Kimberly J. Gilbert — Ph.D. Candidate

Contact Information

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Employment

Post-doctoral Fellow, University of Toronto — November 2016 –
Advisors: Dr. Aneil A. Agrawal, Dr. Stephen I. Wright

Education

Ph.D. Zoology, University of British Columbia — 2011 – Present
Advisor: Dr. Michael C. Whitlock

B.Sc. Biology, University of Virginia — 2006 – 2010
Graduated with Distinction
Specialization in environmental & biological conservation

Awards & Funding

University of Toronto EEB Post-doctoral Fellowship; $40,500 CAD	2016 – 2017
Declined; NSF Post-doctoral Research Fellowship (NPGI), $210,000 USD	2016 – 2019
Cordula and Gunter Paetzold Fellowship, UBC; $18,000 CAD	2015 – 2016
Declined; Zoology Graduate Fellowship, UBC; $16,000 CAD	2015 – 2016
Ann and William Messenger Graduate Fellowship, UBC; $700 CAD	2015
Zoology Graduate Fellowship, UBC; $11,000 CAD	2014 – 2015
Zoology Graduate Student Travel Award, UBC; $500 CAD	2014
Frieda Granot Graduate Scholarship in Interdisciplinary Research; $200 CAD	2013 – 2014
Theodore E Arnold Fellowship; $7,750 CAD	2013 – 2014
Patrick David Campbell Graduate Fellowship; $8,050 CAD	2013 – 2014
Declined; Zoology Graduate Fellowship, UBC; $11,000 CAD	2013 – 2014
Zoology Graduate Student Travel Award, UBC; $500 CAD	2013
CIEE Synthesis Meeting Travel Grant, Landscape Genetics Graduate Seminar	2012
BRITE Fellowship, UBC; $21,000 CAD	2011 – 2013

Publications

[1] **Gilbert KJ** (2016) Invited Perspective: Identifying the number of population clusters with STRUCTURE: Problems and solutions. *Molecular Ecology Resources*, 16(3), 601-603.

[2] **Gilbert KJ**, MC Whitlock (2015) Evaluating methods for estimating local effective population size with and without migration. *Evolution*, 68(8), 2154-2166.

[3] Santiso X, L Lopez, **KJ Gilbert**, R Barreiro, MC Whitlock, R Retuerto (2015) Patterns of genetic variation within and among populations in *Arbutus unedo* and its relation with selection and evolvability. *Perspectives in Plant Ecology, Evolution and Systematics*, 17(3), 185-192.

[4] **Gilbert KJ**, MC Whitlock (2015) Q_{ST}-F_{ST} comparisons with unbalanced half-sib designs. *Molecular Ecology Resources*, 15(2), 262-267.

[5] Caplins SA, **KJ Gilbert**, C Ciotir, J Roland, SF Matter, N Keyghobadi (2014) Landscape structure and the genetic effects of a population collapse. *Proceedings of the Royal Society B*. 281: 20141798; doi: 10.1098/rspb.2014.1798

[6] Vines TH, AYK Albert, RL Andrew, F Débarre, DG Bock, MT Franklin, **KJ Gilbert**, J-S Moore, S Renaut, DJ Rennison (2014) The availability of research data declines rapidly with age. *Current Biology*, 24, 94-97.

[7] Vines TH, RL Andrew, DG Bock, MT Franklin, **KJ Gilbert**, NC Kane, EJ Kleynhans, J-S Moore, BT Moyers, S Renaut, DJ Rennison, T Veen, S Yeaman (2013) Mandated archiving greatly improves access to research data. *FASEB Journal*, 27(4), 1304-1308.

[8] **Gilbert KJ**, RL Andrew, DG Bock, MT Franklin, NC Kane, J-S Moore, BT Moyers, S Renaut, DJ Rennison, T Veen, TH Vines (2012) Recommendations for utilizing and reporting population genetic analyses: The reproducibility of genetic clustering using the program STRUCTURE. *Molecular Ecology*, 21(20), 4925-4930.

[9] Keller SR, **KJ Gilbert**, PD Fields, DR Taylor (2012) Bayesian inference of a complex invasion history revealed by nuclear and chloroplast genetic diversity in the colonizing plant, *Silene latifolia*. *Molecular Ecology*, 21(19), 4721-4734.

[10] Whitlock MC, **KJ Gilbert** (2012) Q_{ST} in a hierarchically structured population. *Molecular Ecology Resources*, 12(3), 481–483.

INVITED SEMINARS & WORKSHOPS

Invited Seminar: Population genetic inference in the face of demographic history

University of Bern - Bern, Switzerland — August 2015

Invited Seminar: Estimating effective population size and the reproducibility of science

Monash University - Melbourne, VIC, Australia — February 2015

Duke University Pop Bio Seminar Series - Durham, NC, USA — December 2014

Reproducible Science Hackathon, NESCent — December 2014

21-member working group aiming to develop a curriculum and workflow for teaching reproducible science

SimBank, NESCent Catalysis Meeting — November 2014

25-member working group aiming to create a collection of openly available simulation results to facilitate testing of statistical population genetic and phylogeographic methods

PRESENTATIONS

The role of genetic architecture and environmental gradients in adaptation during range expansion – KJ Gilbert & MC Whitlock

2016 *Invited Talk:* CSEE "Theoretical ecology and evolutionary biology" symposium, St. John's, Newfoundland

Data availability, archiving, and scientific reproducibility – KJ Gilbert

2016 *Invited Talk:* American Society of Mammalogists Annual Conference "Big data meets mammalogy: how to find and share data" symposium, Minneapolis, Minnesota

