CARLY ROZINS

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EDUCATION

PhD in Applied Mathematics *Sept., 2016*
Queen's University
Thesis: An impulsive differential equation model for Marek's disease.
Advisors: Troy Day and Peter Taylor

MSc in Applied Mathematics *Sept., 2009*
Queen's University
Thesis: Parameter estimation when there is process and observational error.
Advisor: Peter Taylor

BSc in Biology (major) and Mathematics (minor) *June, 2008*
University of Guelph

EXPERIENCE

Postdoctoral Research Fellow (Mathematical Modelling) *Jan., 2019- present*
Integrative Biology, University of California, Berkeley

Postdoctoral Research Fellow (Mathematical Modelling) *Sept., 2016- Dec., 2018*
College of Life and Environmental Sciences, University of Exeter
Visiting Scholar: *Integrative Biology, University of California, Berkeley*

University Lecturer *Jan., 2015- April., 2016*
Queen's University, Kingston, Ontario

Mathematical Modelling and Surveillance Internship *Nov., 2009 - Feb., 2010*
Canadian Consortium for Pandemic Preparedness Modelling
McGill University and Direction De La Santé Publique, Montreal, QC

PUBLICATIONS AND PREPRINTS

1. Bartlett*, L.J., **Rozins*, C.**, Brosi, B.J., Delaplane, K.S., de Roode, J.C., White, A.R., Wilfert, L., Boots, M. (2019). Industrial bees: when agricultural intensification doesn't impact local disease prevalence. J Appl Ecol. (Accepted)

2. Silk, M., Hodgson, D.J., **Rozins, C.**, Croft D.P., Delahay, R.J, Boots, M., McDonald, R.A. (2019) Integrating behaviour, demography and disease dynamics through network models: applications to disease management in declining wildlife populations. Philos Trans R Soc B (Accepted).

3. **Rozins, C.** Day, T., Greenhalgh, S. (2019), Managing Marek's disease in the egg industry. Epidemics. 27: 52-58.

4. **Rozins*, C.**, Silk*, M., Croft, D.P., Delahay, R.J., Hodgson, D., McDonald, R.A., Weber, N., Boots, M. (2018), Social structure and individual variation in contacts protects against severe epidemics in European Badgers. Ecol. Evol. 8.23: 12044-12055.

5. **Rozins, C.** and Day, T. (2017). The industrialization of farming may be driving virulence evolution. Evol Appl, 10: 189-198.
6. **Rozins, C.** and Day, T. (2016). Disease eradication on large industrial farms, J. Math. Biol. 73(4): 885-902
7. Cressler, C.E., McLeod, D.V., **Rozins, C.**, Van Den Hoogen, J. and Day, T. (2016), The adaptive evolution of virulence: a review of theoretical predictions and empirical tests. Parasitology, 143(7): 915-930.

* joint lead authors

In Review

1. **Rozins. C**, Hood, M.E. Cho, J.H Antonovics, J. Hexagonal fan design. Methods Ecol Evol. (Submitted March 2019).

TECHNICAL REPORTS

1. Rozins, C., Greenhalgh, S., Day, T. (2017), The economic burden of Marek's disease on egg production. Egg Farmers of Canada Fact Sheet.
2. Rozins, C., Delorme, M, Charland, K, Dushoff, J., Buckeridge, D.L. (2011), Modeling the multiple-wave pattern of the 2009 A/H1N1 pandemic. Canadian Consortium for Pandemic Preparedness Modelling Internship final report

GRANTS

Egg Farmers of Canada, *$10,000 CAD* *Sept., 2016*
Reducing the economic impact of Marek's disease on egg production through the use of floor pens as hen housing.

SMB Landahl-Busenberg travel grant, *$750 USD* *Summer, 2018*

Queen Elizabeth II Graduate Scholarship in Science and Technology, $15,000 CAD
Queen's University, Kingston, ON. Winter, 2014

COURSES (LECTURER)

Calculus II for Engineers, *Jan., 2016 - April, 2016*
Faculty of Engineering and Applied Science
(222 students), Queen's University, Ontario

Calculus I for Engineers, *Sept., 2015 - Dec., 2015*
Faculty of Engineering and Applied Science
(288 students), Queen's University, Ontario

Differential and Integral Calculus I, *June, 2015 - Aug., 2015*
Faculty of Arts and Sciences (online)
(150 students), Queen's University, Ontario

Introduction to Linear Algebra, *Jan., 2015 - April, 2015*
Faculty of Arts and Sciences

(207 students), Queen's University, Ontario

AWARDS

Engineering and Applied Science Best First Year Instructor Teaching Award Winter, 2016
Queen's University, Kingston, ON.

Best Student Poster Award Dec., 2013
Canadian Mathematics Society, Winter Meeting, Ottawa, ON.

