David J. Páez, Ph.D.

Contact Information	220 Bodega Ave, Petaluma, CA, 94952	+1 773 993 8875 dpaezmc@gmail.com Website: dpaezmc.github.io

Research key words: Disease ecology, Evolutionary ecology, quantitative genetics, host-pathogen interactions, theoretical ecology and evolution.

Education

2004-2011: **Ph.D.**, **Université Laval**, Québec, Canada

- Thesis Topic: *Genetic variation in alternative life-history strategies in Atlantic salmon (Honor Roll)*
- Advisors: Dr. Julian Dodson and Dr. Louis Bernatchez

2000-2003: **B.S (Hons I).**, **Monash University**, Melbourne, Australia

- Majors: *Evolution and Genetics*

Professional experience

2017-Present: **Post-Doctoral Fellow**, **University of Alabama, Tuscaloosa, AL**

- Research Topic: *Effects of generalist/specialist genogroups on IHNV infection dynamics in multiple salmonid species*
- Advisor: Dr. Paige Ferguson

Responsibilities:

- Develop Bayesian models of disease transmission that produce unbiased parameter estimates with missing data
- Estimate transmission routes and probabilities of infection for various salmonid species in the Columbia River Basin.
- Help design experiments to measure disease transmission

2015- Feb 2017: **Post-Doctoral Fellow**, **Montana State University**, Bozeman, MT

- Research Topic: *Dynamics of Hendra virus in Australian fruit bats*
- Advisor: Dr. Raina Plowright

Responsibilities:

- Analyze data collected on Hendra virus prevalence over space and time using time series and spatial statistics
- Develop mechanistic models of bat movement to evaluate risks of disease spillover

2011-2015: **Post-Doctoral Scholar**, **University of Chicago**, Chicago, IL

- Research Topic: *Eco-evolutionary dynamics of host-pathogen interactions*
- Advisor: Dr. Greg Dwyer

Responsibilities:

- Develop mechanistic models of insect outbreaks and disease dynamics
- Write MCMC sampling routines to estimate parameters from non-linear models
- Use mixed effects models for the analyses of quantitative genetics data
- Design field and laboratory experiments and collect data
- Supervise research teams and mentor undergraduate students

Teaching experience

Lecturing undergraduate courses

- 2015: Introductory Biology, University of Chicago. 12 weeks
- Design and instruct all lecture and laboratory work for incoming undergraduate students.
- Grade and monitor student progress
- Hold office hours and work with students to achieve learning goals
- Supervise an undergraduate student teaching assistant

- 2010: Ecology and Evolution of Fishes. Université Laval. 25 hours
  - Design lectures on life-history evolution of fishes and supervise labs on fish taxonomy.

Teaching assistant

- 2009: Diversity and Ecology of Plants. 50 hours. Université Laval
  - Help students work through laboratory protocols and draw conclusions
  - Monitor student progress and grade laboratory work

Pedagogical training

- 2014: Scientific Teaching Workshop for biologists focusing on active learning techniques, University of Chicago.

Mentoring experience

Graduate student mentoring

- 2012-2013: Ms. Elise Mazé-Guilmo*

Undergraduate student mentoring

- 2013-2014: Ms. Kathleen Smith*, University of Chicago.
- 2013-2014: Mr. Asher Hudson*, Univeristy of Chicago.
- 2009-2010: Mr. Brian Boivin, Université Laval.
- 2008-2009: Mr. Nicolas Allen-Demers, Université Laval.

* Manuscripts published or in preparation

Computing experience

- 12 years using R.
- Three years using Mathematica.
- Six years using LaTeX
- Familiarity with Html, CSS and java.
- Some experience with C++

Grant writing experience

2016 National Institutes of Health IDeA Program. "Determining thresholds of disease spillover dynamics (USD $57,600) PI: Raina K. Plowright, coPI: **David J. Páez**
2014: NSF's panel of Ecology of Infectious Disease. "Host-pathogen coevolution and insect outbreaks" not funded.

