

## Emmanuelle Chrétien, Ph. D.

Languages: French (fluently)  
English (fluently)  
Spanish (beginner)

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**Current position** Mitacs Post doctoral fellow  
INRS-ETE & Atlantic salmon research joint venture  
Supervisor : Normand Bergeron

### Education

2016 – 2021 Ph. D. Biology. Université de Montréal (UdeM).  
Project title: Environnement physique et environnement social – conséquences physiologiques de la sélection des habitats  
*Physical and social environments – physiological consequences of habitat selection*  
Supervisor : Daniel Boisclair (co-supervised by Steven J. Cooke, Carleton University)

2013 – 2015 M. Sc. Biology. McGill University.  
Project title: Habitat selection and body size as potential drivers of intraspecific variation in thermal tolerance of Nile perch (*Lates niloticus*)  
Supervisor: Lauren J. Chapman

2010 – 2013 B.Sc. Biological Sciences (Biodiversity, Ecology and Evolution). Université de Montréal.  
Honours project supervised by Irene Gregory-Eaves, McGill University (2012-2013)  
Project title: Macroinvertebrate richness and food chain length variation along a strong trophic gradient: A study of shallow lakes from southeastern Quebec

2001 – 2004 B.A. Communication (Public Relations). UQÀM.

### Teaching Experience

#### Course lecturer

Fall 2022 BIO2476 Ichthyology. Université de Montréal  
Fall 2021 BIO2476 Ichthyology. Université de Montréal  
Fall 2020 BIO2476 Ichthyology. Université de Montréal  
Fall 2019 BIO2476 Ichthyology. Université de Montréal

#### Teaching assistant

Winter 2021 BIO1434 Biodiversity lab II. Université de Montréal (head TA)  
Winter 2021 BIO2811/6034 Population dynamics. Université de Montréal  
Winter 2020 BIO1434 Biodiversity lab II. Université de Montréal (head TA)  
Fall 2018 BIO2476 Ichthyology. Université de Montréal (head TA)  
Winter 2018 BIO1434 Biodiversity lab II. Université de Montréal (head TA)  
Fall 2017 BIO2476 Ichthyology. Université de Montréal (head TA)  
Winter 2017 BIO1434 Biodiversity lab II. Université de Montréal (head TA)  
Fall 2016 BIO2476 Ichthyology. Université de Montréal.  
Winter 2016 BIO1434 Biodiversity lab II. Université de Montréal  
Winter 2016 BIO2811 Population dynamics. Université de Montréal.  
Fall 2015 BIOL206 Methods in Biology of Organisms. McGill University

Fall 2015 BIO2043 Statistics for life sciences. Université de Montréal  
September 2012 BIO2476 Ichthyology. Université de Montréal.

*Workshop presenter*

Fall 2019 GRIL-Ecolac Workshops: Oral communication in research – the content and the container. Station de biologie des Laurentides  
GRIL Stats Workshop: Introduction to LMM, GLM, and GLMM. UQÀM  
Fall 2018 GRIL-Ecolac Workshops: Oral communication in research – the content and the container. Station de biologie des Laurentides  
Fall 2016 GRIL-EcoLac workshops: Introduction to fish sampling methods. Station de biologie des Laurentides  
Winter 2016 QCBS R Workshops – Advanced multivariate analyses (French). Université de Montréal.  
Winter 2016 QCBS R Workshops – Multivariate analyses (French). Université de Montréal.  
Fall 2015 QCBS R Workshops – Linear models (French). Université de Montréal.  
Winter 2015 QCBS R Workshops – Multivariate analyses (French). Université Laval and Université de Montréal.

*Guest lecturer*

November 2021 ZOO1004 Fish Biology. Université du Québec à Trois-Rivières  
March 2016 BIO2811 Population dynamics. Université de Montréal.

*Tutoring*

Winter 2016 BIO1803 Ecology and Environment. Université de Montréal.