Local adaptation and range expansions – KJ Gilbert & MC Whitlock

2015 *Talk:* SFU-UBC-UVic-UW Ecology and Evolution Retreat, Brackendale, BC

Validating SNP loci underlying local adaptation in lodgepole pine – KJ Gilbert, S Yeaman, KE Lotterhos, KA Hodgins, H Suren, JA Holliday, S Nadeau, SN Aitken, MC Whitlock

2015 *Poster:* 15th ESEB Congress, Lausanne, Switzerland

Evaluating methods for estimating effective population size in the presence of migration – KJ Gilbert & MC Whitlock

2014 *Talk:* Evolution Meeting, Raleigh, NC, USA

2014 *Talk:* Evo-WIBO Conference (Evolutionary Biology in the Pacific Northwest)

Estimating effective population size in natural populations: Are we making assumptions we should not be making? – KJ Gilbert, PD Fields, DR Taylor

2013 *Talk:* Evolution Meeting, Snowbird, Utah, USA

2013 *Talk:* Canadian Society for Ecology and Evolution (CSEE), Kelowna, BC

Local adaptation in the lodgepole pine (*Pinus contorta*). – KJ Gilbert & MC Whitlock

2012 *Talk:* SFU-UBC-UVic Ecology and Evolution Retreat, Brackendale, BC

Effective population size estimates in a demographically and genetically monitored metapopulation of *Silene latifolia*. – KJ Gilbert, PD Fields, DR Taylor

2012 *Poster:* Evolution Ottawa, 1st Joint Congress on Evolutionary Biology

Range expansion and adaptation across heterogeneous environments.
– KJ Gilbert & MC Whitlock

2012 *Talk:* Landscape Genetics Symposium, CIEE Graduate Mini-Course, Toronto

2012 *Poster:* Evo-WIBO Conference (Evolutionary Biology in the Pacific Northwest)

Inferred invasion history of *Silene latifolia* into North America utilizing population genetic data and approximate Bayesian computation.
– KJ Gilbert, SR Keller, PD Fields, DR Taylor

2011 *Poster:* 13th ESEB Congress, Tuebingen, Germany

2011 *Poster:* SFU-UBC-UVic Ecology and Evolution Retreat, Brackendale, BC

Teaching Experience

Fundamentals of Evolutionary Biology, BIOL 336 — Fall 2012, Spring 2013

- Discussion-based tutorial covers natural selection, population genetics, quantitative genetics, systematics, and classical and molecular approaches to the study of evolution.
- Three discussion sections of 45 students total per semester

Fundamentals of Biostatistics, BIOL 300 — Fall 2013, 2014, 2015

- Statistical procedures for biological research; estimation, hypothesis testing, goodness of fit, analysis of variance and regression; use of computers for statistical analysis.
- Two sections of 70 students total in 2013, one section of 36 students and served as lab coordinator for 254 students enrolled in course in 2014, and one section of 36 students and served as lab coordinator for 275 students enrolled in course in 2015.

Volunteer & Outreach

Reviewer for *New Phytologist*, *Heredity*, *Molecular Ecology Resources*, *Ecology and Evolution*, *PeerJ*, *Tree Genetics & Genomes*

Society member: American Society of Naturalists, Society for the Study of Evolution, European Society for Evolutionary Biology

Graduate Student Council Member, American Society of Naturalists 2013 – 2016

- Council Chair for 2015-2016 term
- Organized the student-mentor mixer at the 2014 Evolution Meeting in Raleigh, NC
- Serve on the workshops committee for ASN-sponsored workshops

Faculty Search Committee: Graduate Student Representative 2014

- Evolutionary biology CRC2 job search for the Department of Zoology, University of British Columbia

Volunteer mist-netting and bird banding with Wild Research 2013 – 2016

- Participate in winter, spring migration, and fall migration bird monitoring at Iona Island Bird Observatory, Vancouver, BC
- Teach proper bird handling, aging, data collection, and mist net extraction techniques to new volunteers
- Assist in teaching other volunteers and visitors to the station about the species conservation and monitoring, and the general tasks of running a banding station

Previous Research Experience

Independent Study & Research Technician September 2009 – June 2011

- Evolution and Population Genetics Laboratory, University of Virginia
- Genetic analysis of metapopulation processes in the *Silene-Micobotryum* host-pathogen system
  Supervisors:
  - Dr. Douglas R. Taylor, Professor, Dept. of Biology, Univ. of Virginia
  - Peter D. Fields, Ph.D. Candidate, Dept. of Biology, Univ. of Virginia
  - Dr. Janis Antonovics, Lewis and Clark Professor of Biology, Dept. of Biology, Univ. of Virginia

Field Technician & Research Assistant May 2009 – August 2009

- Blandy Experimental Farm – The University of Virginia
- Field research on effects of tropospheric ozone on native vs. invasive tree species
  Supervisors:
  - Dr. David E. Carr, Research Associate Professor, Dept. of Environmental Sciences; Director, Blandy Experimental Farm, Univ. of Virginia
  - Eric E. Elton, Ph.D. Candidate, Dept. of Environmental Sciences, Univ. of Virginia

Bird Banding Intern May 2008 – August 2008

- Monitoring Avian Productivity and Survivorship (MAPS) – The Institute for Bird Populations
- Extracted, banded, and processed passerines and near-passerines during summer breeding season to monitor populations of local species
  Supervisory Biologist:
  - James Junda