

Chloé Lahondère

Thermal Biology, Eco-Physiology and Neuroethology of Disease Vector Insects

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EDUCATION

- 2009-2012 **PhD Thesis in *Life Sciences – Entomology***
University François Rabelais, Tours, France (*With highest honors*)
- 2008-2009 **Master of Science degree: MASTER 2nd year in *Insect Science***
University François Rabelais, Tours, France (*Rank: 1/35, with honors*)
- 2007-2008 **MASTER 1st year in *Population Biology***
University François Rabelais, Tours, France (*Rank: 3/35, with honors*)
- 2004-2007 **Bachelor of Science: LICENCE in *Integrative & Evolutive Biology***
University François Rabelais, Tours, France (*With honors*)

RESEARCH POSITIONS and EXPERIENCES

- 2017-present **Research Assistant Professor** Dept. of Biochemistry, Virginia Tech, Blacksburg, USA
Affiliated Faculty **Fralin Institute** (2017-present)
Affiliated Faculty **Global Change Center** (2018-present)
Affiliated Faculty **BIOTRANS program** (2018-present)
Affiliated Faculty **Dept. of Entomology** (2020-present)
- 2014-2017 **Research Associate**
Advised by Jeffrey Riffell
Dept. of Biology, University of Washington, Seattle USA
- 06-07 2014 **Research Assistant**
Advised by Lauren Buckley
Dept. of Biology, University of Washington, Seattle USA
- 01-04 2013 **Visiting Scholar**
Advised by Jeffrey Riffell
Dept. of Biology, University of Washington, Seattle USA
- 2009-2012 **Graduate Researcher** (PhD degree)
Advised by Claudio Lazzari
University François Rabelais, Tours, France
- 2008-2009 **Graduate Researcher** (MSc degree)
Advised by Claudio Lazzari
Université François Rabelais, Tours, France
- 2008 **Graduate Researcher** (MSc degree)
Advised by Claudio Lazzari
Université François Rabelais, Tours, France
- 06 2007 **Undergraduate Researcher** (BSc degree)
Advised by Michael Greenfield
Université François Rabelais, Tours, France

PUBLICATIONS (*: undergraduate student **: graduate student)*Under review / in revision / preprints*

- 17- Bates T.A., Chuong C., Marano J., Waldman A., Klinger A., Reinhold J.M.** , **Lahondère C.** and J. Weger. American *Aedes japonicus japonicus*, *Culex pipiens pipiens*, and *Culex restuans* mosquitoes have limited transmission capacity for a recent isolate of Usutu virus. (in revision). *Virology*.
- 16- Wolff G.H., **Lahondère C.**, Vinauger C. and J.A. Riffell. Neuromodulation and Differential Learning Across Mosquito Species. (in revision). *BioRxiv*, 755017.
- 15- Lazzari C.R., Fauquet A.** , **Lahondère C.**, Pereira M.H. and R. Araujo. Ticks perform evaporative cooling during blood-feeding (in revision). *Journal of Thermal Biology*.
- 14- **Lahondère C.**, Buradino M.** and Lazzari C.R. (2019). Thermoregulation in *Rhodnius prolixus*: heart activity and heterothermy. (in revision) *BioRxiv*, 685305.

