
Charles Gauthier, PhD

Professor-researcher in carbohydrate and natural product chemistry

Institut national de la recherche scientifique
INRS-Institut Armand-Frappier
531, boul. des Prairies
Laval (Québec), Canada, H7V 1B7
Tel.: +1 450-687-5010 ext. 8886
Email: charles.gauthier@iaf.inrs.ca
Research group website: <http://cgauthier.profs.inrs.ca>

ACADEMIC & PROFESSIONAL APPOINTMENTS

- 2016-present **Assistant Professor**
Institut national de la recherche scientifique
INRS-Institut Armand-Frappier, Laval (Québec), Canada
- 2012-present **Adjunct Professor**
Université du Québec à Chicoutimi, Saguenay (Québec), Canada
Department of Fundamental Sciences, Laboratoire LASEVE
- 2011-2016 **Senior Lecturer**
University of Poitiers, Poitiers, France
CNRS-UMR 7285, Institut de Chimie IC2MP (Prof. Yves Blériot)
- 2010-2011 **Postdoctoral Fellow**
University of Oxford, Oxford, United Kingdom
Chemistry Research Laboratory
Mentor: Prof. Benjamin G. Davis
- 2009-2010 **Postdoctoral Fellow**
Institut Pasteur, Paris, France
CNRS-UMR 3523, Unité de Chimie des Biomolécules
Mentor: Dr Laurence A. Mulard
- 2005-2008 **PhD Student, Natural Product Chemistry**
Université du Québec à Chicoutimi, Saguenay (Québec), Canada
Université du Québec à Montréal, Montréal (Québec), Canada
Director: Prof. André Pichette; Co-director: Prof. Jean Legault
- 2004 **Research Trainee**
University of Poitiers, Poitiers, France
CNRS-UMR 6514, Synthèse et Réactivité des Substances Naturelles
Mentor: Prof. Sébastien Papot
- 2003-2008 **Teaching Assistant**
Université du Québec à Chicoutimi, Saguenay (Québec), Canada
Université du Québec à Montréal, Montréal (Québec), Canada
- 2003-2005 **MSc Student, Natural Product Chemistry**
Université du Québec à Chicoutimi, Saguenay (Québec), Canada
Director: Prof. André Pichette; Co-director: Prof. Jean Legault
- 2002-2003 **Research Assistant**
Université du Québec à Chicoutimi, Saguenay (Québec), Canada
Laboratoire LASEVE
Mentor: Prof. André Pichette

2001 **Research Assistant**
 Université du Québec à Chicoutimi, Saguenay (Québec), Canada
 Laboratoire ALCAN
 Mentor: Prof. Michel J. Gagnon

2000-2003 **BSc Student, Chemistry**
 Université du Québec à Chicoutimi, Saguenay (Québec), Canada

RESEARCH FUNDING

2019-2022 **Fonds de recherche du Québec (FRQ) & Fonds de la recherche scientifique (F.R.S./FNRS)**
 Program: Programme bilatéral de recherche collaborative Québec – Fédération Wallonie Bruxelles
 Project: Synthetic inhibitors targeting polysaccharides biosynthesis as potential alternatives to antibiotherapy
 (Co-PI with Prof. Stéphane Vincent; \$650,000, 50%)

2019-2020 **Canadian Institutes of Health Research (CIHR)**
 Program: Planning and Dissemination Grant – Institute Community Support
 Project: Dissiper la fumée : Cannabis et Santé – Colloque conjoint du RQRM, RSR et RQRD
 (Co-PI with Prof. Éric Marsault and seven others; \$20,000)

2019-2020 **Natural Sciences and Engineering Research Council of Canada (NSERC)**
 Program: Research Tools and Instruments
 Project: Investigating versatile biomolecular interactions using microscale thermophoresis
 (Co-PI with Prof. Charles Calmettes and five others; \$150,000)

2018-2021 **Fonds de recherche du Québec – Nature et technologies (FRQNT)**
 Program: Team Research Project
 Project: Chemical synthesis, extraction, purification and neuroprotective properties of anthocyanins
 (Co-PI with Prof. Charles Ramassamy; \$210,000, 50%)

2018-2020 **Fonds de recherche du Québec – Santé (FRQS)**
 Program: Research Scholars Junior 2
 Project: Sugar-based vaccines and therapeutic agents against Gram-negative bacteria
 (Principal investigator; \$133,783, 100%)

2018-2020 **Institut national de la recherche scientifique (INRS)**
 Program: Research Funds for New Investigators
 Project: Platform for the synthesis and analysis of therapeutic organic compounds
 (Principal investigator; \$310,000 \$, 100%)

