



CURRICULUM VITAE — DAVID P. L. TOEWS

NSERC Banting Postdoctoral Fellow
Department of Ecology and Evolutionary Biology
and Cornell Lab of Ornithology
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EDUCATION AND APPOINTMENTS

09.2014 – present	Postdoc — Cornell University	mentored by Dr. Irby Lovette
01.2009 – 05.2014	PhD. — University of British Columbia	mentored by Dr. Darren Irwin
09.2005 – 09.2007	MSc. — University of British Columbia	mentored by Dr. Darren Irwin
09.2001 – 06.2005	BSc. H. — Acadia University	mentored by Dr. Tom Herman

PUBLICATIONS (PUBLISHED OR IN PRESS)

(Google Scholar Profile: <https://goo.gl/MLTYFZ>)

- [31] Cozzarolo C.-S., Jenkins T., **Toews D. P. L.**, Brelsford A., and P. Christe (2018). Prevalence and diversity of haemosporidian parasites in the yellow-rumped warbler hybrid zone. *Ecology and Evolution*, *in press*.
- [30] Irwin D. E., Milá B., **Toews D. P. L.**, Brelsford A., Kenyon H. L., Porter A. N., Gossen C., Delmore K. E., Alcaide M., and J. H. Irwin (2018) Genomic differentiation and speciation: a comparison of three young avian species pairs. *Molecular Ecology*, *in press*.
- [29] **Toews D. P. L.***, Lovette I. J., Irwin D. E., and A. Brelsford* (2018). Similar hybrid composition among different age and sex classes in the myrtle-Audubon's warbler hybrid zone. *The Auk: Ornithological Advances*, *in press*.
- [28] Brelsford A.*, **Toews D. P. L.***, D. E. Irwin (2017). Admixture mapping in a hybrid zone reveals loci for avian feather coloration. *Proceedings of the Royal Society: Biological Sciences*, 284: 20171106.
- [27] **Toews D. P. L.**, Heavyside J.[†], and D. E. Irwin (2017). Linking the wintering and breeding grounds of warblers along the Pacific Flyway. *Ecology and Evolution*, 7: 6649–6658.
- [26] **Toews D. P. L.**, Delmore K. E., Osmond M. M., Taylor P. D., D. E. Irwin (2017). Migratory orientation in a narrow avian hybrid zone. *PeerJ*, 5: e3201.
- [25] **Toews D. P. L.** (2017). Habitat suitability and the constraints of migration in New World warblers. *Journal of Avian Biology*, 48: 1614-1623.
- [24] **Toews D. P. L.***, Hofmeister N.*, and S. A. Taylor (2017). The evolution and genetics of carotenoid processing in animals. *Trends in Genetics*, 33: 171-182.
- [23] Kenyon H., Alcaide M., **Toews D. P. L.**, and D. E. Irwin (2017). Cultural isolation is greater than genetic isolation across an avian hybrid zone. *Journal of Evolutionary Biology*, 30: 81-95.
- [22] **Toews D. P. L.***, Taylor S. A.*, Vallender R., Brelsford A., Butcher B. G., Messer P. W., and I. J. Lovette (2016). Plumage genes and little else distinguish the genomes of hybridizing warblers. *Current Biology* 26, 2313-2318.
- [21] **Toews D. P. L.**, Brelsford A., Gossen C., Mila B., and D. E. Irwin (2016). Genomic variation across the yellow-rumped warbler species complex. *The Auk: Ornithological Advances* 133, 698-717.
- [20] Delmore K. E., **Toews D. P. L.**, Germain R. R., Owens G. L., and D. E. Irwin (2016). The genetics of seasonal migration and plumage colour. *Current Biology* 26, 2167-2173.
- [19] **Toews D. P. L.***, Campagna L.*, Taylor S. A.*, Balakrishnan C. N., Baldassarre D. T., Deane-Coe P. E., Harvey M. G., Hooper D. M., Irwin D. E., Judy C. D., Mason N. A.,