Citation metrics based on Google Scholar

Citations : 428
h-index: 9
i-10 index: 9
Publication mean and median Impact Factor: 4.00, 3.57

Refereed Journal Publications

1. **Páez D. J.**, Restif, O., Ebby, P., Plowright, R. 2018. Optimal foraging in seasonal environments: Implications for residency of Australian flying foxes in food-subsidized urban landscapes. Philosophical Transactions of the Royal Society B: Biological Sciences. 373: 20170097. Number of citations: 3; Journal IF: 5.85 as of 2016

2. **Páez D. J.**, Giles, J., McCallum, H., Field, H., Jordan, D., Peel, A., Plowright, R. 2017. Conditions affecting the timing and magnitude of Hendra virus shedding across pteropodid bat populations in Australia. Epidemiology and Infection. 145: 3143-3153. Number of citations: 3; Journal IF: 2.08 as of 2016

3. Plowright R. K., Manlove K., Besser T. B., **Páez D. J.**, Andrews K. R., Matthews P. E., Waits L., Hudson P. J., Cassirer E. F. 2017. Agespecific infectious period shapes dynamics of pneumonia in bighorn sheep. Ecology Letters. 20: 1325-1336. Number of citations: 4; Journal IF: 9.45 as of 2016

4. **Páez D. J.**, Fleming–Davies A., Dushoff J., Dukic V., Dwyer G. 2017. Eco-evolutionary theory and insect outbreaks. The American Naturalist. 189: 616-629. Number of citations: 1; Journal IF: 4.18 as of 2016

5. **Páez D. J.**, Dodson J. J. 2017. Environment-specific heritabilities and maternal effects for body size, morphology and survival in juvenile Atlantic salmon (*Salmo salar*): Evidence from a field experiment. Environmental Biology of Fishes. 100: 209–221. Number of citations: 0; Journal IF: 1.31 as of 2016

6. Menalled F. D., Peterson R. K. D., Smith R. G., Curran W.S., **Páez D. J.**, Maxwell B. 2016. The eco-evolutionary imperative: revisiting weed management in the midst of a herbicide resistance crisis. Sustainability. 8: 1297. Number of citations: 8; Journal IF: 1.79

7. Hudson A.* , Fleming–Davies A., **Páez D. J.**, Dwyer G. 2016. Genotype by genotype interactions between an insect and its pathogen. Journal of Evolutionary Biology. 29: 2480–2490. *Undergraduate student. Number of citations: 5; Journal IF: 2.79

8. **Páez D.J.***, Fleming–Davies, A.*, Dwyer G. 2015. Effects of pathogen exposure on life-history variation in the gypsy moth (*Lymantria dispar*). Journal of Evolutionary Biology. 28: 1828–1839. * Equal first authors. Number of citations: 8; Journal IF: 2.78

9. Mazé-Guilmo E.*, Loot G., **Páez D. J.**, Lefèvre T., Blanchet S. 2014. Heritable variation in parasite tolerance and resistance inferred from a wild host-parasite system. Proceedings or the Royal Society of London B. 281: 20132567 . * Master of science student. Number of citations: 18; Journal IF: 5.05

10. Dodson J. J., Thériault V., Aubin-Horth N., **Páez D. J.** 2013. The evolutionary ecology of alternative migratory tactics in salmonid fishes. Biological Reviews. 88: 602–625. Number of citations: 104; Journal IF: 9.79

11. **Páez D. J.**, Bernatchez L., Dodson J.J. 2011. Alternative life-histories in the Atlantic salmon: genetic covariances within the sneaker sexual tactic in males. Proceedings of the Royal Society of London B. 278: 2150–2158. Number of citations: 16; Journal IF: 5.42

12. **Páez D. J.**, Bonenfant C., Rossignol O., Guderley, H. E., Bernatchez L., Dodson J. J. 2011. Alternative developmental pathways and the propensity to migrate: a case study in Atlantic salmon. Journal of Evolutionary Biology. 24: 245–255. Number of citations: 38; Journal IF: 3.28

13. **Páez D. J.**, Morrissey M., Bernatchez L., Dodson J.J. 2010. The genetic basis of early-life morphological traits and their relation to alternative male reproductive tactics in Atlantic salmon. Journal of Evolutionary Biology. 23: 757–769. Number of citations: 29; Journal IF: 3.67.