2016-2021 **Natural Sciences and Engineering Research Council of Canada (NSERC)**
 Program: Discovery Grant
 Project: New approaches for the stereoselective synthesis of glycans of therapeutic interest
 (Principal investigator; \$125,000, 100%)

2016-2019 **INRS-Institut Armand-Frappier**
 Program: Starting Grant
 Project: Synthetic glycochemistry for therapeutic innovation
 (Principal investigator; ~\$100,000, 100%)

2016-2018 **Réseau québécois de recherche sur les médicaments (RQRM)**
 Program: Drug Discovery and Therapeutic Chemistry
 Project: Synthesis of iminosugar inhibitors of Kdo-processing enzymes as potential broad spectrum antibiotic agents against Gram-negative bacteria

(Principal investigator with Prof. Daniel Grenier, Université Laval; \$35,000 \$, 95%)

- 2016-2017 **Natural Sciences and Engineering Research Council of Canada (NSERC)**
 Program: Engage Grant for Universities
 Project: Sugar-based fiber-optic biosensors for the detection of *Escherichia coli* bacteria
 (Principal investigator; \$25,000, 100%)
- 2014-2018 **Canadian Institutes of Health Research (CIHR)**
 Program: Operating Grant
 Project: Pharmacomodulation of bioactive natural products by glycosylation
 (Collaborator; \$400,000, 5%)
- 2013-2014 **Canadian Institutes of Health Research (CIHR)**
 Program: Bridge Funding
 Project: Pharmacomodulation of bioactive natural products by glycosylation
 (Collaborator; \$100,000, 5%)
- 2012-2016 **Agence Nationale de la Recherche (ANR)**
 Program: Jeunes chercheuses jeunes chercheurs (JCJC)
 Project: Development of a glycoconjugate vaccine against melioidosis
 (Principal investigator; €200,000, 100%)
- 2012-2015 **Direction Générale de l'Armement (DGA)**
 Program: PhD Stipend
 Project: Development of a glycoconjugate vaccine against melioidosis
 (Principal investigator; €100,000, 100%)

HONORS, AWARDS & FELLOWSHIPS

- 2018-2020 **Fonds de recherche du Québec – Santé (FRQS) Research Scholars Junior 2**
- 2017 **New investigators in glycoscience** (highlighted in *Carbohydr. Res.* **2017**, 438, 65-66)
- 2015-2016 **Prime d'encadrement doctoral et de recherche, Conseil National des Universités**
 (PEDR, €5,000/year, top 10% researchers in France)
- 2013-2014 **Reduced teaching service**, University of Poitiers (10 000 €)
- 2011 **Senior Lecturer position at University of Cergy-Pontoise** (declined)
- 2010 **Natural Sciences and Engineering Research Council of Canada (NSERC) Industrial Research & Development Fellowship** (declined)
- 2010-2011 **Fonds de recherche du Québec – Nature et technologies Postdoctoral Fellowship**
- 2009-2010 **Bourse Émile-Roux Postdoctoral Fellowship**, Institut Pasteur, Paris
- 2009 **Vasant & Kusum Joshi Postdoctoral Fellowship**, Institut Pasteur, Paris
- 2009 **Fondation Canadienne Louis-Pasteur Postdoctoral Fellowship** (declined)
- 2008-2009 **Fondation de l'Université du Québec à Chicoutimi Doctoral Fellowship**
- 2007-2008 **Fonds de recherche du Québec – Nature et technologies Doctoral Fellowship**
- 2007-2008 **Fondation de l'Université du Québec à Chicoutimi Doctoral Fellowship** (declined)
- 2007 **Association Francophone pour le Savoir (ACFAS) Bernard-Belleau Award**

- 2007 **First Prize Science for Laymen, Université du Québec à Chicoutimi**
- 2006-2007 **Institutional Funding Program (PAIR-UQAC) Doctoral Fellowship**
- 2005-2006 **Abitibi-Consolidated MSc Fellowship**
- 2004-2005 **Gaston-L. Tremblay MSc Fellowship**
- 2004 **Work Abroad MSc Fellowship**
- 2000-2001 **Professors of Chemistry BSc Fellowship**
- 2000-2001 **Fondation du Royaume BSc Fellowship**
- 1999-2000 **Provigo-Loblaws BSc Fellowship**
- 1999 **First Prize Science for Laymen, CEGEP de St-Félicien (Québec), Canada**
- 1998 **Nominated for the Governor General's Academic Medal**

PEER REVIEWED PUBLICATIONS

***Principal investigator (Citations: 891; H-index: 14, *Google Scholar*)**

The names of the students I have supervised are underlined in the references.