- McCormack J. E., McCracken K. G., Oliveros C. H., Safran R. J., Scordato E., Stryjewski K. F., Tigano A., Uy A. J., and B. Winger (2016). Genomic approaches to understanding population divergence and speciation in birds. *The Auk: Ornithological Advances* 133: 13-30.
- [18] Regan M., Dhillon R., **Toews D. P. L.**, Speers-Roesch B., Sackville M., Pinto S., Bystriansky J., and G. R. Scott (2015). Biochemical correlates of aggressive behaviour in the Siamese fighting fish. *Journal of Zoology*, 297: 99-107.
- [17] Khadraoui, M.*[†] and **D. P. L. Toews*** (2015). The influence of environmental cues and anthropogenic activity on roost departure times in the Northwestern Crow (*Corvus caurinus*). *The Wilson Journal of Ornithology*, 127: 127(4):739-746.
- [16] **Toews D. P. L.**, Brelsford A., and D. E. Irwin (2014) Isotopic variation across the Audubon's-myrtle warbler hybrid zone. *Journal of Evolutionary Biology* 27: 1179-1191.
- [15] **Toews D. P. L.**, Mandic M., Richards J. G., and D. E. Irwin (2014). Migration, mitochondria and the yellow-rumped warbler. *Evolution* 68: 241-255.
- [14] Ilieva M., **Toews D. P. L.**, Bensch S., Sjöholm C. and S. Åkesson (2012). Autumn migratory orientation and displacement responses of two willow warbler subspecies (*Phylloscopus trochilus trochilus* and *P. t. acredula*) in South Sweden. *Behavioural Processes* 91: 253-261.
- [13] **Toews D. P. L.** and A. Brelsford (2012). The biogeography of mitochondrial and nuclear discordance in animals. *Molecular Ecology* 16: 3907-3930.
- [12] Seneviratne S., **Toews D. P. L.**, Brelsford A. and D. E. Irwin (2012). Concordance of genetic and phenotypic characters across a sapsucker hybrid zone. *Journal of Avian Biology* 43: 119–130.
- [11] Safran, R., Flazman S., Kopp M., Irwin D. E., Briggs D., Evans M. R., Funk C., Gray D. A., Hebet E. A., Seddon N., Scordato E., Symes L. B., Tobias J. A., **Toews D. P. L.** and J. A. C. Uy (2012). A robust new metric of phenotypic distance to estimate and compare multiple trait differences among populations. *Current Zoology* 58: 426–439.
- [10] **Toews D. P. L.**, Brelsford A. and D. E. Irwin (2011). Hybridization between Townsend's and black-throated green warblers in an avian suture zone. *Journal of Avian Biology* 42: 434-446.
- [9] Kenyon H. L.*[†], **Toews D. P. L.*** and D. E. Irwin (2011). Can song discriminate between MacGillivray's and mourning warblers in a narrow hybrid zone? *The Condor* 113: 655-663.
- [8] Milá B., **Toews D. P. L.**, Smith T. B. and R. K. Wayne (2011). A cryptic contact zone between divergent mtDNA lineages in southwestern North America supports past introgressive hybridization in the yellow-rumped warbler complex (Aves: *Dendroica coronata*). *Biological Journal of the Linnean Society* 103: 696-706.
- [7] Irwin D.E., Brelsford A., **Toews D.P.L.**, MacDonald C.[†] and M. Phinney (2009). Extensive hybridization in a contact zone between MacGillivray's and mourning warblers (*Oporornis tolmiei* and *O. philadelphia*) detected using molecular and morphometric analyses. *Journal of Avian Biology* 40: 539-552.
- [6] **Toews D.P.L.*** and D. E. Irwin* (2008). Cryptic speciation in a holarctic passerine revealed by genetic and bioacoustic analyses. *Molecular Ecology* 17: 2691-2705.
- * shared authorship, [†] undergraduate author

PUBLICATIONS (PERSPECTIVES AND BOOK CHAPTERS)

- [5] **Toews D. P. L.**, Walsh J., and L. Campagna (2018). Population Genomics of Birds: Evolutionary History and Conservation *in* Population Genomics: Wildlife. Springer, *Editors:* Paul Hohenlohe and Om P. Rajora.

