

Bekka Sue Brodie, PhD
CURRICULUM VITAE
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CONTACT

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EDUCATION

PhD	Biology	Simon Fraser University, Burnaby, BC, Canada,	2015
MS	Entomology	State University of New York, Syracuse, NY, USA	2008
BS	Biology, Chemistry Minor	State University of New York, Oneonta, NY, USA	2003

EXPERIENCE

2016 – Present **Visiting Faculty**, Ohio University, Department of Biological Sciences, Athens, Ohio
2018 **Adjunct Lecturer**, Ohio University Chillicothe, Department of Biological Sciences, Chillicothe, Ohio.
2017 **Adjunct Lecturer**, Ohio Dominican University, Columbus, OH, USA.
2016 **Visiting Scientist**, University of Western Australia, School of Animal Biology, Perth, Australia in collaboration with and funded through Australian Wool Innovation Ltd.
2015 – 2016 **Postdoctoral Researcher**, Centre for Environmental Research, University of Bucharest, Bucharest, Romania funded through Mohammad bin Zayed Species Conservation Fund and EU – LIFE – Nature Programme.
2011– 2015 **Graduate Research Assistant**, Simon Fraser University, Animal/Insect Communication Ecology Lab, Burnaby, BC, Canada in collaboration and funded through Contech Ltd. (later Scotts Canada).
2008 – 2011 **Analytical Chemist**, Sawyer Environmental Chemistry Research Laboratory, University of Maine, Bangor, ME, USA.
2006 – 2008 **Graduate Research Assistant**, Forest Entomology/ Chemical Ecology Laboratory, State University of New York, Syracuse, USA.
2006 – 2007 **Business Manager**, Cranberry Lake Research Station, State University of New York, Syracuse, NY, USA.
2003 – 2005 **Environmental Educator**, United States Peace Corps. Savusavu, Vanua Levu, Fiji Islands.

TEACHING EXPERIENCE

Instruction

2018 **Human Anatomy & Physiology Lab**, Ohio University, Chillicothe, OH USA
(1 credit labs with ~ 25 students.)
Introductory Biology II Lecture and Lab (Animal Body Systems, Ecology & Evolution), Ohio University, Chillicothe and Athens, OH, USA
(4 credit lecture ~300-500 students and 1 credit lab ~25.)
2017 **General Biology I (Cell and Molecular Biology)**, Ohio Dominican University, Columbus, OH, USA
(4 credit lecture and lab with approx. 25 students.)

- 2016 – 2017 **Introductory Biology Labs I & II (Cell & Molecular Biology, Animal Body Systems, & Ecology and Evolution)**, Ohio University, Athens, OH, USA
(1 credit lab ~ 700 students and 24 Teaching Assistants.)
- 2011 – 2015 **Insect Biology Lab**, Simon Fraser University, Burnaby, BC, Canada.
(3 credit course ~50 students.)
- 2005 **Entomology Lab**, SUNY Environmental Science and Forestry.
(3 credit course ~ 50 students.)
- 2003 – 2005 **Biology**, Savu Savu Secondary School. (~50 students.)

Guest Lectures

- Brodie, B.S. Applied Insect Ecology: from sophisticated management to conservation. Animal Diversity (BIOS 1000), Ohio University, Athens, OH (23 March 17 & 6 March 18).
- Brodie, B.S. Longicorn beetle conservation in Romania: methods, strategies, and negotiation. Ohio University, Department of Biological Sciences (BIOS 4810), Athens, Ohio (18 February 2016 & 31 March 17).
- Brodie, B.S. Pollinators: Who they are, what they do, how they are attracted, and their economic value. Ohio University, Department of Biological Sciences (BIOS 4360), Athens, Ohio (15 February 2016).

