

Laura E. Perry

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EDUCATION

Doctor of Philosophy Candidate (Environmental and Life Sciences), Trent University **Present**

Thesis: *Assessment of cytokinin based grain yield in wheat* (*Triticum aestivum* L.)

Supervisor: Dr. R.J. Neil Emery (Trent University) and Henry Olechowski (Dow AgroSciences)

- The purpose of the project is to determine if a relationship exists between wheat grain yield and specific hormonal (cytokinin) activity during kernel development
- Genetic expression levels and sequences of low- and high-yielding varieties of wheat are compared using modern molecular techniques including, but not limited to, RNA extractions, RT-PCR, and the rapid amplification of cDNA ends (RACE) strategy
- Designed randomized block experiment
- Instructed laboratory assistants on the identification of stages of wheat kernel development and proper field collection procedures
- Successfully passed candidacy exam (August 2014)

Master of Science (Environmental and Life Sciences), Trent University **2011**

Thesis: *The evolution of sexual systems in the flowering plants: Experimental case studies using Sagittaria latifolia and Mercurialis annua*

Supervisor: Dr. Marcel E. Dorken (Trent University)

- Answered evolutionary questions regarding mating systems in angiosperms using both ecological and molecular techniques
- Project was the first of its kind to use genetic markers to assess environmental conditions which supported the maintenance of separate sexes in flowering plants
- Research resulted in two internationally published scientific papers; first author on both
- Gave talks at provincial and national conferences
- Managed several undergraduate laboratory assistants

Bachelor of Science (Honours in Biology & Anthropology), Trent University **2008**

- Graduated with Dean's Honour Roll status
- Biological courses completed in genetics, evolution, and ecology

RESEARCH EXPERIENCE

Research Assistant, Dow AgroSciences/Trent University **2012**

- Collected field samples of different stages of wheat kernel development
- Performed DNA and RNA extractions
- Optimized PCR protocols for identifying candidate genes potentially responsible for varying yield parameters

Laboratory Supervisor, Trent University Plant Evolution Lab, Dr. Marcel Dorken **2008 - 2010**

- Supervised up to three undergraduate students working on separate projects
- Managed large-scale data collection
- Trained students in DNA isolation and other molecular techniques
- Responsible for maintaining laboratory equipment and ordering supplies

Research Assistant, Trent University Plant Evolution Lab, Dr. Marcel Dorken **2008**

- Responsible for large-scale experimental design, growth and maintenance of plant samples, and seed collection
- Collected and analyzed experimental data

TEACHING EXPERIENCE

Teaching Assistant, Trent University, Peterborough, Ontario

Current Issues in Biology I & II (online)

2014 – 2015

- Responsible for delivering online laboratories and assignments to first year students, many with limited-to-no experience in online learning
- Aided students via distance education in independent experimental design
- Marked and provided feedback on assignments electronically, which required proficiency in Microsoft Office products
- Answered student inquiries through email and online forums
- Tracked grades in online databases (*Blackboard Learning System* and *MasteringBiology | Pearson*)
- Proctored and graded final exam

Population Genetics (online)

2015

- Responsible for marking and providing feedback to third year students
- Answered emails and questions through online discussion forums

Current Issues in Biology I & II

2013 – 2014

- Responsible for presenting weekly laboratories, including background information and instructions, to first year students
- Supervised first year students both in the field and in the classroom.
- Taught students introductory biological skills, including microscope use, dissection, field collection, experimental design, and statistical tests
- Graded and provided feedback on assignments
- Developed communication skills through lecturing, answering email inquiries, and meeting with students one-on-one

English Teacher, Lee Sung-Sang Academy, Mokpo, South Korea

2010 – 2011

- Led lessons in conversational English and writing to multiple classes of children aged 6 – 16
- Developed and implemented daily lesson plans based on age and English comprehension level
- Designed regular writing assignments
- Completed monthly report cards and daily marking under strict timelines
- Prepared students for city-wide speaking content, in which many won gold medals

Workshop Coordinator, Trent University Promoscience Grant, Dr. Sabine McConnell

2010

- Organized and supervised one day workshops in robotics for female students in grades 5 and 6
- Purpose of the workshops was to promote robotics and computer programming to young girls, which required clear, concise language for a non-technical audience

Teaching Assistant, Trent University, Peterborough, Ontario

Evolutionary Ecology

2009 – 2010

- Gave lectures on evolutionary theory and led weekly seminars to fourth year undergraduate students
- Instructed students on how to develop experimental designs to answer research questions
- Demonstrated greenhouse methodology and statistical tests
- Marked student seminars and reports

Plants & Their Ancestors

2008 – 2009

- Led weekly discussions on the topic of plant evolution to upper year undergraduate students
- Led field trips in flora identification
- Graded student seminars and essays

Introductory Ecology

2009

- Gave instruction for labs in flora identification and marked lab reports

- Led daily educational tours about the biology and geology of the Columbia Icefield while operating an “Ice Explorer”, which is a massive vehicle designed for glacial travel
- Interacted with hundreds of international visitors on a daily basis

LABORATORY SKILLS

- RNA and DNA isolation
- cDNA synthesis
- PCR protocols and optimization
- Gene sequencing
- Electrophoresis
- Measuring sample concentration on *Nanodrop*[™] technology
- Isolation and identification of microsatellites
- Preparation of samples for genotyping on ABI (*Applied Biosystems*[™])
- Proficient in *Microsoft Office* products
- *R* statistical software

PUBLICATIONS

Perry, L.E., J.R. Pannell, and M.E. Dorken. 2012. Two’s company, three’s a crowd: Experimental evaluation of the evolutionary maintenance of trioecy in *Mercurialis annua* (Euphorbiaceae). *PLoS One*: e35597.

Perry, L.E., and M.E. Dorken. 2011. The evolution of males: Support for predictions from sex allocation theory using mating arrays of *Sagittaria latifolia* (Alismataceae). *Evolution* 65: 2782-2791.

CONFERENCES AND INVITED TALKS

Perry, L., and M. E. Dorken (2010) Males in competition: experimental evaluation of the conditions that promote the evolution of males. Canadian Society for Ecology and Evolution as Laval University, Quebec City, Quebec (Conference)

Perry, L. (2010) The evolution of males: The effect of environmental conditions on the evolution of dioecy using *Sagittaria latifolia* as a model. Biol 4610H (Invited lecture).

Perry, L., and M.E. Dorken (2009) The male advantage: Insights into the evolution of males in *Sagittaria latifolia*. Ontario Ecology and Ethology Colloquium, Queen’s University, Kingston, Ontario (Conference)

Perry, L. (2009) How do separate sexes evolve? A study into the evolution of females in *Mercurialis annua*. Biol 4610H (Invited talk).

AWARDS

NSERC Industrial Postgraduate Scholarship II	2013 – 2015
Dean Excellence Award, Trent University	2013 – 2015
Research Fellowship, Trent University	2008 – 2010
Entrance Scholarship, University of Guelph	2003

MEMBERSHIPS

Canadian Society of Agronomy	2015
Canadian Botanical Association	2015
Peterborough Curling Association	2014 – 2015
Canadian Society of Ecology and Evolution	2010 – 2012

SPECIAL COURSES AND CERTIFICATIONS

Science Safety Program, Trent University	2014
Teaching Assistance Training Workshop, Trent University	2008
Workplace Hazardous Materials Information System (WHMIS), Trent University	2008
Valid G licence	