Peer-reviewed

- 13- Chandrasegaran K., **Lahondère C.**, Escobar L.E. and Vinauger C. Mosquito ecology, behavior, and disease transmission. (in press). *Trends in Parasitology*.
- 12- **Lahondère C.**, C. Vinauger, R.P. Okubo, G. Wolff, J.K. Chan, O.S. Akbari, J.A. Riffell. (2019). The olfactory basis of orchid pollination by mosquitoes. *Proceedings of the National Academy of Sciences*. 201910589; DOI: 10.1073/pnas.1910589117.
- 11- Upshur I.F.** , Bose E.A* , Hart C.* and **C. Lahondère**. (2019). Temperature and sugar feeding effects on *Aedes aegypti* mosquitoes' activity *Insects*. 10(10): 347.
- 10- Afify A., Betz J.F., Riabinina O., **C. Lahondère**, C.J. Potter. (2019). Commonly used insect repellents hide human odors from *Anopheles* mosquitoes. *Current Biology*. 29:1-12.
- 9- Benoit J.B., Lazzari C.R., Denlinger D.L. and **C. Lahondère**. (2019). Thermoprotective adaptations are critical for arthropods feeding on warm-blooded hosts. *Current Opinion in Insect Science*. (34):7-11. *Recommended by the F1000*.
- 8- Reinhold J.** , Lazzari C.R. and **C. Lahondère**. (2018). Effects of temperature on *Aedes aegypti* and *Aedes albopictus*: a review. *Insects* 9(4), 158.
- 7- Lazzari C.R., Fauquet A.** and **Lahondère C.** (2018). Keeping cool: kissing bugs avoid cannibalism thermoregulating. *Journal of Insect Physiology*. (107):29–33.
- 6- Vinauger C., **C. Lahondère**+, G.H. Wolf, L.T. Locke*, J.E. Liaw*, J.Z. Parrish, O.S. Akbari, M.H. Dickinson and J.A. Riffell (2017). Dopamine modulation of host learning in *Aedes aegypti* mosquitoes. *Current Biology*. 28(333–344). (+: co first authorship)
- 5- **Lahondère C.**, Insausti T., Paim RMM, Luan X., Belev G., Pereira M.H., Ianowski J.P. and C.R. Lazzari (2017). Countercurrent heat exchange and thermoregulation during blood-feeding in kissing bugs. *eLife*. 2017; 6:e26107.
- 4- Lutz E.K.** , **Lahondère C.**, Vinauger, C. and J.A. Riffell (2017). Olfactory learning and chemical ecology of olfaction in disease vector mosquitoes: A life history perspective. *Current Opinion in Insect Science*. 20:75-83.
- 3- Vinauger C., **Lahondère C.**, Cohuet A., Lazzari C.R. and J.A. Riffell (2016). Learning and memory in disease vector insects. *Trends in Parasitology*. 32(10):761–771.
- 2- **Lahondère C.** and C.R. Lazzari (2015). Thermal effect of blood feeding in the telmophagous fly *Glossina morsitans morsitans*. *Journal of Thermal Biology*. 48:45-50.
- 1- **Lahondère C.** and C.R. Lazzari (2012). Mosquitoes cool down during blood feeding to avoid overheating, *Current Biology*, 22(1): 40-45. *Recommended by the F1000*.

Book Chapter:

- Pereira M.H., Paim R.M.M., **Lahondère C.** and C.R. Lazzari (2017). Heat shock proteins and blood-feeding in arthropods. In: Asea A., Kaur P. (eds) Heat Shock Proteins in Veterinary Medicine and Sciences. Heat Shock Proteins, vol 12. Springer.

- **Lahondère C.** and C.R. Lazzari (2013). Thermal stress and thermoregulation in *Anopheles* mosquitoes - New insights into malaria vectors, ed. Sylvie Manguin. ISBN 980-953-307-550-6.

FUNDINGS, HONORS and AWARDS

Board of Reviewers – MDPI Insects		2020
F1000 recommendation for <i>Current Opinion in Insect Science</i> paper		2019
Sigma Xi - The Scientific Research Honor Society - Full membership		2019
<i>eLife</i> Travel grant	\$1,000	2019
The Fralin Life Science Institute	\$10,000	2019
Global Change Center ISCE - Fralin Institute. (Role: PI)	\$17,300	2018-19
MicroFEWHS – Fralin Institute (Role: PI)	\$3,500	2018-19
The Eppley Foundation for Research (Role: PI)	\$23,097	2018-19
2018 Department of Biochemistry Research Award		2018
Margaret Walton Fellowship for Mountain Lake	\$493	2018
"Best presentation" award - UWPA research symposium		2016
University of Washington, Department of Biology Travel Grant	\$1,000	2016
University of Washington Undergraduate Research Mentor Nominee		2016
University of Washington Undergraduate Research Mentor Nominee		2015
<i>The Journal of Experimental Biology</i> Travelling Fellowship	£2,300	2012
Bed bugs physiology and behavior research (Role: Co- PI)	8000€	2012
Research and career development grant from IRBI / CNRS Tours, France	600€	2012
F1000 recommendation for 2012 <i>Current Biology</i> paper		2012
“Centenary Medal”		2009
<i>International Symposium on the Centenary of the Discovery of Chagas Disease, Rio de Janeiro, Brazil</i>		

INVITED TALKS and PRESENTATIONS (O: oral presentation P: poster)

2020

Lahondère C. In cold-blood: deciphering the mechanisms underlying mosquito-frog interactions (O) *OARDC meeting: Integrative mosquito biology: from molecules to ecosystems, Wooster, OH, USA (Planned, May 1st – invited talk).*