Undergraduate and Graduate Mentoring

- 2018 Rush Elliot Undergraduate Research Students, Ohio University. Part time supervision (20 hours) of 3 students (Anna Pasternak, Mitch Duffner, and Amanda Frazer).
- 2016 – present Graduate student committee member, University of Western Australia, Perth. Advisor of Guanjie Yan, PhD candidate, on the topic of Ecology and Communication Pathways of the Australian Sheep Blow Fly (*Lucilia cuprina*).
- 2018 & 2016 Undergraduate Research Course, Ohio University. Part time supervision of 2 students (Julie Hixson and Ayden Wilson) in 1-3 credit course (BIOS 4910).
- 2016 – 2017 PACE (Program to Aid Career Exploration), Ohio University. Part-time supervision of 2 students (Ayden Wilson and Christine Denson) in fly pollinator research: *Research Design, Research Technique, and Research Reporting*.
- 2015 – 2016 Investigative Research Design and Innovation course, Oak Park River Forest High School (IL, USA). Part time mentorship of one student (Andrew Hennings) in an advanced placement research class: *Literature Review, Experimental Design, and Research Reporting*.
- 2013 – 2014 Undergraduate Independent Study Semester, Simon Fraser University. Full-time supervision of two students (Warren Wong and Courtney Eichorn) in three 5-credit courses: *Research Design, Research Technique, and Research Reporting*.
- 2012 – 2015 NSERC Undergraduate Research Assistant, Simon Fraser University. Full-time supervision of student employees (Maia Smith, Jennifer Avery, and Asim Renyard).
- 2012 – 2013 Undergraduate Research Course, Simon Fraser University. Part-time supervision of 3 students (Alysha Martins, Courtney Eichorn, and Arlan Benn) in 3-credit course.
- 2011 – 2013 Volunteer Research Assistants, part-time supervision of five students [Faraz Chattha (High School), Tamara Gubash (undergraduate), Jason Lawrence (Undergraduate), Courtney Eichorn (Undergraduate), and Steven Ogilvie (Undergraduate)].

ACADEMIC HONORS AND AWARDS

- 2016 **John Henry Comstock Award**, Entomological Society of America Pacific Branch, Nomination

- 2015 **3 Quarks Daily Science Writing Prize**, Semi-finalist (3rd place)
Graduate Fellowship, Department of Biological Sciences, Simon Fraser University
- 2014 **President's PhD Scholarship**, Simon Fraser University
Graduate Fellowship, Department of Biological Sciences, Simon Fraser University
Graduate Student Showcase, Annual Meeting of the Entomological Society of Canada, Saskatoon, SK
Graduate Teaching Award, Department of Biological Sciences, Simon Fraser University
3-Minute Thesis Competition, 3rd Place for Simon Fraser University, Campus-wide competition
3-Minute Thesis Competition, 1st Place and Peoples' Choice Awards, Faculty of Science, Simon Fraser University

RESEARCH GRANTS

- 2018 **Department of Biological Sciences Research (\$3,000.00)** Ohio University, project title: Assessing floral attractiveness to Dipteran pollinators.
- 2018 **Delaware County Regional Sewer District (\$6,933.00)**, project title: Integrated pest management for nuisance midges at ACWRF Wastewater Treatment Plant. (Co-PI with Dr. Kelly Johnson, Ohio University).
- 2017 **Australian Wool Innovation (A\$920,100.00)**, project title: Investigating multimodal cues for the attraction of Australian sheep blow flies, *Lucilia cuprina*. (Co-PI with Dr. Phillip Vercoe, University of Western Australia, and Dr. Johan Greeff, Australian Wool Innovation).
- 2016 & 2017 **Program to Aid Career Exploration (\$4,860.00)** funding for 2 undergraduate student researchers, project title: Predicting floral attractiveness and pollination potential of Diptera.
- 2015 **The Mohamed bin Zayed Species Conservation Fund (\$10,000.00)**, project title: Assessing the conservation status of endangered, vulnerable, and data deficient longicorn beetles (Family Cerambycidae) in traditionally managed Romanian forests.
- 2014 **Simon Fraser University Graduate Student Society (\$500.00)**, professional development grant.
- 2009 **Maine Agricultural Center (\$2,000.00)**, project title: Host semiochemical investigation of the lilly leaf beetle (Coleoptera: Chrysomelidae). (Co-PI with Dr. E. Groden University of Maine).