OTHER ACADEMIC TEACHING EXPERIENCE

Guest Lecturer

- Infectious Disease Dynamics, University of California, Berkeley — Winter, 2019
- Host-Pathogen Interactions, University of California, Berkeley — Fall, 2017
- Infectious Disease Dynamics, University of California, Berkeley — Winter, 2016
- Biomathematics, Queen's University — Fall, 2016
- Statistics for Psychology, St. Lawrence College — Winter, 2014
- Evolutionary Game Theory (three lectures), Queen's University — Fall, 2011

Course Coordinator

- Coordinator for Differential and Integral Calculus I and II, Queen's University — 2013/2014
- TA Coordinator for Calculus I, UBC, Okanagan — Winter, 2011

Teaching Assistant Appointments

- *Lab and Tutorial Instructor*
  - Numerical Methods, Queen's University — Winter, 2014
  - MATLAB for Civil Engineers, Queen's University — Fall, 2011/2012
  - Introductory Physics (Mechanics), UBC, Okanagan — Fall, 2010
- *Field Course Assistant*
  - Models in Evolution, Bamfield Marine Science Center, University of Victoria — Summer, 2010
- *Course Teaching Assistant / Marker*
  - Calculus I, II, III, Queen's University — 2008-2014
  - Linear Algebra, Queen's University, UBC, Okanagen
  - Partial Differential Equations, UBC, Okanagen
  - Evolutionary Game Theory, Queen's University
  - Biomathematics, Queen's University
  - Numerical Methods, Queen's University

STUDENT PROJECT SUPERVISION

Whitney Mgbara (PhD Student), University of California, Berkeley. 2018 - present
Project: Modelling the multiple wave pattern of the 2009 AH1N1 pandemic.

Laura Alexander (PhD Student), University of California, Berkeley. 2017 - present
Project: Evolution of multiple transmission modes.

Allison Mahoney (Undergraduate Student), Siena College, NY. Summer, 2018
Project: The threat of bacterial kidney disease in salmon aquiculture.

Lewis Bartlett (PhD Student), University of California, Berkeley. 2016-2017
Project: Industrial bees: when agricultural intensification doesn't impact local disease prevalence.

PRESENTATIONS

Invited Talks

- *Queen's University, Department of Ecology and Evolution Seminar* Kingston, ON, Canada Sept., 2019
- *Trent University., Department of Mathematics Seminar* Peterborough, ON, Canada Dec., 2018
- *University of Guelph., Animal Biosciences Seminar* Guelph, ON, Canada Oct., 2018
- *McMaster University.* Biology Seminar, Hamilton, ON, Canada July, 2010
- *Direction de Danté Publique.* Montreal, QC, Canada Jan., 2010

Presentations

- *Society for Mathematical Biology (SMB).* Montreal, QC, Canada July, 2019
- *Disease Ecology Meeting Princeton/UCB/Hokkaido.* Sausalito, CA Sept., 2018
- *SMB.* Sydney, NSW, Australia July, 2018
- *SMB.* Salt Lake City, UT, USA July, 2017
- *Evolution.* Austin, TX, USA June, 2016
- *SMB.* Knoxville, TN, USA July, 2013
- *UBC Graduate Seminar for Math, Stat and Physics.* Kelowna, BC, Canada Oct., 2010
- *PIMS IGTC Summit.* Naramata, BC, Canada Oct., 2010

Posters

- *Ecology and Evolution of Infectious Diseases (EEID).* Santa Barbara, CA, USA June, 2017
- *EEID.* Ithaca, NY, USA June, 2016
- *EEID.* Athens, GA, USA May, 2015
- *EEID.* Fort Colins, CO, USA May, 2014
- *Canadian Math Society Winter Meeting.* Ottawa, ON, Canada Dec., 2013

Math Education Presentations and Working Groups

- *CMESG.* Kingston, ON, Canada June, 2016
- *MathEd Forum.* Fields Institute, Toronto, ON, Canada Nov., 2015
- *Math and Coding Symposium.* London, ON, Canada June, 2015
- *CMESG.* Moncton, NB, Canada June, 2015
- *CMEF.* Ottawa, ON, Canada May, 2014

ACADEMIC SERVICE

Editor

- Newsletter Editor, Canadian Mathematics Education Study Group, 2016-present

Science Camp Instructor/Coordinator

- *Math Festival*, Gr. 9-12, Marin Academy, Marin, CA Fall, 2016
- *Math Quest, Queen's Math Camp for Girls*, Gr.10-11, Queen's University 2014-2016
- *Enrichment Studies Unit , course for at risk students*, Gr.7-8, Queen's University Fall, 2015
- *Enrichment Studies Unit , academic mini course*, Gr.7-8, Queen's University Fall, 2014

Exhibit Organizer

- College Royal, Club Exibit, Math&Stats Club, University of Guelph Winter, 2008

Voluntary Positions Held

- *High School Tutor*, Girls Inc of Alameda, Oakland, CA — 2018-present
- *President of the Graduate Math Society*, Queen's University — 2013-2014
- *Science Fair Judge, Glenmore Elementary School*, (2010), Kelowna, BC — Fall, 2010
- *President of the Mathematics and Statistics Club*, University of Guelph — 2007-2008
- *Student Council Member* , University of Guelph — 2007-2008

COMPUTING SKILLS

Programming languages: Matlab, R, MAPLE, Python

REFERENCES

Troy Day
Queen's University
troy.day@icloud.com

Janis Antonovics
University of Virginia
ja8n@virginia.edu

Mike Boots
University of California, Berkeley
mboots@berkeley.edu

Peter Taylor
Queen's University
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