molluscan Studies* 82(3): 449-456 doi:10.1093/mollus/eyw011
- Triantis, K.A., F. Rigal, **C.E. Parent**, R.A.D. Cameron, B. Lenzner, A. Parmakelis, N.W. Yeung, M.R. Alonso, M. Ibáñez, A.M.F. Martins, D.N.F. Teixeira, O.L. Griffiths, Y. Yanes, K.A. Hayes, R.C. Preece, R.H. Cowie. 2016. Discordance between morphological and taxonomic diversity: land snails of oceanic archipelagos. *Journal of Biogeography* 43: 2050–2061 doi:10.1111/jbi.12757
- Hunter S.S., M.L. Settles, **C.E. Parent**, A. Gerritsen. 2016. Mitochondrial genome sequence of the Galápagos endemic land snail *Naesiotus nux*. *Genome Announcements* 4:doi:10.1128/genomeA.01362-15
- \*Peterson, K.L., **C.E. Parent**. 2016. Documenting and digitizing specimens from a weird and scenic landscape: Utilizing and enhancing collections to understand patterns of biodiversity. Pp. 99 in: R. Gabriel, R.B. Elias, I.R. Amorim & P.A.V. Borges (Eds). Conference program and abstracts of the 2nd International Conference on Island Evolution, Ecology and Conservation: Island Biology 2016, 18-22 July 2016, Angra do Heroísmo, Azores, Portugal. Arquipelago. Life and Marine Sciences. Supplement 9.
- \*Roell, Y.E., J. L. Voyles, **C.E. Parent**. 2016. Galapagos land snail's metabolic rate: A relationship of shell morphology and environment. Pp. 388 in: R. Gabriel, R.B. Elias, I.R. Amorim & P.A.V. Borges (Eds). Conference program and abstracts of the 2nd International Conference on Island Evolution, Ecology and Conservation: Island Biology 2016, 18-22 July 2016, Angra do Heroísmo, Azores, Portugal. Arquipelago. Life and Marine Sciences. Supplement 9.
- \*Kraemer, A.C., **C.E. Parent**. 2016. What are we losing? The ecomorphology of decline in Galapagos land snails. Pp. 390 in: R. Gabriel, R.B. Elias, I.R. Amorim & P.A.V. Borges (Eds). Conference program and abstracts of the 2nd International Conference on Island Evolution, Ecology and Conservation: Island Biology 2016, 18-22 July 2016, Angra do Heroísmo, Azores, Portugal. Arquipelago. Life and Marine Sciences. Supplement 9
- \*Peterson, K.L., **C.E. Parent**. 2016. Community assembly and disassembly in a volcanic national monument in the Pacific Northwest: Island biogeography within a continental context. Pp. 494 in: R. Gabriel, R.B. Elias, I.R. Amorim & P.A.V. Borges (Eds). Conference program and abstracts of the 2nd International Conference on Island Evolution, Ecology and Conservation: Island Biology 2016, 18-22 July 2016, Angra do Heroísmo, Azores, Portugal. Arquipelago. Life and Marine Sciences. Supplement 9.
- **Parent, C.E.**, D. Agashe, D.I. Bolnick. 2014. Intraspecific competition reduces niche width in experimental populations. *Ecology & Evolution* 4(20):3978-3990
- Rosenblum, E.B., **C.E. Parent**, E.E. Brandt. 2014. The molecular basis of phenotypic convergence. *Annual Reviews of Ecology Evolution and Systematics* 45:203-226
- Cameron, R.A.D., K.A. Triantis, **C.E. Parent**, M.R. Alonso, M. Ibanez, A.M.F. Martins, R.L. Ladle, R.J. Whittaker. 2013. Snails on oceanic islands: testing the general dynamic model of oceanic island biogeography. *Journal of Biogeography* 40:117-130
- Falk, J.J., **C.E. Parent**, D. Agashe, D.I. Bolnick. 2012. Drift and selection entwined: Asymmetric reproductive isolation in an experimental niche shift. *Evolutionary Ecology Research* 14: 403-423
- **Parent, C.E.** 2012. Ecological and evolutionary determinants of land snail species richness on islands. *American Malacological Bulletin* 30(1):207-215, Invited submission
- **Parent, C.E.** 2012. The (often ignored) role of vicariance in evolutionary diversification on oceanic islands. *Frontiers of Biogeography* 3(4):130-132, Invited submission

- Mathers, A., R.P. Smith, B. Cahill, C Lubelczyk, S.P. Elias, E. Lacombe, S.R. Morris, C.P. Vary, **C.E. Parent**, P.W. Rand. 2011. Strain diversity of *Borrelia burgdorferi* in ticks dispersed in North America by migratory birds. *Journal of Vector Ecology* 36:24-29
- Losos, J.B. and **C.E. Parent**. 2010. The Speciation-Area Relationship. In: *Theory of Island Biogeography Revisited*. Losos, J.B. and R.E. Ricklefs (eds.)
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- **Parent, C.E.**, A. Caccone, K. Petren. 2008. Colonization and diversification of Galápagos terrestrial fauna: a phylogenetic and biogeographical synthesis. *Philosophical Transactions of the Royal Society of London B: Biological Sciences* 363:3347-3361
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- **Parent C.E.** 2008. Global decline in mollusk populations. *ActionBioscience.org*, resource website of the American Institute of Biological Sciences
- **Parent, C.E.** and B.J. Crespi. 2006. Sequential colonization and rapid diversification of Galápagos endemic land snail genus *Bulimulus* (Gastropoda, Stylommatophora). *Evolution* 60:2311-2328
- Landry, B., D. Adamski, P. Schmitz, **C.E. Parent**, L. Roque-Albedo. 2006. *Taygete sphecochyla* (Meyrick) (Lepidoptera; Autostichidae): redescription of the adult, description of the larva and pupa, and impact on Polistes wasps nests in the Galápagos islands. *Revue Suisse de Zoologie* 113:307-323
- Green, D.M. & **C. Parent**. 2003. Variable introgression in a hybrid zone in the toads, *Bufo americanus* and *B. fowleri*. *Copeia* 2003:34-43

#### Other (6):

##### \* indicates Parent Lab member

- **Parent, C.E.** 2016. On the trail of the snail. Galapagos Matters. Autumn/Winter 2016: 18-19.
- \*Kraemer, A.C. and **Parent, C.E.** In review. *Naesiotus – various species* - Assessment of 69 *Naesiotus* land snail species of Galápagos, IUCN Red List of Threatened Species
- **Parent, C. E.**, Miquel, S. E., Coppois, G. (2014). CDF Checklist of Galapagos Terrestrial and brackish water snails - FCD Lista de especies de Caracoles terrestres de Galápagos. In: Bungartz, F., Herrera, H., Jaramillo, P., Tirado, N., Jiménez-Uzcátegui, G., Ruiz, D., Guézou, A. & Ziemmeck, F. (eds.). Charles Darwin Foundation Galapagos Species Checklist - Lista de Especies de Galápagos de la Fundación Charles Darwin. Charles Darwin Foundation / Fundación Charles Darwin, Puerto Ayora, Galapagos:  
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- **Parent, C.E.** and K. Campbell. 2012. *Land snail mitigation plan for Pinzón Island during the application of brodifacoum bait for rodent eradication*. University of California Berkeley and Island Conservation for the Galapagos National Park Service
- **Parent, C.E.** 2006. Speciation on islands: the bulimulid land snails of Galápagos. *Unitas Malacologica Newsletter* 23:12