- [4] **Toews D. P. L.** (2017). From song dialects to speciation in white-crowned sparrows. *Molecular Ecology*, 26: 2842-2844.
- [3] **Toews, D. P. L.** (2015) Evolution: A genomic guide to bird population history. *Current Biology*, 25: R448-469.
- [2] **Toews D. P. L.** (2015). Biological species and taxonomic species: will a new null hypothesis help? (a comment on Gill 2014). *The Auk: Ornithological Advances* 132: 78-81.
- [1] **Toews D. P. L.** and Irwin D. E. (2012). Pacific Wren (*Troglodytes pacificus*) In *The Birds of North America* (A. Poole, Ed.). *Cornell Lab of Ornithology*.

PUBLICATIONS (IN REVIEW OR REVISION)

Kang-Wook K., Jackson B. C., Zhang H., **Toews D. P. L.**, Taylor S. A., Greig E. I., Lovette I. J., Liu M. M., Davison A., Griffith S. C., Zeng K., and T. Burke. Black or red: A sex-linked colour polymorphism in a songbird is maintained by balancing selection. *In revision*.

AWARDS

09.2016 – present	\$140,000 — Banting Postdoctoral Fellowship (Ranked 6 of 223), <i>NSERC</i>
09.2014 – 08.2016	\$90,000 — Postdoctoral Fellowship, <i>NSERC</i>
05.2016	Paper of the Year — <i>Journal of Zoology</i>
2015.08 & 2017.08	\$550 — Postdoctoral Travel Award, <i>American Ornithologists' Union</i>
01.2013 – 12.2014	\$11,000 — Zoology Graduate Fellowship, <i>UBC</i>
09.2013	\$500 — Biology Graduate Student Teaching Award, <i>UBC</i>
12.2012	Presentation Award — <i>UBC/SFU/UVic Eco/Evo Retreat</i>
08.2012	\$200 — Student Presentation Award, <i>Society of Canadian Ornithologists</i>
01.2009 – 12.2012	\$36,000 — Four-Year Fellowship, <i>UBC</i>
08.2011 – 08.2012	\$20,000 — Werner and Hildegard Hesse Fellowship in Ornithology, <i>UBC</i>
08.2010 – 11.2010	\$6000 — Michal Smith Foreign Study Supplement, <i>NSERC</i>
05.2009 – 05.2011	\$70,000 — Alexander Graham Bell Canadian Graduate Scholarship (Doctoral), <i>NSERC</i>
05.2009 – 08.2009	\$800, McLean Fraser Summer Research Fellowship, <i>UBC</i>
09.2005 – 09.2007	\$35,000 — Canadian Graduate Scholarship (Master's), <i>NSERC</i>
05.2007	\$500 — Bill Hoar Award - Best Student Presentation, <i>Canadian Society of Zoologists</i>
05.2006	\$500 — Helen Battle Award - Best Student Poster, <i>Canadian Society of Zoologists</i>
05.2004 – 08.2004	\$4,000 — Undergraduate Summer Research Award, <i>NSERC</i>
09.2003 – 05.2004	\$160, Dr. Hicks Scholarship in Biology, <i>Acadia University</i>
09.2001 – 05.2002	\$1500 — Taylor McLellan Law Entrance Scholarship, <i>Acadia University</i>

GRANTS

2014 – 2014	\$16,000 — Dunlin Genomics, <i>HEMMERA Environmental Consulting</i>
2013	\$2,000 — Taverner Research Award, <i>Society of Canadian Ornithologists</i>
2011 – 2012	\$12,000 — Grants in Biodiversity, <i>Alberta Conservation Association</i>
2011	\$2,000 — Hesse Research Award in Ornithology, <i>UBC</i>
2010	\$4,700 — Young Explorers Grant, <i>National Geographic Society</i>
2010	\$500 — Student Choice Research Grant, <i>Canadian Society of Zoologists</i>

