

David N. Awde

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Education

PhD (Biology - Ecology and Evolution) Brock University, Canada Thesis: Proximate influences on eusocial caste behaviour Supervisors: Dr. Miriam H. Richards and Dr. Adonis Skandalis	2019
BSc Honours Specialization (Biology – Ecology and Evolution) University of Western Ontario, Canada Thesis: A pheromonal test of reproductive homology in the fly vs. bee Supervisor: Dr. Graham J. Thompson	2012

Professional Experience

2019-Present	Postdoctoral Scholar Supervisor: Dr. Nicholas M. Teets Department of Entomology, University of Kentucky, USA
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Awards

2019	Distinguished Graduate Student Award – Brock University	\$100
2015-2018	NSERC Postgraduate Scholarship (Doctoral)	\$63 000
2017	Brock University Graduate Students' Association Bursary	\$300
2016	Ontario Entomological Society AGM, Honourable mention - Oral presentation	
2015	Ontario Paper, Thorold Foundation, Graduate Award	\$2 132
2014	Canadian Society for Ecology and Evolution Travel Award	\$500
2013	Department of Graduate Studies Spring Fellowship	\$3 000
2012	Dean of Graduate Studies Entrance Scholarship	\$2 000
2012	Best oral presentation Western Biology Department Presentation Day	
2007	Western University Admission Bursary	\$500

Publications

Google Scholar Profile: <https://scholar.google.com/citations?user=L4kSIEwAAAAJ&hl=en&oi=ao>

In prep

Awde, D.N., Skandalis, A., and Richards, M.H. (2021) *Foraging* gene expression correlates with seasonal differences in foraging behaviour of a eusocial sweat bee. *In prep*

Published

Awde, D.N., Skandalis, A., and Richards, M.H. (2020) *Vitellogenin* expression corresponds with reproductive status and caste in a primitively eusocial bee. *Journal of Insect Physiology*, doi: <https://doi.org/10.1016/j.jinsphys.2020.104113>

Lecheta, M.C., **Awde, D.N.**, O'leary, T., Unfried, L.N., Jacobs, N.A., Whitlock, M.H., McCabe, E., Powers, B., Bora, K., Waters, J.S., Axen, H.J., Fietze, S., Lockwood, B.L., Teets, N.M., Helms-Cahan, S. (2020) Integrating GWAS and transcriptomics to identify the molecular underpinnings of thermal stress responses in *Drosophila melanogaster*. *Frontiers in Genetics* 11, 658, doi:10.3389/fgene.2020.00658

Awde, D.N., Fowler, T.E., Pérez-Gálvez, F., Garcia, M.J., and Teets, N.M. (2020) High throughput assays of critical thermal limits in insects. *Journal of Visualized Experiments* 160, e61186, doi:10.3791/61186

Awde, D.N. and Richards, M.H. (2018) Investigating queen influence on worker behaviour using comparisons of queenless and queenright workers. *Insectes Sociaux* 65 (3), 367-379, <https://doi.org/10.1007/s00040-018-0619-6>

Camiletti, A.L., **Awde, D.N.**, and Thompson, G.J. (2014) How flies respond to honeybee pheromone: the role of the *foraging* gene on the reproductive response to queen mandibular pheromone. *Naturwissenschaften*. 101, 25-31, doi:10.1007/s00114-013-1125-3

Teaching and Mentorship Experience

Course Instructor

2020 *Insect Biology*,
First year undergraduate course, University of Kentucky, USA

2018 *Genes and Behaviour*,
Fourth year undergraduate course, Brock University, Canada

Teaching Assistant

2014, '15, '17, '18 *Animal Behaviour*, Brock University (Instructors: Dr. Tattersall and Dr. Richards)
2014, '15, '17 *Ecology*, Brock University (Instructors: Dr. Szuroczki and Dr. Vasseur)

2012, '13, '16	<i>Molecular Ecology</i> , Brock University (Instructors: Dr. Vickruck and Dr. Richards)
2014	<i>Human Physiology</i> , Brock University (Instructor: Dr. Lukewich)
2013	<i>Evolution</i> , Brock University (Instructors: Dr. Bidochka and Dr. Skandalis)

Student Mentorship and Co-Supervision

2020 – current	Goldie Blackson (Undergraduate research student)
2019	Tatum Fowler (High school biotech research intern)
2016 – 2017	Raadhiyah Zowmi (NSERC-USRA Summer student)
2016	Sama Hettige (High school mentorship student)
2014 – 2016	Andrea Cardama (NSERC-USRA Summer student / Undergraduate thesis student)
2014	Nick Orrego (High school mentorship student)

Presentations

Invited Talks

Awde, D.N. Proximate influences on caste phenotypes of a eusocial sweat bee, *Lasioglossum laevisimum*. University of Kentucky Entomology Departmental Seminar. Lexington, KY, USA. 2019.