2019

- *35. "Meloidosis patient serum-reactive synthetic tetrasaccharides bearing the predominant epitopes of *Burkholderia pseudomallei* and *Burkholderia mallei* O-antigens"
Cloutier, M.; Delar, E.; Muru, K.; Ndong, S.; Hoyeck, R. R.; Kaewarpai, T.; Chantratita, N.; Burtnick, M. N.; Brett, P. J.; **Gauthier, C.***
Organic & Biomolecular Chemistry **2019**, accepted manuscript (#OB-ART-08-2019-001711)
Invited contribution for the web themed issue on "Glycosylation: New methodologies for oligosaccharide and glycoconjugate synthesis and their applications"
- *34. "Structural determination of ananatoside A: an unprecedented 15-membered macrodilactone-containing glycolipid from *Pantoea ananatis*"
Gauthier, C.*; Lavoie, S.; Piochon, M.; Martinez, S.; Milot, S.; Déziel, E.*
Carbohydrate Research **2019**, 471, 13-18

2018

33. "Soft-enolization Baker-Venkataraman rearrangement enabled total synthesis of dirchromones and related 2-substituted chromones"
St-Gelais, A.; Alsarraf, J.; Legault, J.; **Gauthier, C.**; Pichette, A.
Organic Letters **2018**, 20, 7424-7428
- *32. "Polysaccharides from *Burkholderia* species as targets for vaccine development, immunomodulation and chemical synthesis"
Cloutier, M.; Muru, K.; Ravicoularamin, G.; **Gauthier, C.***
Natural Product Reports **2018**, 35, 1251-1293
Cover page of issue #35
31. "Bidesmosidic betulin saponin bearing L-rhamnopyranoside moieties induces apoptosis and inhibition of lung cancer cells growth *in vitro* and *in vivo*"
Mihoub, M.; Pichette, A.; Sylla, B.; **Gauthier, C.**; Legault, J.
PLoS ONE **2018**, 13, e0193386

2017

- *30. "Deciphering minimal antigenic epitopes associated with *Burkholderia pseudomallei* and *Burkholderia mallei* lipopolysaccharide O-antigens"
Tamigney Kenfack, M.; Mazur, M.; Nualnoi, T.; Shaffer, T. L.; Ngassimou, A.; Blériot, Y.; Marrot, J.; Marchetti, R.; Sintiprungrat, K.; Chantratita, N.; Silipo, A.; Molinaro, A.; AuCoin, D. P.; Burtneck, M. N.; Brett, P. J.; **Gauthier, C.***
Nature Communications **2017**, 8, 115
29. "Chemical composition and anti-herpes simplex virus type 1 (HSV-1) activity of extracts from *Cornus canadensis*"
Lavoie, S.; Côté, I.; Pichette, A.; **Gauthier, C.**; Ouellet, M.; Nagau-Lavoie, F.; Mshvildadze, V.; Legault, J.
BMC Complementary and Alternative Medicine **2017**, 17, 123

2016

- *28. "4'-Methoxyphenacyl-assisted synthesis of β -Kdo glycosides"
Mazur, M.; Barycza, B.; Andriamboavonjy, H.; Lavoie, S.; Tamigney Kenfack, M.; Laroussarie, A.; Blériot, Y.; **Gauthier, C.***
The Journal of Organic Chemistry **2016**, 81, 10585-10599
« **Featured article** » and cover page of issue #22
27. "Structure elucidation of anti-methicillin resistant *Staphylococcus aureus* (MRSA) flavonoids from balsam poplar buds"
Simard, F.; **Gauthier, C.**; Legault, J.; Lavoie, S.; Mshvildadze, V.; Pichette, A.
Bioorganic & Medicinal Chemistry **2016**, 24, 4188-4198
26. "Complete ¹H and ¹³C NMR assignments of a series of pergalloylated tannins"
Lavoie, S.; Ouellet, M.; Fleury, P.-Y.; **Gauthier, C.**; Legault, J.; Pichette, A.
Magnetic Resonance in Chemistry **2016**, 54, 168-174