- **Parent, C.E.** and R.P. Smith. 2006. Galápagos bulimulids: status report on a devastated fauna. *Tentacle*, The Newsletter of the IUCN/SSC Mollusc Specialist Group. 14: 25-27
- **Parent, C.** 2003. *Bulimulus* – various species - In: 2003 IUCN Red List of Threatened Species. (Assessment of 57 *Bulimulus* land snail species of Galápagos)

**Refereed/Adjudicated (currently scheduled or submitted):**

- None

**Peer Reviewed/Evaluated (currently scheduled or submitted):**

**\* indicates current or former Parent Lab member**

**Submitted (4):**

- \*Phillips, J.G., \*T.M. Linscott, A.M. Rankin, \*A.C. Kraemer, N.F. Shoobs, **C.E. Parent**. In Review. Archipelago-wide patterns of diversity and divergence among an endemic radiation of Galápagos land snails. *Journal of Heredity*
- Gillespie, R. et al. In review. Comparing adaptive radiations across space, time, and taxa. *Journal of Heredity*
- \*Linscott, T.M. and **Parent, C.E.** In Review. The Mitochondrial Genome of the Montane Endemic Land Snail *Oreohelix idahoensis*. *Genome Announcements*
- \*Roell, Y.E. and **Parent, C.E.** Submitted. Effect of topographic complexity on Galapagos' species richness. *Journal of Biogeography*.

**Scheduled submission in 2019 (7):**

- **Parent, C.E.**, J. Heiling, D.I. Bolnick. In prep for *Evolution Letters*. Effect of prior selection history on the probability of population extinction. Target submission: spring 2019
- \*Kraemer, A.C. and **Parent, C.E.** In prep for *Journal of Biogeography*. Signature of competitive exclusion in species accumulation on young islands. Target submission: spring 2019
- \*Peterson, K. L., Ruffley, M., **Parent, C.E.** In prep for *Diversity and Distributions*. Phylogenetic diversity of plant communities in a naturally fragmented landscape. Target submission: spring 2019
- \*Linscott, T.M., and **Parent, C.E.** In prep for *Biological Reviews*. Molluscan shell ornamentation. Target submission: spring 2019
- \*González-González, A., \*DeAgüero, A., Ridenhour, B., Van Leuven, J.T., Miura, T.A. **Parent, C.E.** In prep for *Proceedings of the Royal Society B*. Within-host viral dynamics and gene expression changes elicited by viral co-infection in *Drosophila melanogaster*. Target submission: spring 2019
- Ferguson, J., \*Kaiser, A.K., \*Winzer S., \*Anast, J.A., Miura, T.A., **Parent, C.E.** In prep for *American Naturalist*. Estimating individual-level effects of coinfection from aggregated data using latent variable models. Target submission: spring 2019
- \*Linscott, T.M., and **Parent, C.E.** In prep for *Molecular Ecology*. Introgression and geology drive ornamentation evolution within Mountainsnails (genus *Oreohelix*). Target submission: spring 2019

**Presentations and Other Creative Activities (2):**

- Online guide to Galapagos endemic snails: <http://galapagossnailab.wordpress.com>, added in November 2014, latest update Nov 2015

- Parent lab website: <http://parentlab.weebly.com>, last updated Dec 2017

**Invited Seminars and Research Talks (since at UI) (20):**

- *Islands as dynamic models for the study of evolutionary diversification*. Department of Biological Sciences, University of Cincinnati, Cincinnati OH, upcoming Apr 2019. Invited seminar talk.
- *Islands as dynamic models for the study of evolutionary diversification*. Department of Ecology and Evolutionary Biology, University of Toronto, Toronto, Canada, upcoming March 2019. Invited seminar talk.
- *Islands as dynamic models for the study of evolutionary diversification*. Department of Ecology, Evolution & Organismal Biology, Iowa State University, Ames IA, upcoming Feb 2019. Invited seminar talk.
- *Islands as dynamic models for the study of evolutionary diversification*. School of Biological Sciences, Washington State University, upcoming Oct 2018. Invited seminar talk.
- *Islands as Living Laboratories: Adaptation and Speciation in Galapagos' Land Snails*. Think Evolution IX: A summer institute for science educators. University of California Berkeley, Aug 2018. Invited talk.
- *On the snails' trail: early stages of diversification in Galapagos' land snails*. American Genetics Association Annual Conference. Waimea HI, Jul 2018. Invited research talk.
- *On the snails' trail: evolution and speciation in Galapagos' largest adaptive radiation*, Department of Biology, University of Nevada, Reno NV, Mar 2018. Invited seminar talk.
- *Adaptation and speciation in Galapagos Naesiotus snails*. Western Society of Malacologists, Los Angeles CA, Jun 2017. Invited research talk.
- *Islands as dynamic models for the study of species diversification*, EvMorph Seminar Series co-hosted University of Chicago and Field Museum, Chicago IL, Jan 2017. Invited seminar talk.
- *Diversification on Island Systems: Ecological Opportunities and Evolutionary Constraints*, Department of Biological Sciences, Boise State University, Boise ID, Oct 2016. Invited seminar talk.
- *Islands as Living Laboratories: Adaptation and Speciation in Galapagos' Most Diverse Species Group*, Idaho Conference on Undergraduate Research, BSU, Boise ID, Jul 2016. Invited research talk.
- *Ecological Opportunity and Diversification on Islands*, Inland Northwest Genomic Research Symposium, UI Moscow ID, May 2016. Invited research talk.
- *Research Update: Multi-Level Dynamics of Viral Co-Infection*, Center for Modeling Complex Interactions Annual Expo, UI Moscow ID, May 2016. Invited research talk.
- *Diversification on Island Systems: Ecological Opportunities and Evolutionary Constraints*, Department of Integrative Biology, Oregon State University Corvallis OR, Mar 2016. Invited seminar talk.
- *Some Slimy News: Research Update from the Galapagos Islands*, IBEST Annual Expo, UI Moscow ID, Oct 2015. Invited research talk.
- *Population-Level Co-Infection and Transmission: Working Group Update*, UI Center for Modeling Complex Interactions Brown Bag Lunch, Moscow ID, Sep 2015. Invited research

talk.

- *On the snails' trail: evolution and speciation in Galapagos' largest adaptive radiation.* Department of Biological Sciences, University of California, Santa Barbara CA, Jun 2015. Invited seminar talk.
- *Galapagos endemic land snails: an update on threatened island species.* Island Conservation, Santa Barbara CA, Jun 2015. Invited research talk.
- *The Multiple twists of snail shells: the roles of ecology and physiology in diversification of Galapagos endemic land snails.* Department of Fish and Wildlife Sciences, UI, Moscow ID, Mar 2015. Invited seminar talk.
- *Research in the Parent lab: investigating snail evolution on Galapagos Islands.* Thunder Talk, IBEST Annual Retreat, Moscow ID, Sep 2014. Invited research talk.