*Undergraduate student co-supervision*

Hiver 2021 Chiara Babinski, research credits, Binning lab, Université de Montréal.  
Hiver 2021 Jani Boyer, research credits, Binning lab, Université de Montréal.  
Hiver 2021 Rémi Chauvette, research credits, Binning lab, Université de Montréal.  
Hiver 2021 Maryane Gradito, research credits, Binning lab, Université de Montréal.  
Automne 2020 Élisabeth Mélis, research credits, Binning lab, Université de Montréal.  
Summer 2020 Antoine Caron-Guay, research assistant, Binning lab, Université de Montréal  
Winter 2017 Lisa Galantini, research credits, Boisclair lab, Université de Montréal.  
Fall 2016 Andréanne Dupont, research credits, Boisclair lab, Université de Montréal.

**Professional Experiences**

Summer 2013 Team leader, environmental and ichthyological riverine surveys. NSERC HydroNet Network  
Summers 2011-2012 Research assistant, environmental and ichthyological riverine surveys. NSERC HydroNet Network  
2010 – 2013 Freelance in communications, marketing and promotions (clients: Remstar Films, Brigitte Chabot Communications, V Télé, Influence Communication)  
2005 – 2010 Marketing and promotions coordinator, Alliance Vivafilm

**Volunteer work**

Summer 2021 BioBlitz Laboratoire écoforestier du Grand Lièvre: fish sampling  
Summer 2019 BioBlitz OBV RPNS : fish sampling and outreach to public participants

Summer 2017 BioBlitz Station de biologie des Laurentides: biologist leading fish sampling team  
Spring 2016 24h of science: animation of GRIL booth on aquatic ecology, diversity and conservation

## Grants, Fellowships and Awards

### *Fellowships with competition at the provincial or national level*

2017 – 2020 NSERC Graduate scholarship (CGS-D): Ph.D. (\$105 000)  
2016 – 2017 FRQNT Ph.D. Fellowship (\$60 000)  
2014 NSERC Alexander Graham Bell Canada Graduate scholarship (CGS-M): M.Sc. (\$17 500)  
2013 – 2015 FRQNT M.Sc. Fellowship (\$30 000)  
2013 NSERC – Undergraduate Student Research Award (USRA) (\$4500)  
2012 NSERC – Undergraduate Student Research Award (USRA) (\$4500)

### *Other grants and fellowships*

2019 Company of Biologists – Travel Award (GPB 350; \$ 596)  
2018 FRQNT – GRIL International Internship Award (\$7500)  
2018 NSERC Michael Smith Foreign Study Supplement (declined) (\$6000)  
2018 GRIL – International conference funding. (\$1000)  
2017 GRIL – Short-term internship in Canada or the United States (\$750)  
2016 QCBS – Learning Development Award (LeaDA) (\$861)  
2016 Université de Montréal, Entrance Award. (\$2000)  
2015 McGill Biology – GREAT Award (\$500)  
2015 Global Conference on Inland Fisheries at FAO, Rome. Financial assistance. (\$335)  
2014 QCBS – Excellence Award (\$1200)  
2014 McGill Biology – Research Travel Award (\$2000)  
2014 McGill Biology – GREAT Award (\$337)  
2013 McGill Biology – Graduate Admission Top-up Award (\$2500)  
2013 McGill Biology – Entrance Award (\$2500)

### *Awards, prizes and recognitions*

2022 Université de Montréal, President's Honour List  
2019 "L'illustre recherche" contest. Finalist. FAÉCUM. Université de Montréal  
2019 Larkin Award, PhD level. Canadian Aquatic section of AFS (\$400)  
2018 Faculté des études supérieures de l'Université de Montréal – Best presentation (\$125)  
2018 Symposium de sciences biologiques de l'Université de Montréal – Best presentation  
"Ecology and conservation" (\$100)  
2016 Symposium de sciences biologiques de l'Université de Montréal – Best photo (\$50)  
2016 Symposium de sciences biologiques de l'Université de Montréal – Best presentation  
"Ecology" (\$100)  
2015 QCBS, 2015 QCBS Symposium – Best photo "Scientific at work" (\$75)  
2014 QCBS, 2014 QCBS Symposium – Runner up Best presentation (\$250)  
2012 – 2013 Université de Montréal, FAS Dean's Honour List

## Research Interests

Freshwater Systems Ecology; Biodiversity Conservation; Community Ecology; Fish Physiology and Evolutionary Ecology; Invasive Species; Analysis of Ecological Data in R