2015

25. "DFT calculations and ROESY NMR data for the diastereochemical characterization of cytotoxic tetraterpenoids from the oleoresin of *Abies balsamea*"
Lavoie, S.†; **Gauthier, C.†**; Mshvildadze, V.; Legault, J.; Roger, B.; Pichette, A. (†Equal contribution)
Journal of Natural Products **2015**, 78, 2896-2907
- *24. "Synthesis of the tetrasaccharide repeating unit of the β -Kdo-containing exopolysaccharide from *Burkholderia pseudomallei* and *B. cepacia* complex"
Laroussarie, A.; Barycza, B.; Andriamboavonjy, H.; Tamigney Kenfack, M.; Blériot, Y.; **Gauthier, C.***
The Journal of Organic Chemistry **2015**, 80, 10386-10396
23. "*Burkholderia pseudomallei* capsular polysaccharide recognition by a monoclonal antibody reveals key details toward a biodefense vaccine and diagnostics against melioidosis"
Marchetti, R.; Dillon, M. J.; Burtneck, M. N.; Hubbard, M. A.; Tamigney Kenfack, M.; Blériot, Y.; **Gauthier, C.**; Brett, P. J.; AuCoin, D. P.; Lanzetta, R.; Silipo, A.; Molinaro, A.
ACS Chemical Biology **2015**, 10, 2295-2302
22. "Antibacterial balsacones J-M, hydroxycinnamoylated dihydrochalcones from *Populus balsamifera* buds"
Simard, F.; **Gauthier, C.**; Chiasson, E.; Lavoie, S.; Mshvildadze, V.; Legault, J.; Pichette, A.
Journal of Natural Products **2015**, 78, 1147-1153

2014

21. "Synthesis of 1,2-*trans*-2-acetamido-2-deoxy-homoiminosugars"

- Blériot, Y.; Tran, A. T.; Prencipe, G.; Jagadeesh, Y.; Auburger, N.; Zhu, S.; **Gauthier, C.**; Zhang, Y.; Désiré, J.; Adachi, I.; Kato, A.; Sollogoub, M.
Organic Letters **2014**, *16*, 5516-5519
20. "Synthesis of 1,2-*cis* homoiminosugars derived from GlcNAc and GalNAc exploiting a β -aminoalcohol skeletal rearrangement"
Blériot, Y.; Auburger, N.; Jagadeesh, Y.; **Gauthier, C.**; Prencipe, G.; Tran, A. T.; Marrot, J.; Désiré, J.; Yamamoto, A.; Kato, A.; Sollogoub, M.
Organic Letters **2014**, *16*, 5512-5515
19. "Isolation of a new disaccharide nucleoside from *Helleborus caucasicus*: structure elucidation and total synthesis of hellecaucaside A and its β -anomer"
Sylla, B.†; **Gauthier, C.†**; Legault, J.; Fleury, P.-Y.; Lavoie, S.; Mshvildadze, V.; Muzashvili, T.; Kemertelidze, E.; Pichette, A. (†Equal contribution)
Carbohydrate Research **2014**, *398*, 80-89
18. "Non-stoichiometric O-acetylation of *Shigella flexneri* 2a O-specific polysaccharide: synthesis and antigenicity"
Gauthier, C.; Chassagne, P.; Theillet, F.-X.; Guerreiro, C.; Thouron, F.; Nato, F.; Delepierre, M.; Sansonetti, P. J.; Phalipon, A.; Mulard, L. A.
Organic & Biomolecular Chemistry **2014**, *12*, 4218-4232
- *17. "Intramolecular aglycon delivery enables the synthesis of 6-deoxy- β -D-manno-heptosides as fragments of *Burkholderia pseudomallei* and *Burkholderia mallei* capsular polysaccharide."
Tamigney Kenfack, M.; Blériot, Y.; **Gauthier, C.***
The Journal of Organic Chemistry **2014**, *79*, 4615-4634

2013

16. "Lanostane- and cycloartane-type triterpenoids from *Abies balsamea* oleoresin"
Lavoie, S.†; **Gauthier, C.†**; Legault, J.; Mshvildadze, V.; Pichette, A. (*Equal contribution)
Beilstein Journal of Organic Chemistry **2013**, *9*, 1333-1339
15. "Structural studies of the O-acetyl containing O-antigen from a *Shigella flexneri* serotype 6 and synthesis of oligosaccharide fragments thereof"
Chassagne, P.; Fontana, C.; Guerreiro, C.; **Gauthier, C.**; Phalipon, A.; Widmalm, G.; Mulard, L. A.
European Journal of Organic Chemistry **2013**, 4085-4106

2012

14. "Synthesis and cytotoxicity of lupane-type triterpenoid glyceryl esters"
Thibeault, D.†; **Gauthier, C.†**; Legault, J.; Bouchard, J.; Gagné, L.; Pichette, A. (*Equal contribution)
Bioorganic & Medicinal Chemistry Letters **2012**, *22*, 4735-4739
13. "Abibalsamins A and B, two new tetraterpenoids from *Abies balsamea* oleoresin"
Lavoie, S.; Legault, J.; **Gauthier, C.**; Mshvildadze, V.; Mercier, S.; Pichette, A.
Organic Letters **2012**, *14*, 1504-1507

