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Citizenship: Canadian

Education

2003 - 2006 Post-Doctoral studies, Department of Genetics.
North Carolina State University. (Supervisor Dr. G. Gibson)

1997 - 2004 Doctoral studies, Department of Zoology, University of Toronto. (Supervisor Dr. E. Larsen)

1992 - 1997 Honours B.Sc. Biochemistry. Trent University.
(Supervisors Dr. C. Kapron and Dr. M. Berrill)

Publications

Dworkin, I. and Gibson, G. 2006. The EGF-R and TGF-β signal transduction pathways contribute to variation for wing shape in *Drosophila melanogaster*. Genetics. Accepted pending revisions.

Emlen, D.J. Szafran, S. Corley, L. **Dworkin, I**. 2006. Candidate genes for the development and evolution of beetle horns. Heredity. Accepted.

Dworkin, I. 2005. Towards a genetic architecture of cryptic genetic variation and genetic assimilation: The contribution of K.G. Bateman. Journal of Genetics. 84(3):223-226

Dworkin, I. 2005. A Study of Canalization and Developmental Stability in the Sternopleural Bristle System of *Drosophila melanogaster*. Evolution. 59(7): 1500-1509.

Dworkin, I. Palsson, A. Gibson, G. 2005. Replication of an *Egfr*-wing shape association in a wild-caught cohort of *Drosophila melanogaster*. Genetics 169:2115-2125.

Palsson, A. Dodgson, J. **Dworkin, I.** and Gibson, G. 2005. Tests for the replication of an association between *Egfr* and natural variation in *Drosophila melanogaster* wing morphology. BMC Genetics. 6:44(1-14).

Dworkin, I. 2005. Evidence for Canalization of *Distal-less* function in the leg of *Drosophila melanogaster*. Evolution and Development. 7(2): 89- 100

Dworkin, I. 2005. Canalization, Cryptic Variation and Developmental Buffering: A critical examination and analytical perspective. Pp.131-158 (Chapter 8) in VARIATION: A Central concept in biology. B. Hallgrimsson and B.K. Hall editors. Academic Press.

Gibson, G. and **Dworkin, I.** 2004. Uncovering Cryptic Genetic Variation. Nature Reviews Genetics. 5:681-690

Palsson, A. Rouse, A. Riley-Berger,R. **Dworkin, I**, Gibson, G. 2004. Nucleotide Variation in the *Egfr* Locus of *Drosophila melanogaster*. Genetics. 167:1999-1212.

Atallah, J*. **Dworkin, I.*** Cheung, U.* Greene, A. Ing, B. Larsen, E*. 2004. The environmental and genetic regulation of *obake* expressivity: morphogenetic fields as evolvable systems. Evolution and Development 6(2):114-22 *(co-first authors)

Dworkin, I. Palsson, A. Birdsall, K. Gibson, G. 2003. Evidence that *Egfr* contributes to cryptic genetic variation for photoreceptor determination in natural populations of *Drosophila melanogaster*. Current Biology. 13:1888-1893.

Dworkin, I. Tanda, S. Larsen, E. 2001. Are entrenched characters developmentally constrained? Creating biramous limbs in an insect. Evolution and Development. 3(6):424-31

Manuscripts in review or preparation

Dworkin, I. Jones, C.D. Complex interactions among genes involved in host specialization in *Drosophila sechellia*. In Prep.

Dworkin, I. Bobowski, N. and A. Civetta. The genetic architecture of wing shape divergence between *Drosophila sechellia* and *D. simulans*. In Prep.

Books reviewed

Developmental Instability: Causes and consequences. Quarterly Review of Biology, 78: 279

Invited talks

Dworkin, I. SNPing Away at Evolution: analyzing phenotypic variation using developmental genetics and genomics. Department of Biology, University of Rochester. February 2005.

Dworkin, I. Evolution and functional genomics of wing shape in Drosophila. Duke University. October 2004.

Dworkin, I. Quantitative developmental and evolutionary genetics of wing shape. University of North Carolina, Chapel Hill. October 2004.

Dworkin, I. Evolutionary and functional genomics of wing shape in *Drosophila melanogaster*. Symposium on insect morphometrics. International congress of entomology. Brisbane, August 2004.

Dworkin, I. Canalization and cryptic variation in *Drosophila melanogaster*. Symposium on micro-evolution and development in insect systems. International congress of entomology. Brisbane, August 2004.

Dworkin, I. SNPing away at a QTL: *Egfr* and wing shape in *Drosophila melanogaster*. Biology, The College of William and Mary. February 2004.

Dworkin, I. Variation, Canalization and Asymmetry: simplifying Waddington's legacy. Biology, Duke University. October 2002.

Dworkin, I. When is it a good time to decide? Exploring sensitive periods during development. Devo-lunch series, Department of Zoology, University of Toronto. April 2002.

Dworkin, I. Variation, Canalization and Asymmetry: Exploring Waddington's legacy. Trent University. April, 2002.

Dworkin, I. Variation, Canalization and Asymmetry: Exploring Waddington's legacy. Evo-Lunch series, Department of Zoology, University of Toronto. January, 2002.

Conference Presentations

Dworkin, I. Gibson, G. Using mutations to explore wing shape, allometry and developmental buffering in *Drosophila*. 4th meeting for the Developmental Basis of Evolutionary change. Chicago, October 2005.

Dworkin, I. Gibson, G. Evolutionary and functional genomics of wing shape in *Drosophila melanogaster*. 47th meeting of the Genetics Society of Canada. Toronto, June 2004.

Dworkin, I. Canalization and cryptic variation in *Drosophila melanogaster*. Genetics 47th meeting of the Society of Canada. Toronto, June 2004.