### Contributed Professional Meeting Presentations (Since November 2013):

#### Oral Presentations (5):

- **Parent, C.E.**, J. Heiling, D.I. Bolnick. Effect of Prior Selection History on the Probability of Population Extinction. II Joint Congress on Evolutionary Biology. Montpellier France, Aug 2018.
- **Parent, C.E.** Caracoles endémicos de Galápagos: Historia y descubrimientos acerca de la radiación adaptativa más grande de Galápagos. AGIPA (Association of Naturalist Guides of Galápagos) monthly science seminar series, Puerto Ayora, Santa Cruz Island, Galápagos, May 2018
- Kraemer, A.C. and **C.E. Parent**. What are we losing? The ecomorphology decline in Galapagos land snails. International Conference of Island Biology. Azores Islands, Portugal, Jul 2016
- **Parent C.E.** On the snails' trail: evolution and speciation in Galapagos' largest adaptive radiation. American Association for the Advancement of Science, Pacific Division Annual Meeting. San Francisco CA, Jun 2015
- **Parent C.E.**, P. Peres-Neto, M.A. Leibold. Disentangling the environmental and historical biogeography effects in island species distributions: a metacommunity phylogenetics approach. First International Conference of Island Biology. Honolulu HI, Jul 2014

#### Oral Presentations by Laboratory Members (15):

- Philson, C.S. and **C.E. Parent**. Spatial and environmental distribution of clustering behaviors in endemic Galápagos land snails (*Naesiotus spp.*). Invited talk at the *Radford University's Annual Summer Research Celebration*
- Philson, C.S. and **C.E. Parent**. Spatiotemporal environmental variation of clustering behaviors in endemic Galápagos land snails (*Naesiotus spp.*). Talk given at the *University of Idaho's NSF REU Symposium Showcase*
- Linscott, T.M. and **C.E. Parent**. SNPs, Snails, and Lime: Genomic and Geologic Patterns of Ornamentation. Annual Meeting of the Society of Systematic Biologists. Columbus OH, Jun 2018.
- Richards, D. and **C.E. Parent**. Effect of donor-recipient ratio on horizontal viral transmission in *Drosophila melanogaster*. Hill Fellowship symposium. UI, Apr 2018
- Oetting, A. and **C.E. Parent**. Rocky taxonomy and mountain snail evolution. Hill Fellowship symposium. UI, Apr 2018

- Carter, N.H., and **C.E. Parent**. Quantifying the effect of invasive rodents on the shell morphology of endemic Galápagos land snails. Hill Fellowship symposium. UI, Apr 2018
- Roell, Y.E. and **C.E. Parent**. An empirical test of the role of topographic complexity in the general dynamic model of oceanic island biogeography. *Evolution* Jun 2017. Portland OR, Jun 2017
- Peterson, K.L. and **C.E. Parent**. Islands in Idaho: using a naturally fragmented landscape to investigate communities. *Evolution* 2017. Portland OR, Jun 2017
- Linscott, T.M. and **C.E. Parent**. Phylogenomics of Lower Salmon River Oreohelicidae. Annual meeting of the Western Society of Malacologists 2017. Los Angeles CA, Jun 2017 **\*Winner of best student oral presentation**
- Gonzalez-Gonzalez, A., A. DeAguero, J.T. Van Leuven, T.A. Miura, and **C.E. Parent**. Gene expression effects of viral co-infection in adult flies. Fly-Worm meeting, Washington State University May 2017
- Roell, Y.E. and **C.E. Parent**. The relationship of metabolic rate to shell morphology and environmental differences in endemic land snails of Galapagos. International Conference of Island Biology. Azores Islands, Portugal, Jul 2016
- Peterson, K.L. and **C.E. Parent**. Documenting and digitizing specimens from a weird and scenic landscape: utilizing and enhancing collections to understand patterns of biodiversity. International Conference of Island Biology. Azores Islands, Portugal, Jul 2016
- Winzer, S. and **C.E. Parent**. Effects of viral infection on life history traits of *Drosophila melanogaster*. Center for Modeling Complex Interactions, External Advisory Committee Symposium. University of Idaho, ID, May 2016
- Kraemer, A.C. and **C.E. Parent**. The rise and fall of diversity: color and extinction in Pacific Island snails. Gonzaga University, Spokane WA, Mar 2016
- Kraemer, A.C. and **C.E. Parent**. Color diversification in Galapagos land snails. Annual meeting of the Society of Integrative and Comparative Biology, Portland OR, Jan 2016

**Poster Presentations by Laboratory Members (75):**

- Philson, C.S. and **C.E. Parent**. Spatiotemporal environmental variation of clustering behaviors in endemic Galápagos land snails (*Naesiotus spp.*). Poster given at the *Idaho Conference of Undergraduate Research (ICUR)*, and at the *University of Idaho's NSF REU Symposium Showcase*
- Duchow, W., Rankin, A., **C. E. Parent**. Molecular Phylogenetics of Galapagos land snail genus *Naesiotus*. University of Idaho Undergraduate Research Symposium, Moscow ID, Apr 2018
- Bergeman, M., Gonzalez-Gonzalez A., **C.E. Parent**. Viral dynamics in *Drosophila melanogaster* adult flies. University of Idaho Undergraduate Research Symposium, Moscow ID, Apr 2018
- Riggers, G., Linscott, T.M., **C.E. Parent**. Genomic scans of convergent ornamented shell forms. University of Idaho Undergraduate Research Symposium, Moscow ID, Apr 2018
- Richards, D., Miller, K., Kaiser, J.A., Gonzalez-Gonzalez A. and **C.E. Parent**. Effect of donor-recipient ratio on horizontal viral transmission in *Drosophila melanogaster*.

University of Idaho Undergraduate Research Symposium, Moscow ID, Apr 2018

- Carter, N.H., and **C.E. Parent**. Quantifying the effect of invasive rodents on the shell morphology of endemic Galápagos land snails. University of Idaho Undergraduate Research Symposium, Moscow ID, Apr 2018
- Oetting, A. and **C.E. Parent**. Rocky taxonomy and mountain snail evolution. University of Idaho Undergraduate Research Symposium, Moscow ID, Apr 2018
- Oetting, A. and **C.E. Parent**. Rocky taxonomy and mountain snail evolution. National Conference for Undergraduate Research. Edmund OK, Apr 2018
- González-González, A., A. DeAgüero, J.T. Van Leuven, T.A. Miura, **C.E. Parent**. Transcriptomics of the early stage of viral co-infection in *Drosophila melanogaster*. Beacon Annual Congress, Henry Center at Michigan State University, MI. Dec 2017
- Carter, N.H., **C.E. Parent**. Quantifying the effect of invasive rodents on endemic Galápagos land snails. College of Science Expo, U Idaho, Moscow ID, Nov 2017
- Riggers, G.L., T.M. Linscott, **C.E. Parent**. SNP's, snails, and Mountain trails. Idaho Conference Undergraduate Research, Boise ID, Jul 2017
- Carter, N.H., **C.E. Parent**. Quantifying the effect of invasive rodents on endemic Galápagos land snails. Idaho Conference Undergraduate Research, Boise ID, Jul 2017
- Souza, T., T.M. Linscott, **C.E. Parent**. Phylogenetic relationships of lower Salmon River *Oreohelix*: the haydeni cluster. Idaho Conference Undergraduate Research, Boise ID, Jul 2017
- Larsen, B.C., T.M. Linscott, **C.E. Parent**. Ecological correlates of land snails from the Lower Salmon River. Idaho Conference Undergraduate Research, Boise ID, Jul 2017
- Philip, C.W., A.C. Kramer, **C.E. Parent**. Evolutionary impact of visual predator preferences on *Naesiotus wolffi* coloration. Idaho Conference Undergraduate Research, Boise ID, Jul 2017
- González-González, A., A. DeAgüero, J.T. Van Leuven, T.A. Miura, **C.E. Parent**. Transcriptomics of the early stage of viral co-infection in *Drosophila melanogaster*. Gordon Research Conferences on Microbial Population Biology. Proctor Academy, Andover NH, Jul 2017
- González-González, A., A. DeAgüero, J.T. Van Leuven, T.A. Miura, **C.E. Parent**. Transcriptomics of the early stage of viral co-infection in *Drosophila melanogaster*. Ecology & Evolution of Infectious Diseases (EEID). University of California Santa Barbara CA, Jun 2017
- Riggers, G.L., T.M. Linscott, **C.E. Parent**. SNP's, snails, and Mountain trails. University of Idaho Undergraduate Research Symposium, Moscow ID, Apr 2017
- Carter, N.H. and **C.E. Parent**. Quantifying the effect of invasive rodents on endemic Galápagos land snails. University of Idaho Undergraduate Research Symposium, Moscow ID, Apr 2017
- Goodmansen C., T.M. Linscott, **C.E. Parent**. Examining Phenotypic Divergence Through Quantifying Shell Shape Differentiation. University of Idaho Undergraduate Research Symposium, Moscow ID, Apr 2017
- Oetting A., T.M. Linscott, **C.E. Parent**. University of Idaho Undergraduate Research Symposium, Moscow ID, Apr 2017