PUBLICATIONS

Papers in Peer-Reviewed Journals

(*denotes undergraduate research students mentored in research projects)

- Brodie, B.S., A. Renyard*, S. Ogilvie*, J. Avery*, H. Zhai, R. Gries, and G. Gries. 2018. Multi-modal communication of the skunk cabbage beetle, *Pelecomalium testaceum* (Family Staphylinidae). Arthropod – Plant Interactions. (*Accepted for publication.*)
- Yan, G., S. Liu, A. Schlink, G. Flematti, B.S. Brodie, B. Bohman, J. C. Greeff, P.E. Vercoe, J. Hu, and G.B. Martin. 2018. Behavior and electrophysiological response of *Lucilia cuprina* (Diptera: Calliphoridae) to carrion-associated compounds. Journal of Economic Entomology. (*Accepted for publication.*)
- Takacs S., A.E. Musso, R. Gries, E. Rozenberg, J.H. Borden, B.S. Brodie and G. Gries. 2017. New engineered food baits for trapping house mice, black rats, and brown rats. Applied Animal Behavior Science. 200:130-135.
- Eichorn, C.E. *, M. Hrabar, E. Van Ryn*, B.S. Brodie, A. Blake, and G. Gries. 2017. How flies are flirting on the fly. BMC Biology. 15:2. (F1000 Recommended)

- Brodie, B.S., T. Babcock*, A. Benn*, R. Gries, and G. Gries. 2016. Acquired smell? Mature females of the common green bottle flies shift semiochemical preference from feces feeding sites to carrion oviposition sites. *Journal of Chemical Ecology*. 42(1): 40-50.
- Brodie, B.S., M. Smith*, J. Lawrence*, and G. Gries. 2015. Pollen-seeking blow flies forage on ox-eye daisies, *Chrysanthemum leucanthemum*, with visual and semiochemical cues. *PLoS ONE* 10(12): e0145055.
- Brodie, B.S., W. H. L. Wong, S. L. Vanlaerhoven, and G. Gries. 2014. Is aggregated oviposition by the blow flies *Lucilia sericata* and *Phormia regina* (Diptera: Calliphoridae) pheromone-mediated? *Insect Science*. 22(5):651-660.
- Brodie, B.S., R. Gries, A. Martins*, S. Vanlaerhoven, and G. Gries. 2014. Bimodal cue complex signifies suitable oviposition sites to gravid females of the common green bottle fly. *Entomologia Experimentalis et Applicata*. 153(2): 114-127
- Brodie, B.S., J.D. Wickham, and S.A. Teale. 2012. The effect of sex and maturation on cuticular semiochemicals of *Monochamus scutellatus* (Coleoptera: Cerambycidae). *The Canadian Entomologist*. 144(6): 801-808.
- Popescu, D.V., B.S. Brodie, M. L. Hunter, and J. D. Zydlewski. 2012. Use of olfactory cues by newly metamorphosed wood frogs (*Lithobates sylvaticus*) during emigration. *Copeia*. (6): 424-431.

In Review with Peer-Reviewed Journals

- Yan, G., S. Liu, A.C. Schlink, G.R. Flematti, B.S. Brodie, B. Bohman, J.C. Greeff, P.E. Vercoe, J. Hu, G.B. Martin. Volatiles from susceptible and resistant Merino fleece evoke antennal and behavioural responses in the Australian sheep blow fly, *Lucilia cuprina*. *Medical Entomology*. (*In review*.)
- Brodie, B.S., V.D. Popescu, R. Iosif, C. Ciocanea, S. Manolache, G. Vanau, A.A. Gavriliadis, R. Serafim, & L. Rozyłowicz. Implementing rapid and non-lethal surveys of longicorn beetle communities using generic pheromone lures and occupancy methods. *Ecological Indicators*. (*In review*.)
- Yan, G., A.C. Shlink, B.S. Brodie, J. Hu, G. Martin. The effects of different diets and long-term laboratory rearing on reproduction, behavior and morphology of *Lucilia cuprina* (Wiedemann). *Journal of Insect Science*. (*In review*.)