Dworkin, I. Palsson, A. and Gibson, G. Candidate Genes, Associations and replication: Do these variants matter in nature? 45th annual Drosophila research Conference, Washington, D.C. March 2004.

Dworkin, I. Palsson, A. Birdsall, K. Gibson, G. A Transmission Disequilibrium test for *Epidermal growth factor receptor* and variation in photoreceptor determination. 44th annual Drosophila research conference, Chicago, Illinois March 2003.

Dworkin, I. Variation, Canalization, and Asymmetry: Exploring Waddington's legacy. Society for integrative and Comparative Biology, Toronto, January 2003. (Published abstract).

Dworkin, I. Variation, Canalization, and Asymmetry: Exploring Waddington's legacy. Society for the Study of Evolution. Champagne-Urbana, Illinois, June 2002.

Dworkin, I. When is an antennae really a leg? 6th. Canadian Drosophila research conference. Canmore, Alberta. May 2001.

Dworkin, I. Larsen, E. Interactions between *homothorax* and *Antennapedia* in the antenna of *Drosophila melanogaster*. Society for integrative and comparative biology. Chicago, January 2001. (Published abstract).

Dworkin, I. Temporal dynamics of *homothorax* and *Antennapedia* interactions in the antennae of *Drosophila melanogaster*. Developmental biology retreat, University of Toronto program in developmental biology. Toronto. June 2000.

Dworkin, I. Evo-Devo approaches: alternatives to gene expression patterns. 5th Canadian Drosophila research conference. St-Sauveur, Quebec. June 1999.

Larsen, E. Dworkin, I. et al. Designer organisms: A constructionist approach to development. 40th Annual Drosophila research conference. Seattle. March 1999.

Scholarships, fellowships and other awards received

2005-2007 National Science and Engineering Research Council (Canada), Postdoctoral Fellowship. $80,000.

2003 Best student paper, Division of evolutionary-developmental biology, Society for integrative and comparative biology.

2001-02 Frederick P. Ide Graduate Award,
Department of Zoology, University of Toronto $1,500

2001-02 Ontario Graduate Scholarship $15000

2001-02 University of Toronto Fellowship $5,600

2000 (August) NSF Fellowship to attend workshop
"Evolvability of developmental mechanisms",
University of Washington $1300

2000-01 University of Toronto Top-Up Award $2,000

1999-2001 National Science and Engineering Research Council, postgraduate scholarship B. $36000

1999 (May-June) NIH Fellowship to attend "summer institute in statistical genetics", North Carolina State University $1400.

1999-00 University of Toronto Top-Up Award $2,500

1999-2000 Ontario Graduate scholarship (not accepted), ($11859).

1998-99 University of Toronto Fellowship $3,600

1997-98 L. Butler Graduate Prize in Zoology, Department of Zoology, University of Toronto $3,876.33

1997-98 University of Toronto Fellowship $3,600

Teaching Experience

Lecturer: Human Genome Project: Hope or Hype (with Dr. G. Gibson and Dr. L. Goering). Encore "lifelong learning". North Carolina State University. Spring 2005.

Lecturer: Gn495 – Introduction to Genomic science (with Dr. G. Gibson and Dr. L. Goering). Department of Genetics, North Carolina State University. Spring 2004

Teaching Assistant : BIO370H1- Mathematical Modeling Techniques in the Life Sciences, University of Toronto (Dr. P. Abrams and Dr. T. Day, supervisors). Fall 2001

Teaching Assistant: JMB170Y1 - Biology, Models, and Mathematics, University of Toronto (Dr.J. Repka and Dr. J. Rising supervisors). Spring 2001.

Teaching Assistant: ZOO328H1 - Developmental Biology, University of Toronto (Dr E. Larsen supervisor). Fall 2000.

Teaching Assistant: ZOO328H1 - Developmental Biology, University of Toronto (Dr. R. Elinson supervisor). Fall 1999.

Teaching Assistant: BIO150Y1 -Organisms in their Environment, University of Toronto (C. Goldman, supervisor). 1998.

Teaching Assistant: ZOO328H1 - Developmental Biology, University of Toronto (Dr. R. Elinson supervisor). Fall 1997.

Teaching Assistant: BIO250Y1 - Cell and Molecular Biology, University of Toronto (Anne Cordon supervisor). 1997-98.

Teaching Assistant: Population Genetics, Trent University
(Dr. M. Bidochka, supervisor). Spring 1997.

Teaching Assistant: Bio204b – Cell Biology, Trent University
(Dr. C. Kapron, supervisor). Spring 1997.

Teaching Assistant: Bio360a- Macro-Evolution, Trent University
(Dr. M. Berrill, supervisor). Fall 1996.

Teaching Assistant: Bio203a- Molecular Biology, Trent University
(Dr. C. Kapron, supervisor). Fall 1996.

Mentoring of undergraduate honours projects
2001-2002 Olivia Luu, Honours project
1999-2000 Fiona McCloskey, Honours project
1999-2000 Wendy Lee, Honours project

Other teaching experience

Participated as "guest expert" for honours undergraduate seminars in developmental biology. University of Toronto. 2001-02.

Designed a tutorial for critical reading of scientific papers for the course developmental biology, Zoo328. University of Toronto. 2001.

Guest lecturer for undergraduate course in evolutionary biology,
University of Toronto. 1999.

Guest lecturer, Macro-Evolution, Trent University. 1998.

Manuscript referee
-Genetics
-Genetical Research
-Genome
-Evolution
-Evolution and development
-Journal of biosciences
-Journal of Experimental Zoology, part B.