- Gaskin A. and **C.E. Parent**. Slime trail tracking in the Idaho endemic terrestrial snail *Oreohelix*. University of Idaho Undergraduate Research Symposium, Moscow ID, Apr 2017
- Zhang, M., A. Gonzalez-Gonzalez, **C.E. Parent**. Effect of second viral exposure on survival of *D. melanogaster*. University of Idaho Undergraduate Research Symposium, Apr 2017
- Souza, T., T.M. Linscott, **C.E. Parent**. Phylogenetic relationships of lower Salmon River *Oreohelix*: the haydeni cluster, University of Idaho Undergraduate Research Symposium, Moscow ID, Apr 2017
- Winzer S. and **C.E. Parent**. Effects of viral infection on life history traits of *Drosophila melanogaster*. University of Idaho Undergraduate Research Symposium, Moscow ID, Apr 2017
- Kaiser, J.A., T.A. Miura, H.A. Wichman, and **C.E. Parent**. Quantifying viral transmission variables for a tractable model of viral dynamics in coinfection. Center for Modeling Complex Interactions, External Advisory Committee Symposium. University of Idaho, Moscow ID, May 2017
- Gonzalez-Gonzalez, A., A. DeAgüero, J.T. Van Leuven, T.A. Miura, and **C.E. Parent**. Transcriptomics of the early stage of viral co-infection in *Drosophila melanogaster*. Center for Modeling Complex Interactions, External Advisory Committee Symposium. University of Idaho, Moscow ID, May 2017
- Zhang, M., A. Gonzalez-Gonzalez, and **C.E. Parent**. Effect of second viral exposure on survival of *D. melanogaster*. Center for Modeling Complex Interactions, External Advisory Committee Symposium. University of Idaho, Moscow ID, May 2017
- Winzer, S.M., and **C.E. Parent**. Effects of viral infection on life history traits of *Drosophila melanogaster*. National Conference on Undergraduate Research, Memphis TN, Apr 2017
- Kaiser, J.A., T.A. Miura, H.A. Wichman, **C.E. Parent**. Antagonistic effect of co-infection on mortality in host *Drosophila melanogaster* by viral pathogens DCV and DXV. UI College of Science Annual Science Exposition, Moscow ID, Nov 2016
- Kaiser, J.A., T.A. Miura, H.A. Wichman, **C.E. Parent**. Antagonistic effect of co-infection on mortality in host *Drosophila melanogaster* by viral pathogens DCV and DXV. IBEST Annual Expo, Moscow ID, Oct 2016
- Peterson, K.L. and **C.E. Parent**. Investigating community assembly in a volcanic National Monument. IBEST Annual Expo, Moscow ID, Oct 2016
- González-González, A., A. DeAgüero, T.A. Miura, **C.E. Parent**. Title IBEST Annual Expo, Moscow ID, Oct 2016
- Peterson, K.L. and **C.E. Parent**. Investigating community assembly in a volcanic National Monument. International Conference of Island Biology. Azores Islands, Portugal, Jul 2016
- González-González, A., A. DeAgüero, T.A. Miura, **C.E. Parent**. Gene expression changes elicited by viral co-infection in *Drosophila melanogaster*. NIH, NIGMS Sixth Biennial National IDeA Symposium of Biomedical Research Excellence (NISBRE), Washington, DC, Jun 2016
- Winzer, S., J.A. Anast, T.A. Miura, H.A. Wichman, **C.E. Parent**. Effects of viral infection on life history traits of *Drosophila melanogaster*. NIH, NIGMS Sixth Biennial

National IDeA Symposium of Biomedical Research Excellence (NISBRE), Washington, DC, Jun 2016

- Kaiser, J.A., T.A. Miura, H.A. Wichman, **C.E. Parent**. Antagonistic effect of co-infection on mortality in host *Drosophila melanogaster* by viral pathogens DCV and DXV. NIH, NIGMS Sixth Biennial National IDeA Symposium of Biomedical Research Excellence (NISBRE), Washington, DC, Jun 2016
- Heuer, W., A. Gonzalez-Gonzalez, L. Scott, H.A. Wichman, **C.E. Parent**. Serial Passaging of Drosophila X Virus in *Drosophila melanogaster*. NIH, NIGMS Sixth Biennial National IDeA Symposium of Biomedical Research Excellence (NISBRE), Washington, DC, Jun 2016
- Winzer, S. and **C.E. Parent**. Effects of viral infection on life history traits of *Drosophila melanogaster*. Annual Meeting on the Ecology and Evolution of Infection Diseases. Cornell University, NY, Jun 2016
- Kaiser, J.A. and **C.E. Parent**. Antagonistic effect of viral co-infection on mortality in host *D. melanogaster*. Annual Meeting on the Ecology and Evolution of Infection Diseases. Cornell University, NY, Jun 2016
- Winzer, S., J. Anast, H.A. Wichman, T.A. Miura, and **C.E. Parent**. Effects of viral infection on life history traits of *Drosophila melanogaster*. Center for Modeling Complex Interactions, External Advisory Committee Symposium. University of Idaho, May 2016
- Kaiser, J.A., T.A. Miura, H.A. Wichman and **C.E. Parent**. Reduced host mortality indicative of viral in-fighting? Center for Modeling Complex Interactions, External Advisory Committee Symposium. University of Idaho, May 2016
- Gonzalez Gonzalez, A., T.A. Miura, **C.E. Parent**. Transcriptomics of viral co-infection. Center for Modeling Complex Interactions, External Advisory Committee Symposium. University of Idaho, ID, May 2016
- Root, Z., A.C. Kraemer, **C.E. Parent**. Effect of precipitation on relative morphology across Galapagos endemic snails of the genus *Naesiotus*. Departmental Undergraduate Research Symposium, Moscow, ID, May 2016
- \***Best Poster Award**
- Wendell, J., J. Araujo, J. Anast, H.A. Wichman, T.A. Miura, **C.E. Parent**. Effect of viral infection on the survival and development rate in laboratory populations of *Drosophila melanogaster*. Departmental Undergraduate Research Symposium, University of Idaho, May 2016
- Winzer, S., J. Anast, H.A. Wichman, T.A. Miura, and **C.E. Parent**. Effects of viral infection on life history traits of *Drosophila melanogaster*. Departmental Undergraduate Research Symposium, University of Idaho, May 2016
- Roell, Y.E. and **C.E. Parent**. The relationship of metabolic rate to shell morphology and environmental differences in endemic land snails of Galapagos. EVO-WIBO, Port Townsend WA. Apr 2016
- Root, Z., A.C. Kraemer, **C.E. Parent**. Effect of precipitation on relative morphology across Galapagos endemic snails of the genus *Naesiotus*. University of Idaho Undergraduate Research Symposium, Apr 2016
- Winzer, S., J. Anast, T. Miura, H.A. Wichman, and **C.E. Parent**. Effects of viral infection on life history traits of *Drosophila melanogaster*. University of Idaho Undergraduate Research Symposium, Apr 2016
- Winzer, S. and **C.E. Parent**. Effects of viral infection on population dynamics in