In Preparation for Peer-Reviewed Journals

- B.S. Brodie, A.B. Wilson*, J. Hixon*, C.E. Scott, V. Popescu, & K. Johnson. Data mining social media to predict floral attractiveness to fly (Diptera) pollinators. In preparation for the *Journal of Applied Ecology*.

Patent

- Hrabar M., Stepanovic L., Eichorn C., Van Ryn E., Brodie B., Blake A., Thandi R., and Gries G. Systems and methods for attracting insects by simulating wing flash. PCT patent application filed 04 Nov 2016. PCT/US16/60708, docket no. 41950-0002.

Technical Reports and Professional Articles

- Brodie, B.S. 2015. A tale of two stinks! How blow flies locate feces and carrion. *Entomological Society of Canada Bulletin*. 47(1): 23-27.
- Brodie, B.S. and P.G. Conde. 2002. Terrestrial invertebrate survey within the provinces of Guanacaste and San Jose, Costa Rica. *Cooperstown Biological Field Station Annual Report, SUNY Oneonta State*.
- Brodie, B.S. 2002. A survey of arthropods along the Marcy-South power line at Greenwoods Conservancy. *Cooperstown Biological Field Station Annual Report, SUNY Oneonta State*.
- Horvath, T. and B.S. Brodie. 2002. Longitudinal distribution of zebra mussel (*Dreissena polymorpha*) veligers along Eaton Brook, Madison County New York. *Cooperstown Biological Field Station Annual Report, SUNY Oneonta State*. B
- Brodie, B.S. 2001. Aquatic invertebrate surveys of two ponds in Greenwoods Conservancy, one on and the

other off the Volney-Marcy South right of way. Cooperstown Biological Field Station Annual Report, SUNY Oneonta State.

ORAL PRESENTATIONS

(*denotes undergraduate research students mentored in research projects)

Invited Presentations

- Brodie, B.S. Harnessing sight communication pathways for fly management. Athens Area Birders Association. Athens, OH 9 November 18.
- Brodie, B.S. A Conversation about sustainable pest management. Sustainability Studies Theme. Ohio University. Athens, OH 25 October 18.
- Brodie, B.S. Harnessing sight communication pathways for fly management. Ohio Mosquito and Vector Control Association (OMVCA). Columbus, OH 11 October 18.
- Brodie, B.S. Harnessing sight communication pathways for fly management. Entomological Society of America (ESA), Entomological Society of Canada (ESC), and Entomological Society of British Columbia (ESBC) Joint Annual Meeting. Program Symposium: Crossing Borders for a Healthier Tomorrow: The Role of Entomology in the One Health Initiative. University of British Columbia, Vancouver, B.C. Canada 11 - 14 November 2018.
- Brodie, B.S. Harnessing sight and scent communication pathways for insect conservation and management. Plant Biology Colloquium, Ohio University, Athens, OH 2 March 18.
- Brodie, B.S. Foraging and communication ecology of the common green bottle fly, *Lucilia sericata* (Diptera: Calliphoridae). Western Australia University, Department of Agriculture, Perth, Western Australia, 10 May 2016.
- Brodie, B.S., T. Babcock, A. Martins, A. Benn, R. Gries, S. VanLaerhoven, and G. Gries. A tale of two stinks: Young and gravid blow flies differ in their behavioural responses to semiochemicals from feeding and oviposition sites. Graduate Student Showcase, Joint Annual Meeting of the Entomological Society of Canada and Saskatchewan, 28 September- 1 October 2014.