2019

Lahondère C. Eco-physiology and neuro-ethology of disease vector insects (O) *Entomology Departmental Seminar series, Blacksburg, VA, USA (March 28th – invited talk)*

Lahondère C., Hanlon R. and D. Schmale. Development of an unmanned aircraft system (UAS) to collect mosquitoes from remote areas. *2019 Micro FEWHS mini symposium, Blacksburg, VA, USA (May 6th – invited talk).*

Lahondère C. Eco-physiology and neuro-ethology of disease vector insects (O) *Le Studium Conference: New avenues for the behavioral manipulation of disease vectors, Tours, France (May 22nd – invited talk)*

Lahondère C. Climate change and the dynamics of mosquito populations in Virginia (O) *Carilion Climate Change Conference, Roanoke, VA, USA (October 5th – invited talk)*

Lahondère C. “Some like it hot”... and sweet (O) *Seminar series, JMU, VA, USA (October 25th – invited talk)*

Lahondère C. From pollinator to disease vector: a journey through the life of mosquitoes (O) *Promotion Seminar, Department of Biochemistry, Virginia Tech, Blacksburg, VA, USA (November 7th – invited talk)*

Upshur I., Bose E., Hart C. and **Lahondère C.** Temperature and sugar feeding effects on *Aedes aegypti* mosquitoes' activity (O) *Entomological Society of America, Saint Louis, MO, USA (November).*

2018

Lahondère C. Eco-physiology and neuro-ethology of disease vector insects (O) *OARDC meeting: Integrative mosquito biology: from molecules to ecosystems, Wooster, OH, USA (April 13th – invited talk)*

Lahondère C. Eco-physiology and neuro-ethology of disease vector insects (O) *Mountain Lake Biological Station seminar, Pembroke, VA, USA (June 5th – invited talk)*

Lahondère C. Effects of temperature on olfactory behavior in mosquitoes (O) *ECRO XXVIII Congress, Würzburg - Germany (September 8th – invited talk)*

Lahondère C. Some like it hot: thermal biology of disease vector insects (O) *Entomology 2018, ESA's 66th Annual Meeting, Vancouver, BC, Canada (November 14th – invited talk)*

2017

Lahondère C. Thermal Biology of disease vector insects (O) *Biochemistry Departmental Seminar, Virginia Tech, Blacksburg, VA, USA (July 20th – invited talk)*

Lahondère C., Vinauger C., Okubo R. and J.A. Riffell. Orchid pollination by snow mosquitoes (O) *Entomology 2017, ESA's 65th Annual Meeting, Denver, CO, USA*

Lahondère C., Liaw J.E., Tobin K., Joiner J.M., Vinauger C. and J.A. Riffell. Effect of temperature on olfactory behavior in mosquitoes (**Highlighted P**) *Entomology 2017, ESA's 65th Annual Meeting, Denver, CO, USA*

Lahondère C. Effect of temperature on olfactory behavior in mosquitoes (O) *Post-doctoral Symposium – Seattle, WA, USA*

2016

Lahondère C. What makes mosquitoes attracted to *Platanthera* orchids? (O) *UWPA Annual Symposium 2016 - Seattle, WA, USA*

Lahondère C., Vinauger C., Okubo R. & J.A. Riffell. The pollination ecology of *Platanthera* orchids by snow mosquitoes (O) *ICE 2016 – XXV International Congress of Entomology, Orlando, FL, USA*

Vinauger C., **Lahondère C.,** Locke L.T, Liaw J.E. & J.A. Riffell. Aversive learning in the disease vector mosquito *Aedes aegypti* (O) *ICE 2016 – XXV International Congress of Entomology, Orlando, FL, USA*

Liaw J.E., **Lahondère C.,** Vinauger C. & J.A. Riffell. Aversive learning in *Aedes aegypti* mosquitoes (O) *19th Annual Undergraduate Research Symposium, Seattle, WA, USA*

Lahondère C., Vinauger C., Wolff G., Locke L.T., Liaw J.E., Parrish J.Z., Akbari O., Dickinson M.H. & J.A. Riffell. Neuromodulation of olfactory learning in *Aedes aegypti* mosquitoes (P) *NIFTI (Nature Inspired Flight Technologies and Ideas) – SOAR meeting, Baltimore, MA, USA*