*Drosophila melanogaster*. Annual meeting of the Society of Integrative and Comparative Biology, Portland OR, Jan 2016

- Roell, Y.E. and **C.E. Parent**. The relationship of metabolic rate to shell morphology and environmental differences in endemic land snails of Galapagos. Annual meeting of the Society of Integrative and Comparative Biology, Portland OR, Jan 2016
- Peterson, K.L. and **C.E. Parent**. Investigating Community Assembly in a Volcanic National Monument. Annual meeting of the Society of Integrative and Comparative Biology, Portland OR, Jan 2016
- Nielsen, R., K.L. Peterson, **C.E. Parent**. Lichen coverage and morphology on different aged basaltic lava flows, Midstates Consortium for Math and Science St. Louis MO, Nov 2015
- Anast, J., L.A. Scott, M. Ederer, T.A. Miura, **C.E. Parent**, H.A. Wichman. Testing the Modes of Viral Transmission in *Drosophila melanogaster*, UI College of Science Annual Science Exposition, Moscow ID, Nov 2015
- Araujo, J., T.A. Miura, L.A. Scott, H.A. Wichman, **C.E. Parent**. Viral infection and detection of Invertebrate Iridescent Virus 6 in *Drosophila melanogaster*, UI College of Science Annual Science Exposition, Moscow ID, Nov 2015
- Peterson, K.L. and **C.E. Parent**. Investigating Community Assembly in a Volcanic National Monument, UI College of Science Annual Science Exposition, Moscow ID, Nov 2015
- Roell, Y.E. and **C.E. Parent**. The relationship of metabolic rate to shell morphology and environmental differences in endemic land snails of Galapagos. UI College of Science Annual Science Exposition, Moscow ID, Nov 2015
- Winzer, S., T.A. Miura, H.A. Wichman, **C.E. Parent**. Effects of viral infection on population dynamics in *Drosophila melanogaster*, University of Idaho College of Science Expo, Moscow ID, Nov 2015
- Anast, J, LA Scott, M. Ederer, T.A. Miura, **C.E. Parent**, H.A. Wichman. Testing the Modes of Viral Transmission in *Drosophila melanogaster*, NIH IDeA Western Regional Conference, Coeur D'Alene ID, Oct 2015
- Araujo, J., T.A. Miura, L.A. Scott, H.A. Wichman, **C.E. Parent**. Viral infection and detection of Invertebrate Iridescent Virus 6 in *Drosophila melanogaster*, (poster, 1st place undergraduate award) NIH IDeA Western Regional Conference, Oct 2015
- Wendell, J., J Araujo, J. Anast, T.A. Miura, H.A. Wichman, **C.E. Parent**. Comparison of the effect of viral infection in *Drosophila melanogaster* and *D. simulans*, NIH IDeA Western Regional Conference, Coeur D'Alene ID, Oct 2015
- Winzer, S., T.A. Miura, H.A. Wichman, **C.E. Parent**. Effects of viral infection on population dynamics in *Drosophila melanogaster*, NIH IDeA Western Regional Conference, Coeur D'Alene ID, Oct 2015
- Araujo, J., T.A. Miura, L.A. Scott, H.A. Wichman, **C.E. Parent**. Viral infection and detection of Invertebrate Iridescent Virus 6 in *Drosophila melanogaster*, IBEST Annual Expo, Moscow ID, Oct 2015
- Winzer, S., T.A. Miura, H.A. Wichman, **C.E. Parent** Effects of viral infection on population dynamics in *Drosophila melanogaster*, IBEST Annual Expo, Moscow ID, Oct 2015
- Hilding, A., K.L. Peterson, **C.E. Parent**. Diversity and succession of jumping spiders

(Salticidae) and crab spiders (Thomisidae) on lava flows of different ages in Craters of the Moon National Monument and Preserve, NSF REU research symposium, Moscow ID, Aug 2015

- Nielsen, R., K.L. Peterson, **C.E. Parent**. Lichen coverage and morphology on different aged basaltic lava flows, NSF REU research symposium, Moscow ID, Aug 2015
- Araujo, J., T.A. Miura, L.A. Scott, H.A. Wichman, **C.E. Parent**. Viral infection and detection of Invertebrate Iridescent Virus 6 in *Drosophila melanogaster*, INBRE Poster Symposium, Moscow ID, Aug 2015.
- Winzer, S., J. Anast, T.A. Miura, H.A. Wichman, **C.E. Parent**. Viral Infection in *Drosophila melanogaster*, INBRE poster symposium, Moscow ID, Aug 2015
- Araujo, J., T.A. Miura, H.A. Wichman, **C.E. Parent**. Effects of Viral Infection in *Drosophila melanogaster*, Idaho Conference Undergraduate Research, Boise ID, Jul 2015
- Winzer, S., J. Anast, T.A. Miura, H.A. Wichman, **C.E. Parent**. Viral Infection in *Drosophila melanogaster*, Idaho Conference for Undergraduate Research, Boise ID, Jul 2015
- Anast, J, L.A. Scott, M. Ederer, T.A. Miura, **C.E. Parent**, H.A. Wichman. Testing the Modes of Viral Transmission in *Drosophila melanogaster*, Departmental Undergraduate Research Symposium, Moscow ID, May 2015
- Araujo, J., T.A. Miura, L.A. Scott, H.A. Wichman, **C.E. Parent**. Viral infection and detection of Invertebrate Iridescent Virus 6 in *Drosophila melanogaster*, Departmental Undergraduate Research Symposium, Moscow ID, May 2015
- Gaskin, A., **C.E. Parent**. Invasion of the African Snail, Departmental Undergraduate Research Symposium, Moscow ID, May 2015
- Walton, M., **C.E. Parent**. Species diversification on Galapagos Islands. Departmental Undergraduate Research Symposium, Moscow ID, May 2014
- Anast, J., M. Brinkmeyer, M. Licht, **C.E. Parent**. Fitness effects of viral infection on *Drosophila melanogaster*, Departmental Undergraduate Research Symposium, Moscow ID, May 2014

#### **Grants and Contracts Awarded:**

- Phillips, J.G. (postdoctoral researcher), B.G. Miller (co-PI), A.R. Warwick (co-PI), **C.E. Parent** (co-PI), BEACON Budget Request: Engaging Ecuadorian Educators in Evolutionary Emblematic Ecosystems, submitted Feb 2019, Jun 2019 – May 2020, **\$28,500 Total Project Costs**
- **Parent, C.E.** (PI), NSF CAREER: Islands as Models to Study Effects of Multidimensional Selection, submitted Jul 2017, May 2018 – May 2023, **\$1,093,880 Total Project Costs**
- Pfeiffer, D. (PI), D. Cole (co-PI), **C.E. Parent (one of several Non-PI Senior Personnel)**, NSF: REU Site: Molecular and Organismal Evolution, Apr 2018 – Apr 2021, **\$359,797 Total Project Costs**
- **C.E. Parent** (Mentor), T. Souza (Student), Phylogenetic Relationships of Lower Salmon River *Oreohelix*: The Haydeni Cluster, NSF EPSCoR, MURI Program, **\$4,500 (stipend and research funds)**, May – Jul 2017
- **C.E. Parent** (Mentor), B. Larsen (Student), Ecological Correlates of Land Snails from the Lower Salmon River, NSF EPSCoR, MURI Program, **\$4,500 (stipend and research funds)**, May – Jul 2017