## Publications

### Peer reviewed

- Chrétien, E., De Bonville, J., Guitard, J., Binning, S. A., Melis, É., Kack, A., Côté, A., Gradito, M., Papillon, A., Thelamon, V., Levet, M., Barou-Dagues, M. *Sous presse*. Few studies of wild animal performance account for parasite infections : a systematic review. *Journal of Animal Ecology*. 00:1-13. <https://doi.org/10.1111/1365-2656.13864>  
Preprint available on EcoEvoRxiv. <https://doi.org/10.32942/X28G66>
- Guitard, J. J., Chrétien, E., De Bonville, J., Roche, D. G., Boisclair, D. & Binning, S. A. 2022. Increased parasite load is associated with reduced metabolic rates and escape responsiveness in pumpkinseed sunfish host. *Journal of Experimental Biology*. 225(15):jeb243160 <https://doi.org/10.1242/jeb.243160>  
Preprint available on *bioRxiv*. doi: 10.1101/2022.01.24.477519
- Chrétien, E., Boisclair, D., Cooke, S. J. & Killen, Shaun S. 2021. Social group size and shelter availability influence individual metabolic traits in a social fish. *Integrative Organismal Biology* 3(1):1-12. doi: 10.1093/iob/obab032  
Preprint available on *bioRxiv*. doi: 10.1101/2021.04.20.440644
- Chrétien E., S. J. Cooke and D. Boisclair. 2021. Does shelter influence the metabolic traits of a teleost fish? *Journal of Fish Biology*. 98:1242-1252. doi:10.1111/jfb.14653
- Nyboer E.A., Chrétien E. and L.J. Chapman. 2020. Divergence in aerobic scope and thermal tolerance of an introduced piscivore is related to local thermal regime. *Journal of Fish Biology*. 97(1): 231-245. doi: 10.1111/jfb.14355
- Hasler C.T., Raby G.D., Chrétien E., Stockwell M., Cooke S.J., Rechisky E., Welch D.W., Sopinka N.M., and N.E. Mandrak. 2019. Reflections on the legends of Canadian fisheries science and management. *Fisheries*. 44(11): 534-538; doi: 10.1002/fsh.10290.
- Chrétien E. and L. J. Chapman. 2016. Tropical fish in a warming world: thermal tolerance of Nile perch *Lates niloticus* (L.) in Lake Nabugabo, Uganda. *Conservation Physiology* 4(1): cow062; doi: 10.1093/conphys/cow062.
- Chrétien E. and L. J. Chapman. 2016. Habitat heterogeneity facilitates coexistence of native fishes with an introduced predator: the resilience of a fish community 5 decades after the introduction of Nile perch. *Biological Invasions*. 18(12): 3449-3464. doi:10.1007/s10530-016-1235-x

### Archived data

- Chrétien, E., De Bonville, J., Guitard, J., Binning, S. A., Melis, É., Kack, A., Côté, A., Gradito, M., Papillon, A., Thelamon, V., Levet, M., Barou-Dagues, M. 2022. Data for Few studies of wild animal performance account for parasite infections : a systematic review. Zenodo. <https://doi.org/10.5281/zenodo.7296510>
- Chrétien E. 2021. Data for Chretien et al. 2021 Group size influences individual metabolic traits in a social fish. Zenodo. <https://doi.org/10.5281/zenodo.4705121>
- Chrétien E. 2020. Effects of presence of shelter on smallmouth bass metabolic traits – capture and experiment data. Zenodo. <https://doi.org/10.5281/zenodo.3890437>
- Chrétien E. 2019. Ichthyological data of Station de biologie des Laurentides (2019). Zenodo. <https://doi.org/10.5281/zenodo.3533328>
- Chrétien E. & Leclerc, M. 2019. Ichthyological data of Station de biologie des Laurentides. Zenodo. <https://doi.org/10.5281/zenodo.3246544>

## Media coverage

- Quartier Libre. April 7, 2020. <https://www.facebook.com/notes/quartier-libre/sa-th%C3%A8se-expliqu%C3%A9e-en-bd/3381641928519079>
- CBC Radio (French). Le 6 à 9. May 16, 2018: <https://ici.radio-canada.ca/premiere/emissions/le-6-a-9/episodes/407316/audio-fil-du-mercredi-16-mai-2018/6>
- UdeM Nouvelles. « Ma thèse en 150 mots » series. May 2, 2018. <https://nouvelles.umontreal.ca/article/2018/05/02/j-observe-des-achigans-jour-et-nuit/>
- UdeM Nouvelles. April 24, 2018. <http://nouvelles.umontreal.ca/article/2018/04/24/une-etudiante-a-suivi-par-telemetry-25-achigans-jour-et-nuit/>