CONFERENCES AND INVITED PRESENTATIONS

03.2018	Harvard Museum of Comparative Zoology	(Oral pres.*, Cambridge, MA)
01.2018	Cornell University Dept. of Ecol. and Evol. Bio.	(Oral pres.*, Ithaca, NY)
08.2017	American Ornithological Society	(Oral pres., East Lansing, MI)
06.2017	Invited Symposium - Society for Study of Evolution	(Oral pres.*, Portland, OR)

06.2017	Society for Study of Evolution	(Oral pres., Portland, OR)
03.2017	Trent University Forensic Science & Environmental Life Sciences — Departmental	(Oral pres. *, Peterborough)
03.2017	Massachusetts Audubon	(Keynote*, Boston)
02.2017	Gordon Speciation Conference & Seminar	(Poster*, Lucca, Italy)
10.2016	Smithsonian Migratory Bird Center	(Oral pres. *, Washington DC)
08.2016	North America Ornithological Conference	(Oral pres., Washington DC)
11.2015	Laval University — Departmental Seminar	(Oral pres. *, Quebec City)
08.2015	American Ornithologists' Union — Early Professionals Symposium	(Oral pres. *, Norman)
08.2015	American Ornithologists' Union	(Oral pres., Norman)
02.2015	Society for Study of Evolution	(Oral pres., São Paulo)
02.2015	DePaul University "Darwin Day" Keynote Speaker	(Oral pres. *, Chicago)
09.2014	American Ornithologists' Union	(Oral pres. *, Estes Park)
05.2014	Canadian Society of Ecology and Evolution	(Oral pres., Montreal)
11.2012	UBC/SFU/UVic Eco/Evo Retreat	(Oral pres. †, Vancouver)
08.2012	North America Ornithological Conference	(Oral pres. †, Vancouver)
05.2012	Joint Congress on Evolutionary Biology	(Poster, Ottawa)
10.2011	Canadian Migration Monitoring Meeting	(Keynote*, Naramata)
05.2011	Canadian Society of Ecology and Evolution	(Oral pres., Banff)
09.2010	Centre for Animal Movement Research	(Oral pres. *, Lund, Sweden)
08.2009	American Ornithologists' Union	(Oral pres., Philadelphia)
04.2009	Partners in Flight — Western Working Group	(Oral pres. *, Penticton)
09.2008	Canadian Wildlife Service	(Oral pres. *, Vancouver)
05.2008	Keith Porter Memorial Seminar	(Oral pres. *, Wolfville)
05.2007	Canadian Society of Zoologists	(Oral pres. †, Montreal)
05.2006	Canadian Society of Zoologists	(Poster †, Edmonton)

*Invited presentation, † talk or poster award

ACADEMIC REVIEWER (65 manuscripts as of 03/2018)

Proceedings of the National Academy of Sciences, Nature Communications, Nature Ecology & Evolution, Current Biology, Genome Research, Proceedings of the Royal Society B, Trends in Ecology and Evolution, Evolution, Ecology Letters, Biology Letters, Molecular Ecology (*identified as a 'top reviewer' in 2012*), Animal Behaviour, Ecology and Evolution, Molecular Phylogenetics and Evolution, The Auk: Ornithological Advances, Journal of Biogeography, Heredity, Behavioral Ecology, Journal of Avian Biology, Evolutionary Applications, Molecular Ecology Resources, Axios Review, European Journal of Wildlife Research, BMC Genetics, BMC Evolutionary Biology, BMC Zoology, PLoS ONE, Oecologia, Biological Journal of the Linnaean Society, Condor: Ornithological Applications, Canadian Journal of Zoology, Oikos, American Midland Naturalist, Avian Conservation and Ecology, Journal of Ornithology, Wilson Journal of Ornithology, PeerJ.