Awde, D.N. Bees for newbies. The Niagara Retirees Association monthly luncheon. Niagara on the Lake, ON, Canada. 2017.

Awde, D.N. Bees for newbies. Landcare Niagara monthly meeting. Vineland, ON, Canada. 2014.

Guest Lectures

Awde, D.N. Phenotypic traits and gene expression in sweat bee castes. Principles Zoology (3th year). Brock University, 2017.

Awde, D.N. *Vitellogenin* and reproduction in insects. Genes and Behaviour (4th year). Brock University, 2017.

Awde, D.N. *Foraging* gene expression in insects Animal Behaviour (3rd year). Brock University, 2016.

Awde, D.N. *Foraging* gene expression in honeybees, ants, and aphids. Molecular Ecology (3rd year). Brock University, 2016.

Awde, D.N. Developing molecular markers for molecular ecology. Molecular Ecology (3rd year). Brock University, 2016.

Awde, D.N. *Vitellogenin* and *foraging* gene expression in sweat bees. Animal Behaviour (3rd year). Brock University, 2015.

Awde, D.N. *Foraging* gene expression insects. Animal Behaviour (3rd year). Brock University, 2015.

Awde, D.N. Gene expression patterns in eusocial sweat bees using qRT-PCR. Genes and Behaviour (4th year). Brock University, 2014.

Conference Presentations

Awde, D.N., and Teets, N.M. 2021. Genetic variation in phenotypic plasticity of thermal limits in *Drosophila melanogaster*. Society for Integrative and Comparative Biology, Virtual (Oral presentation)

Perez-Galvez, F., **Awde, D.N.**, McCabe, E., and Teets, N.M. 2021. Computer assisted analysis to improve throughput and precision of knockdown time assays. Society for Integrative and Comparative Biology, Virtual (Oral presentation)

Perez-Galvez, F., **Awde, D.N.**, and Teets, N.M. 2020. Computer assisted analysis to improve throughput of knockdown time assays. Entomological Society of America, Virtual (Poster presentation)

Awde, D.N., Lecheta, M.C., Unfried, L.N., Jacobs, N.A., Whitlock, M.H., Powers, B., Bora, K., Waters, J.S., Axen, H.J., Fietze, S.E., Lockwood, B.L., Helms Cahan, S., Teets, N.M. 2020. Genetic mechanisms of basal thermal tolerance in *Drosophila melanogaster*. Society for Integrative and Comparative Biology, Austin, TX, USA (Oral presentation)

Awde, D.N., Skandalis A. and Richards, M.H. 2019. Proximate influences on eusocial caste behaviour. Entomological Society of America, St. Louis, MO, USA (Oral presentation)

Teets, N.M., Lecheta, M.C. and **Awde, D.N.** 2019. Genetic architecture of thermal tolerance in *Drosophila melanogaster*. Entomology Society of America Annual General Meeting, St. Louis, MO, USA (Oral presentation; NM Teets presenting author)

Awde, D.N., Skandalis A. and Richards, M.H. 2018. Environmental and genetic influences on caste behaviour of a eusocial sweat bee, *Lasioglossum laevisimum*. Southern Ontario Bee Researchers Symposium, Toronto, ON, Canada (Oral presentation)

Awde, D.N., Skandalis A. and Richards, M.H. 2017. Gene expression and phenotypic variation of a sweat bee sheds light on social caste evolution. Animal Behavior Society, Toronto, ON, Canada (Poster Presentation)

Awde, D.N., and Richards, M.H. 2017. How did egg-laying and work behaviours decouple from solitary ancestors to eusocial castes? Canadian Society for Ecology and Evolution, Victoria, BC, Canada (Oral presentation)

Awde, D.N., and Richards, M.H. 2017. Investigating queen influence on worker behaviour: comparisons of queenless and queenright workers. Ontario Entomological Society, Guelph, ON, Canada (Oral presentation)

Awde, D.N., Skandalis A. and Richards, M.H. 2017. *Foraging* expression in castes of a primitively eusocial sweat bee. Southern Ontario Bee Researchers Symposium, Toronto, ON, Canada (Oral presentation)