## Outreach

- Video « Sous la surface » created for GRIL participation to 24h des sciences (in French) <https://www.youtube.com/watch?v=VLD2GV906Uk>
- Video of participation to 3 minute thesis (in French) at Université de Montréal <https://youtu.be/RT-yZlK6elc>

## Peer review

Aquatic Sciences (1); Conservation Physiology (1); Environmental Biology of Fishes (1); Journal of Applied Ichthyology (1); Journal of Experimental Biology (1); Journal of Fish Biology (1); Journal of Great Lakes Research (1); Marine Biology (1); PLOS ONE (1)

## Seminars and presentations

### *Invited speaker*

- Chrétien E. 2022. Physical environment and physiological consequences of habitat selection. DFO's Freshwater Habitat Science Initiative Seminar Series. Virtual Event.
- Chrétien E. 2021. Environnement physique et environnement social – déterminants et conséquences de la sélection des habitats. UQÀR. Virtual Event.
- Chrétien E. 2021. Déterminants et conséquences de la sélection des habitats chez les poissons. Centre Eau Terre Environnement, Institut National de la Recherche Scientifique. Virtual Event.
- Chrétien E. 2020. Determinants and context-dependence of fish habitat selection. Département de sciences biologiques, UQÀM. Montreal, QC Canada.
- Chrétien E. 2019. Determinants and context-dependence of habitat selection in freshwater fish. Institute of Biodiversity, Animal Health, and Comparative Medicine, University of Glasgow. Glasgow, Scotland.

### *Conference presentations – international*

#### *Oral presentation*

- Chrétien E., Ouellet-Proulx S., Sirois P., Gillis C-A. and Bergeron N. Effects of heat stress events on Atlantic salmon growth and condition. NoWPaS 2023. Oslo, Norway.
- Chrétien E., De Bonville J., Guitard J., Binning S. A., Melis E., Kack A., Côté A., Gradito M., Papillon A, Thelamon V, Levet M. and Barou-Dagues M. 2022. Few studies on wild animal performance account for parasite infections : a systematic review. Society for Experimental Biology annual symposium. Montpellier, France.

- Chrétien E. and Killen S. S. 2022. Effects of the social environment on fish metabolism. Society for Experimental Biology annual symposium. Montpellier, France.
- Chrétien E., St-Hilaire A., Breau C., Gillis C.-A., April J., O'Sullivan A., Linnansaari T. and Bergeron N. E. 2022. Effects of heat stress events and thermal refuge availability on Atlantic salmon growth, condition and marine survival. NoWPaS. Pays Basque, France.
- Chrétien E., Boisclair D., Cooke S. J. and Killen S. S. 2021. The relative importance of the social environment and presence of shelter on fish metabolism. Society for Experimental Biology annual symposium. Virtual event.
- Chrétien E., Cooke S. J., and Boisclair D. 2019. Does the presence of shelter influence the metabolic traits of lentic and lotic smallmouth bass? Society for Experimental Biology annual symposium. Seville, Spain.
- Chrétien E., Cooke S. J. and Boisclair D. 2018. Variations in diel habitat selection of riverine fish: comparing the predictive capacity of models developed with radio-tracking data. International Symposium on Ecohydraulics, Tokyo, Japan.

#### *Poster*

- Chrétien, E. and Killen, S. S. 2019. Effects of post-feeding metabolism on air-breathing frequency in corydoras catfish. Society for Experimental Biology annual symposium. Seville, Spain.
- Chrétien E. and Chapman L. J. 2015. Persistence of an African Inland Fishery in the Face of Climate Change: Aerobic Performance and Upper Thermal Tolerance of Nile Perch (*Lates niloticus*). Global Conference on Inland Fisheries. FAO Headquarters, Rome, Italy.