TEACHING EXPERIENCE — INSTRUCTOR OF RECORD

2015 – pres.	Current Topics in Non-Model Genomics (six semesters)	(Cornell)
2017	Ecology and Conservation of Wildlife in the Neotropics	(Cornell)
2016 & 2017	An Introduction to the World of Birds (Continuing Ed.)	(Cornell)
2016	Freshman Writing Seminar	(Cornell)
2014	Methods in Ecology / Ecosystems of California	(UBC)

TEACHING EXPERIENCE — INVITED LECTURES

2017	Writing-in-the-Majors (x2)	(Cornell)
2010	Ornithology and Herpetology (x2)	(UBC)

2009	Mammalogy	(UBC)
2009	Conservation Biology (x2)	(SFU)
2009	Introduction to Human Geography	(Langara)
2007	Coastal Biodiversity and Conservation	(UBC)

TEACHING EXPERIENCE — ASSISTANT

2014	Evolutionary Ecology	(UBC)
2013	Ornithology	(UBC)
2013	Integrated Arts and Sciences	(UBC)
2012 (fall)	Ornithology	(UBC)
2012 (spring)	Ornithology	(UBC)
2007	Conservation Biology	(UBC)
2006	Parasitology	(UBC)
2005 – 2006	Animal Physiology	(UBC)
2005	Animal Behaviour	(Acadia)
2004	Genetics	(Acadia)
2002 – 2004	Introductory Biology	(Acadia)

UNDERGRADUATE MENTORSHIP

2017	Matthew Sison	(Cornell)
2017	Nina Knight	(Cornell)
2016	Julian Heavyside [†]	(UBC)
2014	Mehdi Khadraoui [†]	(UBC)
2014	Michelle Chen	(UBC)
2010	Haley Kenyon [†]	(UBC)
2007	Jenny Doung	(UBC)
2007	Christie MacDonald [†]	(UBC)

[†] with resulting publications

COMMUNITY SERVICE

2016 & 2017	NSF Full Proposal Reviewer — Division of Environmental Biology
2015 & 2017	Research Proposal Judge — Sigma Xi, Cornell University
2015 & 2017	Oral Presentation Judge — American Ornithological Society
2016	Editorial Board — Axios Review
2016	Oral Presentation Judge — North American Ornithological Conference
2016 & 2017	Volunteer — “Expanding Your Horizons”, workshop for 7th–9th grade girls, Cornell University
2016	Grant Reviewer — Joseph Grinnell Research Awards, U.S. Forest Service
2015	External Examiner — MSc. Defense of Nathalie LeBlanc, Acadia University
2014	Poster Presentation Judge — Canadian Society for Ecology and Evolution
2014	Examination Committee — Honors Defense of Michelle Chen, UBC
2013	Graduate Student Representative, Zoology Head Search Committee, UBC
2012	Local Organizing Committee — North American Ornithological Conference, UBC
2011 – 2012	Co-leader — Zoology Mentorship Program, UBC
2009 – 2010	Creator and Leader — “The Evolution of Song” Program, UBC and Metro Parks
2006 – 2007	President — Zoology Graduate Students Association, UBC

OTHER PROFESSIONAL CONTRIBUTIONS

2018 – pres.	Committee on the Status of Endangered Wildlife in Canada (COSEWIC), Birds Specialist Subcommittee (Environment Canada) – reviewing and evaluating species status assessments
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- 2017 – pres. ORIGIN (Origin Inference from Geospatial Isotope Networks) Working Group — helping develop tools for researchers utilizing stable isotopes for geographic assignment of animal tissues
- 2012 – 2014 Biologist/Analyst (HEMMERA Environmental Consulting)
- 2008 – 2009 Species at Risk Recovery Planner (BI-02 Environment Canada – CWS)
- 2007 Graduate Research Technician (UBC)

PROFESSIONAL SOCIETIES

Society for the Study of Evolution, American Association for the Advancement of Science, American Ornithological Society.