Submitted Presentations

- Pasternak, A.* (presenter), K. Johnson, B.S. Brodie. Exploring novel ways to control nuisance non-biting midges other than larvicides: polarized light and chemical odors as oviposition attractants. The 34th Annual Scientific Symposium of the Ohio River Basin Consortium for Research & Education (ORBCRE) and the Ohio River Basin Alliance (ORBA) Conference, Thomas More University. Crestview Hills, KY 17-19 October 2018.
- Sudnick, M.* (presenter), B.S. Brodie, K.A. Williams. Evaluating nest structure and temperature in relationship to parasitism by the avian blow fly. Ohio Avian Research Conference. Denison University, Granville, OH, 20 October 2018.
- Brodie, B.S. Applied Insect Ecology: from sophisticated management to conservation. EcoLunch, Ohio University, Athens, OH, 15 February 17.
- Brodie, B.S., D.V. Popescu, and L. Rozyłowicz. A survey of longicorn beetles (Family: Cerambycidae) in traditionally managed Romanian forests. The 7th International Zoological Congress of Grigore Antipa Museum, Bucharest RO, 18-22 November 2015.
- Eichorn, C.E. * (presenter), M.G. Hrabar, E.C. Van Ryn*, B.S. Brodie, A.J. Blake and G.J. Gries. Flashy mate recognition cues of the common green bottle fly, *Lucilia sericata*. Annual Meeting of the Entomological Society of Canada and Québec, 8-11 November 2015.
- Wong, W.H.L. *, (presenter), B.S. Brodie, S. Vanlaerhoven, and G. Gries. Is aggregated oviposition by the blow flies *Lucilia sericata* and *Phormia regina* (Diptera: Calliphoridae) really pheromone mediated? Entomological Society of America (ESA), Portland OR, 16-19 November 2014.

- Brodie, B.S., R. Gries, A. Martins, S. Vanlaerhoven, and G. Gries. Bimodal cue complex signifies suitable oviposition sites to gravid females of the common green bottle fly. Entomological Society of America (ESA), Portland OR, 16-19 November 2014.
- Brodie, B.S., W.H.L. Wong, S. Vanlaerhoven, and G. Gries. Is aggregated oviposition by the blow flies *Lucilia sericata* and *Phormia regina* (Diptera: Calliphoridae) really pheromone mediated? Entomological Society of British Columbia (ESBC), Vancouver BC, 24-25 October 2014.
- Brodie, B.S. and G. Gries. Multi-modal foraging and communication pathways of blow flies- 3 Minute Thesis Competition for Faculty of Science (24 February 2014) and University Wide (10 March 2014), Simon Fraser University, Burnaby, BC.
- Brodie, B.S., M. Smith, J. Lawrence, and G. Gries. Ox-eye daisies allure pollen-seeking blow flies, *Lucilia sericata*, with visual and semiochemical Cues. Joint Annual Meeting of the Entomological Societies of Canada and Ontario. Guelph, ON, 20-23 October 2013.
- Brodie, B.S., R. Gries, A. Martins, S.L. VanLaerhoven, and G. Gries. Semiochemicals attract blowflies (Diptera: Calliphoridae) to recently deceased and injured rats. Joint Annual Meeting of the Entomological Societies of Canada and Alberta. Edmonton, AB, 4-7 November 2012.
- Brodie, B.S., J.D. Wickham, and S.A. Teale. 2011. The effect of sex and maturation on cuticular semiochemicals of *Monochamus scutellatus* (Coleoptera: Cerambycidae). 27th Meeting of the International Society of Chemical Ecology. Vancouver, B.C., 24-28 July 2011.
- Popescu, D.V, B.S. Brodie, M. L. Hunter, and J. D. Zydlewski. 2011. Use of olfactory cues by newly metamorphosed wood frogs (*Lithobates sylvaticus*) during emigration. 27th Meeting of the International Society of Chemical Ecology. Vancouver, B.C., 24-28 July 2011.