#### **Conference presentations – regional and national**

##### *Oral presentation*

- Chrétien E., Ouellet-Proulx S., Sirois P., Gillis C-A. and Bergeron N. Effects of heat stress events on Atlantic salmon growth and condition. SCAS 2023. Montreal, QC Canada.
- Chrétien E., Ouellet-Proulx S., Sirois P., Gillis C-A. and Bergeron N. Effects of heat stress events and thermal refuge availability on Atlantic salmon growth and condition. Restigouche Science Committee 2023. Campbellton, NB Canada.
- Chrétien E. and Killen S.S. 2021. Effets de l'environnement social sur le métabolisme des poissons. SQEBC Annual Symposium 2021. Sherbrooke, QC Canada.
- Chrétien E., Cooke S. J., Boisclair D. and Killen S.S. 2021. Effets de l'environnement social et de la présence de refuge sur le métabolisme des poissons. GRIL Annual Symposium 2021. Virtual event.
- Chrétien E., Cooke S. J., and Boisclair D. 2020. Does use of Habitat selection phenotypes increase the predictive power of fish habitat models? Canadian Conference for Fish and Fisheries Research. Halifax, NS Canada.
- Chrétien E., Cooke S. J. and Boisclair D. 2018. Relative importance of abiotic factors on daytime/nighttime home range and habitat selection of riverine smallmouth bass. GRIL Annual Symposium, Mont-Orford, QC Canada.
- Chrétien E. and Chapman L. J. 2015. La résilience d'une communauté de poissons 50 ans après l'introduction de la perche du Nil: une coexistence facilitée par l'hétérogénéité de l'habitat. QCBS symposium. Montreal, QC Canada.
- Chrétien E. and Chapman L. J. 2014. Performance aérobie et tolérance thermique maximale de la perche du Nil (*Lates niloticus*) en fonction de leur taille et de leur sélection d'habitat. QCBS symposium. Montreal, QC Canada.

- Chrétien E. and Chapman L. J. 2014. Persistence under intense fishing pressure: Distribution and condition of Nile perch (*Lates niloticus*) among habitats in Lake Nabugabo, Uganda. Genomes to biomes. Montreal, QC Canada.

#### Poster

- Chrétien E., St-Hilaire A., Breau C., Gillis C.-A., April J., O'Sullivan A., Linnansaari T. and Bergeron N. E. 2022. Effects of heat stress events and thermal refuge availability on Atlantic salmon growth, condition and marine survival. Forum des savoirs sur le saumon atlantique. Québec, QC Canada.
- Chrétien E., Cooke S. J. and Boisclair D. 2017. The potential for aerobic scope and movement rates to be integrated into fish habitat quality models. CCFFR – SCL, Montréal, QC Canada.
- Lejeune, C., Chrétien, E., Asselin, J., Harvey-Lavoie, S., Macnaughton, C., Oligny-Hébert, H., Bourque, G., Guénard, G., Lanthier, G., Senay, C. and Boisclair D. 2016. Identification and modeling of fish habitat quality indicators. GRIL Symposium, Mont-Orford, QC Canada.
- Chrétien E., Ziegler J., Pelletier G. and Gregory-Eaves I. 2013. Macroinvertebrate richness and food chain length variation along a strong trophic gradient: A study of shallow lakes from southeastern Quebec. GRIL Symposium, St-Hippolyte, QC Canada.

#### Conference presentations – institutional

##### Oral presentation

- Chrétien E., Cooke S. J., Boisclair D. and Killen S. S. 2019. The effects of social environment and presence of cover on fish metabolism. Fish Away Day of Institute of Biodiversity, Animal Health and Comparative Medicine, Scottish center for ecology and natural environment (SCENE), University of Glasgow, Scotland.
- Chrétien E., Cooke S. J. and Boisclair D. 2018. Le jour et la nuit : différences dans l'importance relative des facteurs abiotiques sur le domaine vital et la sélection de l'habitat des poissons. Symposium de sciences biologiques, Université de Montréal. Montreal, QC Canada.
- Chrétien E. and Chapman L. J. 2016. Capacité aérobique et tolérance thermique maximale de la perche du Nil (*Lates niloticus*) du lac Nabugabo (Ouganda). Symposium de sciences biologiques, Université de Montréal. Montreal, QC Canada.
- Chrétien E., Chapman L. J. 2014. Habitat selection and body size as potential drivers of intraspecific variation in thermal tolerance of Nile perch (*Lates niloticus*). Conservation, Ecology, Evolution and Biodiversity (CEEB) Retreat, McGill University. St-Hilaire, QC Canada.
- Chrétien E., Ziegler J., Pelletier G. and Gregory-Eaves I. 2013. Effet de l'eutrophisation sur les chaînes trophiques des écosystèmes lenticques : Une étude des communautés de macroinvertébrés. Symposium de sciences biologiques, Université de Montréal. Montreal, QC Canada.