14. **Páez D. J.**, Hedger R., Bernatchez L., Dodson J.J. 2008. The morphological plastic response to water current velocity varies with age and sexual state in juvenile Atlantic salmon, Salmo salar. Freshwater Biology. 53: 1544–1554. Number of citations: 25; Journal IF: 2.70

15. Blanchet S., **Páez D. J.**, Bernatchez, L., Dodson J. J. 2008. An integrated comparison of captive-bred and wild Atlantic salmon (Salmo salar): implications for supportive breeding programs. Biological Conservation. 141: 1989–1999. Number of citations: 84; Journal IF: 3.57

16. Roberge C., **Páez D. J.**, Rossignol O., Guderley H, Dodson, J. J., Bernatchez L. 2007. Genome-wide survey of the gene expression response to saprolegniasis in Atlantic salmon. Molecular Immunology. 44: 1374–1383. Number of citations: 55; Journal IF: 3.74

17. **Páez D. J.***, Govedich F.R., Bain B.A., Kellett M., Burd M. 2004. Costs of parental care on hunting behaviour of Helobdella papillornata (Euhirudinea: Glossiphoniidae). Hydrobiologia. 519: 184–188. Number of citations: 4; Journal IF: 0.65 *Undergraduate student.

Manuscripts in Preparation

Páez D. J., LaDeau S., Breyta R., Kurath G., Ferguson P. Effects of generalist/specialist genogroups on the infection dynamics of IHNV on different salmonid species. *In prep.*

Páez D. J., Fleming-Davies A., Kennedy D., Smith K*., Dwyer G. Effects of Serial Passaging on Disease Transmission and Fitness Tradeoffs. *In revision, Evolution.* *Undergraduate student

Fleming–Davies A.*, **Páez D. J.***, Dwyer G. A birth–death model to explain life-history trade–offs in host resistance and pathogen kill time *In prep.* *Joint first authors.

Invited talks

- Palomarin Field Station, Point Blue Conservation Science, CA — Jan 2017
- Deakin Centre for Integrative Ecology, Deakin University, Aus — Dec 2016
- Institute of Animal Health and Comparative Medicine, University of Glasgow, UK — Nov 2016
- Department of Veterinary Medicine, University of Cambridge, UK — Oct 2016

Conference presentations

- Ecology and Evolution of Infectious Diseases, UK — 2018
- American Society for the Study of Evolution, TX — 2016
- Ecology and Evolution of Infectious Diseases, NY — 2016
- American Society for the Study of Evolution, UT — 2013
- Ecology and Evolution of Infectious Diseases, CA — 2012
- Canadian Society for the Study of Ecology and Evolution, Canada — 2010
- 12th Congress of the European Society for Evolutionary Biology, Italy — 2009
- Canadian Society for the Study of Ecology and Evolution, Canada — 2009
- Canadian Conference for Fisheries Research, Canada — 2009

Awards

- 2016 **RCN-IDEAS** exchange award funded by Princeton University
- 2011 P.h.D Thesis selected for the Honor Roll, Université Laval
- 2010 Research Excellence Award, Université Laval
- 2003 Heron Island Excellence Award, Monash University

Outreach

- Instructed introductory biology for first generation incoming college students under the 2015 Chicago Academic Achievement Program. University of Chicago.
- Participated in postdoctoral associations at University of Chicago and Montana State University to organize meetings for career development.
- Reviewing: Philosophical Transactions of the Royal Society, Heredity, Evolutionary Applications, Evolutionary Ecology, Axios reviews, Theoretical Ecology, Journal of Fish Biology, PLOS one

References

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Language Skills

I am fluent in Spanish and French