OTHER PROFESSIONAL ACTIVITIES

Social Media

- Brodie, B.S. OHIO researchers called upon to solve midge fly infestation in Ohio waste water treatment plants. The Ohio University Forum. August 26, 2018. <https://www.ohio-forum.com/2018/08/ohio-researchers-called-upon-to-solve-midge-fly-infestation-in-ohio-waste-water-treatment-plants/>
- Brodie, B.S. and S. MacRostie. Crazy Cool Critters and Plants at Ohio University (@C3PO-U). Scientific Outreach and Communication Project. (Since January 2018)
- Brodie, B.S. 2016. Migration patterns for a family with no country – and a landing at OHIO. Ohio University e-news, College of Arts & Sciences Forum. <http://www.ohio-forum.com/2016/02/migrationpatterns-for-a-family-with-no-country-and-a-landing-at-ohio/>.
- Brodie, B.S. 2015. The case of the mysterious Mesosa longicorn beetle. Blog post in Entomology Today. <http://entomologytoday.org/2015/09/30/the-case-of-the-mysterious-mesosa-longicorn-beetle/>.
- Brodie, B.S. 2014. The Romanian tarantula. Blog post in Entomological Society of Canada <http://escsecblog.com/2014/05/02/the-romanian-tarantula-lycosa-singoriensis-lexmann-1770/> (The number 1 most viewed post for the ESC at over 5k views!)
- Brodie, B.S. Personal Blog: Aspiring to be an intentional role-model: mother, scientist, mentor, and teacher: <http://www.bekkabrodie.com/> (Since January 2014- 32 articles, 12k views).
- Twitter and Instagram: @BugsWithBekka (Since April 2010) and @C3POU (Crazy Cool Critters and Plants at Ohio University) (Since January 2018).

Outreach

- Brodie, B.S. Ohio Up Close. Recruitment event for High School Seniors and their parents. Ohio University, Athens, Ohio (24 & 31 March 17)
- Brodie, B.S. Citizen Scientists (you!) predicting floral attractiveness for fly pollinators. 18th Annual Ohio PawPaw Festival, Albany, OH (16 September 2016)

- Miller, S., and B.S. Brodie. Graduate Student Teaching Assistant Workshop, Ohio University, Athens, Ohio (26 August 2016)
- Brodie, B.S. and Wilson, A. Bug Jobs! Earth Day Celebration at Morrison-Gorden Elementary School Land Lab, Athens, Ohio (22 April 2016)
- Brodie, B.S., D.V. Popescu, L. Rozyłowicz, and S. Manolache. Workshop title "Speciile de cerambycide (gândaci croitori) din arealul Parcului Natural Poștile de Fier" (English translation: Workshop on Cerambycidae species (longicorn beetles) in the Iron Gates Natural Park) in Eșelnița, Romania (9 November 2015)
- Brodie, B.S. and D.V. Popescu. Diversity and ecology of Cerambycidae in a traditionally maintained landscape. Workshop for students from the Master of Integrated Environment Assessment (Evaluarea Integrată a Stării Mediului in Romanian), University of Bucharest in Orsova, Romania (1 June 2015)
- Brodie, B.S. Multi-modal foraging and communication pathways of blow flies. - 3 Minute Thesis, friendly event with University of British Columbia and Simon Fraser University winners at Tapestry Retirement Community, Vancouver, BC, Canada (11 April 2014).
- Brodie, B.S. Ox-eye daisies allure pollen-seeking blow flies, *Lucilia sericata*, with visual and semiochemical cues- Think Again Interdisciplinary Seminar Series, Simon Fraser University, Burnaby, BC, Canada (24 March 2014).
- Brodie, B.S. Adult lifestyles of the protein rich and necrophagous. Les Ecologistes, Simon Fraser University, Department of Biology, Vancouver, BC, Canada (30 October 2014).
- Brodie, B.S. Science spooktacular. Halloween workshop for children, Simon Fraser University, Burnaby, BC (October 2013 and 2014)
- Brodie, B.S. Beekeeping. Instructional workshop for Fijian villagers, Sustainable Income Generating Projects, United States Peace Corps (September 2004)
- Brodie, B.S. Learning adventures in environmental and agricultural quality. Summer workshop for undergraduate students. SUNY Oneonta, Cooperstown, NY (June through August 2000-2002)

PROFESSIONAL AFFILIATIONS

- National Science Teachers Association (2017)
- Athens County Area Beekeepers Association (2016)
- Association for Biodiversity Conservation, Romania (2014)
- Society for Canadian Women in Science and Technology (CWIST) (2014)
- Simon Fraser University (SFU) Women in Science (Since 2013)
- Entomological Society of Canada (Since 2012)
- International Society of Chemical Ecology (Since 2011)
- Entomological Society of Maine (Since 2008)
- Entomological Society of America (Since 2006)
- Friends of Fiji (Since 2003)

REFERENCES

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