- **C.E. Parent** (Mentor), A. Oetting (Student), The diversity and conservation of Mountainsnails (*Oreohelix*) from the Lower Salmon River: The Strigosa species cluster, NSF EPSCoR, MURI Program, **\$4,500 (stipend and research funds)**, Sep 2016 – May 2017
- **C.E. Parent** (Mentor), C. Goodmansen (Student), Examining Phenotypic Divergence Through Quantifying Shell Shape Differentiation, NSF EPSCoR, MURI Program, **\$4,500 (stipend and research funds)**, Sep 2016 – May 2017
- **C.E. Parent** (Mentor), K.L. Peterson (Student), Community Assembly and Disassembly in a Volcanic National Monument in the Pacific Northwest: Island Biogeography within a Continental Context. **Stillinger Herbarium Expedition Fund, University of Idaho**. May 2016 – May 2017, **\$13,493.88 (research funds)**
- **C.E. Parent** (Mentor), A.C. Kraemer (Postdoctoral Fellow), The loss of ecological, morphological, and phylogenetic heritage: extinction in Pacific land snail radiations. **NSF Postdoctoral Fellowship** Sep 2015 – Aug 2017, **\$138,000 (stipend, fringe costs, research funds)**
- **C.E. Parent** (Mentor), T.M. Linscott (Student), The dispersal of Galapagos Coleoptera: Ecology, Biomechanics, and Evolution. **NSF Graduate Research Fellowship Program** Jun 2015 – May 2018, **\$138,000 (graduate student stipend, fringe costs, research funds)**
- **C.E. Parent** (PI), Integrating Physiological and Morphometric Models to Understand Modern Extinction, **UI Office of Research and Economic Development Seed Grant**, Jun 2015 – Jun 2016, **\$11,495 Direct Costs**
- **C.E. Parent** (PI), Islands as a window into community assembly: Assessing the influence of morphology and ecological opportunity through time – **National Geographic Explorer Grant**, May 2015 – Jan 2016, **\$18,540 Direct Costs**
- H.A. Wichman (P.I.), **C.E. Parent** (Project Director), T.A. Miura (Collaborator), Center for Modeling Complex Interactions: Multi-level Dynamics of Viral Co-Infection – **NIH/NIGMS COBRE Award** Feb 2015 – Jan 2020, **\$1,512,990 Total Project Costs**
- Pfeiffer, D. (PI), D. Cole (co-PI), **C.E. Parent** (one of several Non-PI Senior Personnel), **NSF: REU Site: Molecular and Organismal Evolution**, Apr 2015 – Apr 2018, **\$359,797 Total Costs**
- Island Conservation (PI), **C.E. Parent** (Non-PI Senior Personnel), Conservation action for an IUCN Endangered snail species by assessing its population status on Floreana Island, Galápagos – **Mohamed bin Zayed Conservation Fund** Jun 2014 – Jun 2015, **\$15,000 Direct Costs**
- **Parent, C.E.** (PI), Research Grant: Galapagos Bulimulids: Diversification Amongst a Vanishing Tribe. **Conchologists of America**, 2010, **\$1,500 Direct Costs**
- **Parent, C.E.** (PI), Systematic Research Fund: On the Snails' Trail: Diversification of Galapagos Endemic Land Snails. **UK Systematic Association**, 2010, **£1,000 Direct Costs**
- **Parent, C.E.** (PI), Taxonomic study of Galapagos endemic land snails. **MCZ of Harvard University: Ernst Mayr Grant in Animal Systematics**, 2006, **\$1,375 Direct Costs**
- **Parent, C.E.** (PI), Speciation on islands: the bulimulid land snails of Galapagos. **Unitas Malacologica Research Grant**, 2004, **€1,000 Direct Costs**
- **Parent, C.E.** (PI), Species radiation on islands: the bulimulid land snails of Galapagos **Conchologists of America Walter Sage Award**, 2002, **\$1,000 Direct Costs**

- **Parent, C.E.** (PI), Ecology of the two introduced predatory wasps in the Galapagos Islands, Ecuador: threat to an island ecosystem and its tourism. **Canadian International Development Agency: Grant for Innovative Research**, 1999-2000, **CDN\$7,185 Direct Costs**

#### **Grants Currently Pending:**

- Hamilton, C.A. (co-PI), Borowiec, M. (co-PI), Harmon, L.J. (co-PI), **Parent, C.E.** (co-PI), Sullivan, J.M. (co-PI), Tank, D.C. (co-PI), Foster, J.A. (co-PI). **Google, Inc:** Applications of machine-learning for mitigating the biodiversity crisis. \$529,587, Aug 2019 – Jul 2021, submitted on Jan 22, 2019.
- Harmon, L.J. (co-PI), Gilbert, S.L. (co-PI), Jones, A.G. (co-PI), Nuismer, S.L. (co-PI), **Parent, C.E.** (co-PI), Sullivan, J.M. (co-PI), Quinn, A. (co-PI), Tank, D.C. (co-PI), Waits, L.P. (co-PI). **NSF-NRT-HDR: NoT: Naturalists of Tomorrow.** \$2,949,957, Sep 2019 – Aug 2024, submitted on Feb 6, 2019.

#### **Grants Submitted, Not Funded (Since November 2013):**

- Phillips, J.G. (postdoctoral researcher), Gering, E (co-PI), Hagey, T. (co-PI), **Parent, C.E.** (co-PI), BEACON Budget Request: Genomic Evolution of Repeated Species Invasions, submitted Feb 2019, Jun 2019 – May 2020, \$22,978
- **Parent, C.E.** (PI), Daniel, T. (co-PI), Linscott, T.M. (graduate student), **BEACON Budget Request:** SNPs, Trails, and Mountainsnails: Biomechanics and Evolution of Shell Macrostructure, submitted Feb 2017, May 2017 – May 2018, \$99,737
- **Parent, C.E.** (PI), Kraemer, A.C. (postdoc), **NSF (DEB)** Preliminary Proposal: Extinction and the Winnowing of Morphological Diversity on Islands, submitted Jan 2017
- **Parent, C.E.** (PI), NSF CAREER: Islands as Models to Study Effects of Multidimensional Selection, submitted Jul 2016
- **Parent, C.E.** (PI), Voyles, J.L. (co-PI), **NSF (IOS)** Preliminary Proposal: Shaping the Snail's Shell: Morphology, Physiology, and Ecology of Galapagos Land Snails, submitted Jan 2016
- **Parent, C.E.** (PI), Kemp, B.M. (co-PI), **NSF (DEB)** Preliminary Proposal: Snails' Shells as Predictors of Modern Extinction, submitted Jan 2016
- **Parent, C.E.** (PI), Hagey, T. (co-PI), Roell, Y.E. (graduate student), **BEACON Budget Request:** Morphological Trade-Offs Balance Predation and Physiology, submitted Feb 2016, May 2016 – May 2017, \$94,013
- Pfeiffer, D. (PI), **Parent, C.E.** (one of several Non-PI Senior Personnel), **Beckman Foundation**, submitted Aug 2015
- **Parent, C.E.** (PI), Kemp, B.M. (co-PI), Preliminary Proposal: Preliminary Proposal: Snails' Shells as Predictors of Modern Extinction. **NSF (DEB)** Submitted Jan 2015.
- **Parent, C.E.** (PI), Voyles, J.L. (co-PI), Preliminary Proposal: Shaping the Snail's Shell: Morphology, Physiology, and Ecology of Galapagos Land Snails. **NSF (IOS)** Submitted Jan 2015.
- **Parent, C.E.** (PI), Evolutionary Repeatability – from Molecules to Communities. **Sloan Research Fellowship in Computational & Evolutionary Molecular Biology.** Submitted Sep 2014.