Awde, D.N., Skandalis, A. and Richards, M.H. 2016. Phenotype and gene expression variation in castes of a primitively eusocial sweat bee. Ontario Entomological Society, Sault Ste. Marie, ON, Canada (Oral presentation)

- Awde, D.N.** 2016. Ovarian development and *vitellogenin* gene expression in a eusocial sweat bee, *Lasioglossum laevissimum*. Southern Ontario Bee Researchers Symposium, Toronto, ON, Canada (Oral presentation)
- Awde, D.N.,** and Richards, M.H. 2016. Queen-sized workers or worker-sized queens? Ontario Ecology, Ethology and Evolution Colloquium, Toronto, ON, Canada (Oral presentation)
- Awde, D.N.,** Skandalis, A. and Richards, M.H. 2015. *Vitellogenin* alternative splicing in a primitively eusocial sweat bee. Biology and Genomics of Social Insects, Cold Spring Harbour Laboratory, NY, USA (Poster presentation)
- Awde, D.N.,** and Richards, M.H. 2015. Geographic variation in social organization in sweat bees. Southern Ontario Bee Researchers Symposium, Toronto, ON, Canada (Oral presentation)
- Awde, D.N.,** Skandalis, A. and Richards, M.H. 2015. *Vitellogenin* alternative splicing in a eusocial sweat bee. Ontario Ecology, Ethology and Evolution Colloquium, Toronto, ON, Canada (Oral presentation)
- Awde, D.N.,** Skandalis, A. and Richards, M.H. 2014. *Foraging* and *Vitellogenin* gene expression patterns in eusocial sweat bees using RT-qPCR. International Union for the Study of Social Insects, Cairns, Australia (Oral presentation; MH Richards presenting author)
- Awde, D.N.,** Skandalis, A. and Richards, M.H. 2014. *Foraging* and *Vitellogenin* gene expression patterns in eusocial sweat bees using RT-qPCR. Canadian Society for Ecology and Evolution, Montreal, QC, Canada (Oral presentation)
- Awde, D.N.,** Skandalis, A. and Richards, M.H. 2014. *Foraging* and *Vitellogenin* gene expression patterns in eusocial sweat bees using RT-qPCR. Ontario Ecology, Ethology and Evolution Colloquium, Guelph, ON, Canada (Oral presentation)
- Awde, D.N.,** and Richards, M.H. 2014. Colony structure and provisioning phenology of a weakly eusocial sweat bee in St. Catharines, Ontario. Ontario Entomological Society Annual Meeting, Toronto, ON, Canada (Oral presentation)
- Awde, D.N.,** Skandalis, A. and Richards, M.H. 2014. *Foraging* and *Vitellogenin* gene expression patterns in eusocial sweat bees using RT-qPCR. Southern Ontario Bee Researchers Symposium, Toronto, ON, Canada (Oral presentation)
- Awde, D.N.** 2013. From solitary to eusocial: The ovarian ground plan hypothesis in the primitively eusocial sweat bee, *Lasioglossum laevissimum*. Ontario Ecology, Ethology and Evolution Colloquium, London, ON, Canada (Oral presentation)
- Awde, D.N.** 2012. From solitary to eusocial: Testing the ovarian ground plan hypothesis in the primitively eusocial sweat bee *Lasioglossum laevissimum*. Southern Ontario Bee Researchers Symposium, Toronto, ON, Canada (Oral presentation)

Service and Outreach

Outreach

- 2020-2021 Writing group organizer and leader – Department of Entomology, University of Kentucky (Lexington, KY)
- 2020-2021 Executive committee member with the Society of Postdoctoral scholars (SOPS) at the University of Kentucky (Lexington, KY)
- 2020 Insects in The Cold – Organized and led lab demonstrations for high school students (Lafayette High School, Lexington, KY)
- 2019 Student Competition Judge – Oral paper presentations at the ESA AGM (ESA, 2019 St. Louis, MO)
- 2015 Ecology Project Leader, Scientifically Yours – STEM program for high school students (Brock University, St. Catharines, ON)
- 2013 Better with Bees Exhibit - Taught bee identification and bee ecology to the general public (Balls Falls Conservation Area, Vineland, ON)

Professional Memberships

Entomological Society of Ontario	2012-2018
Canadian Society for Ecology and Evolution	2012-2019
Animal Behavior Society	2017-2019
Entomological Society of America	2019-Present
Society for Integrative and Comparative Biology	2019-Present

Journal Referee

Insectes Sociaux (5) Proceedings of the Royal Society B (1) Journal of Experimental Biology (1)