##### Poster

- Chrétien E., Cooke S. J. and Boisclair D. 2017. Capacité métabolique et taux de mouvements : de nouveaux indicateurs de la performance à intégrer aux modèles de qualité de l'habitat du poisson? Symposium de sciences biologiques, Université de Montréal. Montreal, QC Canada

#### Certifications and other relevant training

Aquatic habitat mapping of hydroacoustics data with Visual Habitat. 2017.

First Aid and CPR Certification. 2016.

Université de Montréal Animal care training : « Tronc commun », « fonctionnement du CDEA », and « module pratique (poissons) » levels. 2016.

McGill Animal Care Committee: Basic, Advanced, and Wildlife levels. 2013.  
WHMIS and Safety Training (McGill University). 2013.  
Backpack Electrofishing Certification (Class 2). 2011.  
Open water diver. CMAS International Certificate. 2007

### **Affiliations**

Spring 2022-present	SCAS
Summer 2020-present	ACFAS
Spring 2016-present	Society for experimental biology (SEB)
Winter 2016-present	Groupe de recherche interuniversitaire en limnologie (GRIL)
Winter 2014-present	American Fisheries Society (AFS)
Fall 2013-Winter 2016	Quebec center for biodiversity science (QCBS)

### **Contributions to University & Scholarly Communities**

February 2023	Judge for GRIL symposium posters contest (masters level)
Summer 2021	Technical support for the Society for Experimental Biology virtual conference, judge for posters contest
Sept. 2019-Sept.2020	“Student experience” committee representative for Université de Montréal Biology graduate student association (AÉCBUM)
Sept. 2018- Sept.2020	Student representative for “Communications” committee of the Department of biological sciences of Université de Montréal
Sept. 2018-Sept. 2019	Student representative for “Diversity” committee of the Department of biological sciences of Université de Montréal
Sept. 2016-Sept. 2018	Internal affairs representative for Université de Montréal Biology graduate student association (AÉCBUM)
Sept. 2016-Mar. 2017	Member of XXVIIe Symposium de sciences biologiques de l’Université de Montréal organizing committee (March 22-23, 2017 at Carrefour des arts et des sciences)
Jan. 2014-Mar. 2017	Student representative on the Executive Committee of Canadian Aquatic Resource Section (CARS) of the American Fisheries Society (AFS): contribution to website and social media content, outreach, etc.
Sept. 2016-Jan. 2017	Member of the Student committee for 2017 Montreal Canadian Conference For Fisheries Research (CCFFR)
Feb. 2015-Sept. 2016	QCBS R Workshop Series (development of teaching material, translation of material, presenter at Université de Montréal and Université Laval)
Sept. 2014-Dec. 2015	Councillor for Biology graduate students association (organization of 2015 holiday party, volunteer for social events)
Fall 2015	Volunteer for the Quebec center of biodiversity science (QCBS) conference (moderator for Animal behaviour session)
Sept. 2014-Aug. 2015	Organismal seminars committee representative for the McGill University Biology graduate students association (BGSA)
Sept. 2014-May 2015	Lab meeting coordinator (Lauren Chapman lab, McGill University)
2014	Member of the Student Committee for ASF Quebec 2014 Conference Student Networking Event
May 2014	Volunteer for the Genomes to biomes joint conference (translation of documentation)
Fall 2013	Volunteer for the Quebec center of biodiversity science (QCBS) conference (selection of abstracts, moderator for Invasive species session)



2010-2012

Volunteer (2010-2011) and Coordinator (2012) of Café Bio, student café of the biology undergrad students association of Université de Montréal (AEBUM)

*Academic transcripts available upon request.*