- **Parent, C.E.** (PI), The multiple facets of Galapagos *Naesiotus* land snail diversity: exploration of the causes and consequences of shell variation. **National Geographic Explorer Grant**. Submitted Aug 2014.
- **Parent, C.E.** (PI), Elias, D.O. (co-PI), Goodman, K.R. (non-PI senior personnel), Preliminary Proposal: Adaptive Radiation as a Window into the Speciation Continuum. **NSF (DEB)** Submitted Jan 2014.

#### **Honors and Awards:**

- Early Career Faculty Award, College of Science, University of Idaho, 2017
- Postdoctoral Fellowship, Natural Sciences and Engineering Research Council of Canada, 2010 – 2012, CDN\$80,000
- Postdoctoral Fellowship, UT Austin Integrative Biology, 2010 – 2011, US\$36,000
- Natural Sciences and Engineering Research Council of Canada Travel Awards, (CDN\$2,462; total for 2002, 2006, 2007, 2008)
- President's Ph.D. Research Stipend, Simon Fraser University, 2006, CDN\$ 6,000
- Graduate Fellowship, Simon Fraser University, 2006, CDN\$ 6,000
- American Society of Naturalists Travel Award, 2003, \$500
- Simon Fraser Student Society Travel Award, 2003, CDN\$100
- Postgraduate Scholarship, Fonds Nature et Technologies du Québec, 2000 – 2004, CDN\$ 70,000
- Postgraduate Scholarship, Fonds Nature et Technologies du Québec, 1999 – 2000, CDN\$ 18,000
- Graduate Fellowship, Carleton University, 1998 – 2000, CDN\$13,200

#### **SERVICE:**

##### **Major Committee Assignments:**

##### **Departmental Committees:**

- Committee for the Chair five-year review, Department of Biological Sciences, 2018
- Biological Sciences Strategic Plan Committee, 2016 – Present
- Biological Sciences Seminar Committee, 2013 – Present
- Post-Doctoral Fellow Parent Lab Search Committee, 2015
- Research Technician Parent Lab Search Committee, 2015
- Promotion Committee for Dr. Chris Marx, 2015
- Promotion and Tenure Committee for Dr. Peter Fuerst, 2015
- Research Technician Hohenlohe Lab Search Committee, 2015

##### **University Committees:**

- Stillinger Herbarium Collections Manager Search Committee, 2018
- Bioinformatics and Computational Biology Governing Board, 2018 – Present
- Bioinformatics and Computational Biology Curriculum Committee, 2017 – 2018
- IBEST GRC Director Search Committee, 2015
- Radiation Safety Committee, 2015 – Present

##### **State Committees:**

- Idaho Conference for Undergraduate Research Organization Committee, 2015 – Present

#### **Professional and Scholarly Organizations:**

**Professional Memberships:**

- Center for Modeling Complex Interactions, 2015 – Present
- Bioinformatics and Computational Biology Graduate Program Faculty, 2013 – Present
- BEACON – NSF Center for the Study of Evolution in Action, 2013 – Present
- The Society for the Study of Evolution
- The American Society of Naturalists
- Society for Integrative and Comparative Biology
- The Canadian Society for Ecology and Evolution
- The American Malacological Society, member and editorial committee
- ACFAS, l'association francophone pour le savoir

**Manuscript Reviews (26 journals):**

- Journal of Biogeography (4-5 manuscripts per yr)
- The American Naturalist (1-2 manuscripts per yr)
- Proceedings of the Royal Society of London Series B (1-2 manuscripts per yr)
- Evolution (1-2 manuscripts per yr)
- Ecology Letters (1-2 manuscripts per yr)
- Molecular Ecology (1 ≤ manuscripts per yr)
- Current Biology (1 ≤ manuscripts per yr)
- Evolutionary Ecology (1 ≤ manuscripts per yr)
- Ecology (1 ≤ manuscripts per yr)
- Science (1 ≤ manuscripts per yr)
- Evolution Letters (1 ≤ manuscripts per yr)
- Oikos (1 ≤ manuscripts per yr)
- Systematic Biology (1 ≤ manuscripts per yr)
- Biological Journal of the Linnean Society (1 ≤ manuscripts per yr)
- Molecular Phylogenetics and Evolution (1 ≤ manuscripts per yr)
- Heredity (1 ≤ manuscripts per yr)
- Ecography (1 ≤ manuscripts per yr)
- PLoS One (1 ≤ manuscripts per yr)
- Invertebrate Biology (1 ≤ manuscripts per yr)
- Global Change Biology (1 ≤ manuscripts per yr)
- Axios (1 ≤ manuscripts per yr)
- BMC Zoology (1 ≤ manuscripts per yr)
- BMC Evolution and Ecology (1 ≤ manuscripts per yr)
- Archiv für Molluskenkunde (1 ≤ manuscripts per yr)
- Journal of Molluscan Studies (1 ≤ manuscripts per yr)
- The Auk: Ornithological Advances (1 ≤ manuscripts per yr)

**Professional Society Service:**

- Symposium co-organizer, Invertebrate on Islands, International Conference Island Biology, Jul 2016
- Newsletter Editor for the American Malacological Society, 2002 – Present
- Co-Founder (2001) and President (2001-2003) of the British-Columbia Branch of ACFAS (French Canadian association for the advancement of science)

**Ad-Hoc Grant Reviewer:**

- NIH INBRE Idaho
- National Science Foundation
- National Geographic
- Natural Sciences and Engineering Research Council of Canada
- BEACON (NSF Center for Study of Evolution in Action)
- Graduate Women in Science (GWIS)
- Conchologists of America
- UI Office of Research and Economic Development

**Grant Review Panels:**

- National Science Foundation (panels in Apr 2014, Jan 2016, Jan 2017, and Jan 2018)

**UI Ad Hoc Service:**

- Member of Faculty reviewer pool for the UI College of Graduate Studies Graduate Student Fellowship Support Program (Spring 2017 – present)
- Office of Research and Economic Development Seed Grant Review, 2018 and 2016
- Outreach presentation to high school students during UI annual engineering expo, 2018
- Undergraduate Research in the College of Science at UI, presentation for visitors at the U Idaho Bound event Mar 2017
- How to land a job in academia, Q&A session for Association of Postdocs at UI, 2015
- Research Opportunities for Undergrads in Biology, Q&A session for UI Honors Program, 2015
- Dept. of Biological Sciences Undergraduate Research Symposium Judge, 2014, 2015, 2016, 2017, 2018

#### **Outreach Service:**

##### **Community Presentations (since Nov 2013):**

- *Biogeography and Patterns of Endemism in Island Plants*. INPS White Pine Chapter & Friends, Moscow ID USA, Feb 2018
- *On the snails' trail: evolution and speciation in Galapagos' largest adaptive radiation*. Palouse-Clearwater Environmental Institute, Science After Hours seminar series, Moscow ID USA, Apr 2015
- *Replaying the tape of life: at what scale(s) does evolution repeat itself?* Palouse Ecology Evolution Systematics group, Moscow ID USA, Feb 2014

##### **Publications Partly Based on or Inspired from Research:**

- Mohan, N. 2018. A fresh look at old practices: Researchers make DNA extraction from snail shells less sluggish. *Argonaut* March 1, 2018: 3.
- Nicholls, H. 2013. Invasive species: The 18-km<sup>2</sup> rat trap. *Nature* 497:306–308.
- Keitt, B. 2013. Rid of Rats. *Galapagos Matters* Spring/Summer:8-10.
- Chin, J. 2012. *Island: A Story of the Galapagos*. Roaring Brook Press. (Children's book)
- Richards, P.M. and A. Davison. 2010. Adaptive Radiations: Competition Rules for Galapagos Gastropods. *Current Biology* 20: R28-R30.
- Kelsey, E. 2005. *Strange New Species: Astonishing Discoveries of Life on Earth*. Owlkids Books. (Children's book)