Lahondère C. What makes mosquitoes attracted to *Platanthera* orchids? (O) *Post-doctoral Symposium – PechaKucha, Seattle, WA, USA*

Lahondère C., Vinauger C., Okubo R. & J.A. Riffell. What makes mosquitoes attracted to *Platanthera* orchids? (P) *SICB Annual Meeting, Portland, OR, USA*

C. Vinauger, **Lahondère C.,** Lutz E.K., Locke L.T & J.A. Riffell. Olfactory learning in the vector mosquito *Aedes aegypti* (O) *SICB Annual Meeting, Portland, OR, USA*

2015

Liaw J.E., **Lahondère C.,** Vinauger C. & J.A. Riffell. Exploring learning abilities of disease vector mosquitoes (P) *18th Annual Undergraduate Research Symposium, Seattle, WA, USA*

Joiner J., **Lahondère C.,** & J.A. Riffell. Mosquito olfaction: effects of ambient temperature (P) *18th Annual Undergraduate Research Symposium, Seattle, WA, USA*

2014

Lahondère C., Insausti T., Ianowski J. & C.R. Lazzari. Keeping cool: Thermoregulation during feeding in kissing bugs (O, invited presentation). *Entomology 2014, ESA's 62nd Annual Meeting, Portland, OR, USA*

2013

Lahondère, C. Thermal stress and thermoregulation in haematophagous insects (O) *Max Planck Institute of Neurobiology, Martinsreid, Germany*

2012

Lahondère, C. Thermal stress and thermoregulation in haematophagous insects (O) “*Kikikose*”, *Tours, France*

Lahondère, C. Thermal stress and thermoregulation in haematophagous insects (O) *University of Washington, Seattle, WA, USA*

2011

Lahondère, C. Rocking behavior in Phasmatodea (P) *Colloque SFECA (Société Française pour l'Etude du Comportement Animal), Tours, France*

Fresquet N., **Lahondère C.** & C.R. Lazzari. Modulation de la réponse d'extension du proboscis par l'interaction des températures de la cible et de l'environnement chez un insecte hématophage (P) *Colloque SFECA (Société Française pour l'Etude du Comportement Animal), Tours, France*

Fresquet N., **Lahondère C.** & C.R. Lazzari. Role of the thermal background on the response to heat in *Rhodnius prolixus* (P) *The Sixth International Symposium on Molecular Insect Science, Amsterdam, the Netherlands*

Lahondère C., Insausti T. & C.R. Lazzari. Handling of thermal stress associated with feeding in haematophagous insects (O + P) *European PhD Network « Insect Science » Tours, France*

2010

Lahondère, C. & C.R. Lazzari. Stress thermique et thermorégulation chez les insectes hématophages (P) *16ème Colloque de Biologie de l'Insecte, Lyon, France*

Lahondère, C. & C.R. Lazzari. Thermal stress and thermoregulation in haematophagous insects (P) *Sensory Ecology: an international course for postgraduate students. Lund, Sweden*

2009

Lahondère, C. How haematophagous insects avoid excessive heating during feeding? (O) *INRA Versailles, France*

Lazzari, C.R., **Lahondère, C.**, Amino, R. & T.C. Insausti. Keeping cool: how blood-sucking insects avoid excessive warming during feeding. (P) *International Symposium on the Centenary of the Discovery of Chagas Disease, Rio de Janeiro, Brazil*

Lahondère, C. Stress thermique et thermorégulation chez les insectes hématophages (O) *Journée de l'IRBI (annual meeting), Tours, France*

STUDENTS MENTORING (*current lab members in bold*)

2020-present **Silvère Giraud** (MSc student, Université de Tours, France)
2020-present **Ashlynn VanWinkle** (Biochemistry BS student, Virginia Tech)
2019-present **Lauren Fryzlewicz** (BS-MSc student, Virginia Tech)
2019-present **Morgen VanderGiessen** (MSc student, Virginia Tech) Co-mentored with C. Vinauger
2019-present **Aley Savory** (Chemical engineering BS student, Virginia Tech)
2019-present **Ryan Shaw** (Biology BS student, Virginia Tech)
2018-present **Joanna Reinhold** (PhD student, Virginia Tech)
2018-present **Forde Upshur** (MSc student, Virginia Tech)