#### **Outreach to UI Students:**

- Vandal Friday and UI Idaho Bound Advising and Presentation, 2014, 2015, 2016, and 2017
- Information session for UI swim team recruits, Dec 2015

#### **Outreach to K-12 Students:**

- Several outreach presentations in K-12 schools and camps per year (USA, Canada, Ecuador), 2005 – Present

#### **Community Service:** (non-academic unrelated to employment)

- Member of the Species Survival Commission Mollusc Group for the IUCN (International Union for Conservation of Nature), 2017 – Present
- Advisor to Island Conservation and the Galapagos National Park Directorate on projects related to conservation of terrestrial molluscs, 2012 – Present

### **PROFESSIONAL DEVELOPMENT:**

#### **Scholarship:**

- “**Biodiversity Dynamics – The Nexus Between Space & Time**” Workshop, sDiv Center, Leipzig Germany, Mar and Aug 2018
- **CMCI Peer Mentoring Retreat**, Coeur d'Alene ID, Jan 2018
- “**Galapagos Evo-Geo Dynamics**” UC Berkeley, CA, Oct 2017
- “**Write Winning Grants**” Workshop WSU-UI Office of Research, 2016
- “**Toolbox**” Workshop, UI, 2016

- **“RADSeq: Applications and Opportunity”** Workshop, UI, 2016
- **“Write Winning Grants”** Workshop, NIH IDeA Western Regional Conference, 2015
- **“How to Land a Job in Academia”** Workshop, University of California Berkeley, 2013
- **“Write Winning NSF Grants”** Workshop, University of Texas at Austin, 2011
- **“Niche Theory and Speciation”** Workshop, Keszthely Hungary, 2011
- **“Dynamics of Metacommunities”** Workshop, National Center for Ecological Analysis and Synthesis (NCEAS) Santa Barbara CA, 2008



**DEPARTMENT OF  
BIOLOGICAL SCIENCES**

College of Science  
875 Perimeter Drive MS 3051  
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208-885-6280  
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uidaho.edu/sci/biology

March 22, 2019

Sabbatical Leave Evaluation Committee  
University of Idaho  
Moscow, ID 83844-3051

Dear Sabbatical Leave Evaluation Committee,

I highly endorse this sabbatical leave application for Dr. Christine Parent. Dr. Parent has a faculty appointment in the Department of Biological Sciences and currently holds the rank of tenured Associate Professor. She will be visiting the Galapagos Islands, Ecuador, and Peru during AY2020-2021, to advance her research program in evolutionary biology.

Dr. Parent is emerging as one of the most active research performers in the department and one of the few that does field work. The sabbatical she has planned will study the characterization of multiple selection pressures in natural biological systems that vary in complexity. She plans to conduct some of this research at field sites in the Galapagos Islands where she has worked previously on land snails. A new aspect of her research efforts will involve a captive breeding program for endemic land snails, in collaboration with the Galapagos National Park. The second half of her sabbatical will take place in Ecuador and Peru. She has established a connection with the Pontificia Universidad Católica del Ecuador and will conduct field trips to collect snails across Ecuador and Peru. A novel component of her time in Ecuador will be to establish a framework to allow UI teaching-major undergraduates to visit Ecuador to develop curriculum materials for K-12 schools. This effort is being done in conjunction with faculty from the UI College of Education. Collectively, these activities will extend and expand her current research program on evolutionary biology as it relates to island biodiversity and biogeography. This sabbatical is shaping up to be unique and productive, and will contribute significantly to Dr. Parent's future research success at the university.

Dr. Parent will be relieved of her departmental duties for the duration of the requested sabbatical leave period.

Sincerely,

A handwritten signature in black ink that reads 'James J. Nagler'.

James J. Nagler, PhD  
Professor and Department Chair  
Department of Biological Sciences

Christine E. Parent, Assistant Professor  
University of Idaho  
Sabbatical Plan for Academic Year 2020-2021

**Appendix**

**ITINERARY**

Time Period	Objectives	Host	Location
Aug 2020 – Dec 2020	1, 2, and 4	Christian Sevilla, National Park of Galapagos	Puerto Ayora, Santa Cruz Island, Ecuador
Jan 2021 – May 2021	3	Dr. Hugo Navarrete, Pontificia Universidad Católica del Ecuador (PUCE)	Quito Ecuador

March 22, 2019

Dr. Christine E Parent  
Department of Biological Sciences  
University of Idaho  
875 Perimeter Drive MS 3051  
Moscow ID 83844-3051  
USA

Dear Dr. Parent,

On behalf of the Galapagos National Park Directorate, I would like to formally invite you as a visiting scholar. This invitation is effective for the period of August 15th to December 31<sup>st</sup>, 2020.

I will be your host during your time in Galapagos and will work with you as you engage in research activities in Galapagos. During your time in Galapagos I will support your activities by providing help with obtaining research and sample exportation permits, field logistics, and by assigning park rangers to assist you with field activities. The park will also help with inter-island transport whenever possible.

As we agreed, I expect you to provide your own funding to cover all the expenses of your stay in Galapagos, including lodging, food, land transport, and health insurance for yourself and your dependents.

I very much look forward to your upcoming visit to Galapagos. Your extended presence on the islands will be productive for the protection of Galapagos endemic snails.

Please don't hesitate to contact me if you have any questions.

Sincerely,



**Christian Sevilla Paredes**  
Responsable de Proceso  
Conservación y Restauración de  
Ecosistemas Insulares



Parque Nacional  
**GALÁPAGOS**  
Ecuador

March 22, 2019

Dr. Christine E Parent  
Department of Biological Sciences  
University of Idaho  
875 Perimeter Drive MS 3051  
Moscow ID 83844-3051  
USA

Dear Dr. Parent,

This letter is to indicate that I fully support your plans to work with us to develop inquiry-based research experience in the Tomas de Berlanga School on Santa Cruz Island in Galapagos Ecuador.

Sincerely,



Justin Scoggin  
Principal  
Tomás de Berlanga School  
Puerto Ayora, Galapagos Islands, Ecuador



March 22, 2019  
Oficio-DGA-DINV-314-2019

Dr. Christine E. Parent  
**Department of Biological Sciences**  
University of Idaho

Dear Dr. Parent:

On behalf of the Facultad de Ciencias Exactas y Naturales, I would like to formally invite you to Pontificia Universidad Católica del Ecuador (PUCE) in Quito Ecuador as a visiting scholar. This invitation is effective for the period of January 1st to May 31st 2021.

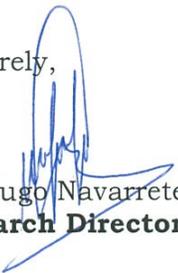
I will be your faculty host during your time at PUCE and will work with you as you engage in research activities at our institution. During your time at PUCE, the following support and resources will be made available to you: office space with phone and shared lab space.

It is my understanding that you will provide your own funding, from the University of Idaho and your NSF funding to cover all the expenses of your stay at PUCE in Quito and your research activities in Ecuador, including health insurance for yourself and your accompanying dependents.

You will be responsible for finding your own housing accommodations and providing your own room and board.

We look forward to welcoming you to PUCE. I am certain that you will have a productive and rewarding experience and we will gain much from your presence on campus. Please feel free to contact me should you require any additional assistance.

Sincerely,

  
Dr. Hugo Navarrete Z.  
**Research Director**