2018-present	Sarah Tartabini (BioChem student, Virginia Tech)
2015-present	Ryo Okubo (PhD student, UW Biology, Seattle)
2018-2019	Elizabeth Bose (BioChem and Clinical Neuroscience student, Virginia Tech)
2018-2019	Cameron Hart (BioChem student, Virginia Tech)
2016-2017	Kennedy Tobin (Neurobio undergrad student, UW Biology, Seattle)
2015-2017	Korosh Moosavi (BioChem undergrad student, UW Biology, Seattle)
2015-2017	Assel Shardarbekova (Neurobio undergrad student, UW Biology, Seattle)
2014-2017	Jessica E. Liaw (Bio undergrad student, UW Biology, Seattle)
2014-2016	Lauren T. Locke (Neurobio undergrad student, UW Biology, Seattle)
2014-2015	Jillian M. Joiner (Bio undergrad student, UW Biology, Seattle)
2012	Cindy Laurence (B.Sc. level: Licence 3 rd year, IRBI, Tours)
2010-2011	Maurane Buradino (B.Sc. level: Licence 3 rd year and M.Sc. level: Master 1 st year, IRBI Tours)

GRADUATE COMMITTEES (*current in bold*)

2019-present	Brianna Friedman (MSc student, Mechanical Engineering, Virginia Tech)
2019-present	Morgen VanderGiessen (MSc student, Virginia Tech) Co-mentored with C. Vinauger
2019-present	Lauren Fryzlewicz (BS-MSc student, Virginia Tech)
2019-present	Morgan Roth (PhD student – Entomology – Advisor: Aaron Gross)
2018-present	Nicole Wynne (PhD student – Biochemistry – Advisor: Clément Vinauger)
2018-present	Megan Richardson (PhD student - Biochemistry - Advisor: Jinsong Zhu)
2018-present	Joanna Reinhold (PhD student - Biochemistry - Committee Chair)
2018-present	Forde Upshur (MSc student- Biochemistry - Committee Chair)
2018-2019	Chris Yoo (MSc student - Biochemistry - Advisor: Daniel Slade)

TEACHING EXPERIENCE

2020	Biochem 2024 (guest lecture)
2019	Medical Parasitology - University of Cincinnati (guest lecture)
2019	Biochem 2024 (guest lecture)
2019	Biochemical Communication (guest lecture)
2018	Disease Ecology & Ecosystem Management, FiW 3414 (guest lecture)
2016	Chemical Communication (Instructor of record)
2012	Ecology (4h) <i>B.Sc. level: Licence 1st year</i>
2012	Ecology-Ethology (62h) <i>B.Sc. level: Licence 1st year</i>
2011	Insects mounting (4h) <i>M.Sc. level: Master 2nd year</i>
2011	Behavioral Ecology (14h) <i>Master 1st year</i>
2011	Ecology-Ethology (25h) <i>B.Sc. level: Licence 2nd year</i>
2010	Neuroethology (4h) <i>Master 1st year</i>
2010	Animal Biology (12h) <i>B.Sc. level: Licence 3rd year</i>

PROFESSIONAL ACTIVITIES & SERVICE

2020	Kids' Tech guest speaker
2019-2020	Co-guest editor of a COIS section on Vector and medical and veterinary entomology
2019	Symposium co-organizer for the ESA Eastern Branch Meeting – March 2019 – Blacksburg VA
2019	MLBS open house
2019	Hokie Bug Fest, Blacksburg, VA
2018-present	Diversity Committee Chair for the Biochemistry Dept
2018	<i>Ad hoc</i> Reviewer for NSF CAREER award
2018	Co-guest editor of a special issue on mosquito biology and ecology for the journal <i>Insects</i>

- 2016-2017 Graduate Program Committee Post-doctoral representative
2014-present Frontiers in Ecology and Evolution / Chemical Ecology Editorial board member
2012 Member of the administrative committee at the IRBI
2010-present Reviewer for *Bulletin of Entomological Research*, *Current Biology*, *Frontiers in Microbiology*, *African Journal of Biotechnology*, *Frontiers in Public Health*, *PloS One*, *Journal of Insect Physiology*, *Insect Science*, *Biology Letters*, *Insects*, *Parasites and Vectors*, *Biologia*, *Plos NTDs*, *Medical and Veterinary Entomology*, *Royal Society Open Science*, *IJERPH*, *Chemoecology*, *Journal of Insect Science*

Professional memberships:

- 2019-present AAAS
2019-present Sigma Xi
2018-present Virginia Mosquito Control Association
2014-present Entomological Society of America
2014-present Society of Integrative and Comparative Biology