2011

- *12. "Advances in the synthesis and pharmacological activity of lupane-type triterpenoid saponins"
Gauthier, C.*; Legault, J.; Piochon-Gauthier, M.; Pichette, A.
Phytochemistry Reviews **2011**, *10*, 521-544
Invited contribution for the special issue: "New Trends in Saponins"

2010

11. "Acid-catalyzed E-ring expansion and isomerization of 3-acetylbetulin: synthesis of cytotoxic anhydrobetulin saponins"

Thibeault, D.; Legault, J.; **Gauthier, C.**; Lavoie, S.; Bouchard, J.; Pichette, A.
Synthetic Communications **2010**, *40*, 213-221

2009

10. "Recent progress in the synthesis of naturally occurring triterpenoid saponins"
Gauthier, C.; Legault, J.; Pichette, A.
Mini-Reviews in Organic Chemistry **2009**, *6*, 321-344
9. "Synthesis, cytotoxicity, and haemolytic activity of chacotrioside lupane-type neosaponins and their germanicane-type rearrangement products"
Gauthier, C.; Legault, J.; Piochon, M.; Lavoie, S.; Tremblay, S.; Pichette, A.
Bioorganic & Medicinal Chemistry Letters **2009**, *19*, 2310-2314
8. "Haemolytic activity, cytotoxicity and membrane cell permeabilization of semi-synthetic and natural lupane- and oleanane-type saponins"
Gauthier, C.; Legault, J.; Girard-Lalancette, K.; Mshvildadze, V.; Pichette, A.
Bioorganic & Medicinal Chemistry **2009**, *17*, 2002-2008
7. "Synthesis and cytotoxicity of bidesmosidic betulin and betulinic acid saponins"
Gauthier, C.; Legault, J.; Lavoie, S.; Rondeau, S.; Tremblay, S.; Pichette, A.
Journal of Natural Products **2009**, *72*, 72-81
6. "Synthesis of betulinic acid acyl glucuronide for application in anticancer prodrug monotherapy"
Gauthier, C.; Legault, J.; Rondeau, S.; Pichette, A.
Tetrahedron Letters **2009**, *50*, 988-991
5. "Synthesis and cytotoxicity evaluation of natural α -bisabolol β -D-fucopyranoside and analogues"
Piochon, M.; Legault, J.; **Gauthier, C.**; Pichette, A.
Phytochemistry **2009**, *70*, 228-236

2008

4. "Synthesis of two natural betulinic acid saponins containing α -L-rhamnopyranosyl-(1 $\rightarrow$ 2)- α -L-arabinopyranose and their analogues"
Gauthier, C.; Legault, J.; Lavoie, S.; Rondeau, S.; Tremblay, S.; Pichette, A.
Tetrahedron **2008**, *64*, 7386-7399

2007

3. "Synthesis and structure-activity relationships study of cytotoxic germanicane- and lupane-type 3 β -O-monodesmosidic saponins starting from betulin"
Thibeault, D.[†]; **Gauthier, C.**[†]; Legault, J.; Bouchard, J.; Dufour, P.; Pichette, A. ([†]Equal contribution)
Bioorganic & Medicinal Chemistry **2007**, *15*, 6144-6157
2. "Anticancer diarylheptanoid glycosides from the inner bark of *Betula papyrifera*"
Mshvildadze, V.; Legault, J.; Lavoie, S.; **Gauthier, C.**; Pichette, A.
Phytochemistry **2007**, *68*, 2531-2536

2006

1. "Glycosidation of lupane-type triterpenoids as potent *in vitro* cytotoxic agents"
Gauthier, C.; Legault, J.; Lebrun, M.; Dufour, P.; Pichette, A.
Bioorganic & Medicinal Chemistry **2006**, *14*, 6713-6725

BOOK CHAPTERS

- *4. "3-Deoxy-D-manno-oct-2-ulosonic acid (Kdo) derivatives in antibacterial drug discovery"

Ravicoularamin, G.; Gamboa Marin, O. I.; Delar, E.; Cloutier, M.; Muru, K.; **Gauthier, C.***
Carbohydrates in Drug Discovery & Development **2019**, Elsevier, Editor: V. K. Tiwari
Invited contribution

3. "Click approach to lipoic acid glycoconjugates"
 Tremblay, T.; Carpentier, A.; **Gauthier, C.**, Giguère, D.
Carbohydrate Chemistry: Proven Synthetic Methods **2019**, vol. 5, CRC Press, editor: P. Kovac
Invited contribution
- *2. "Synthesis of oligosaccharides related to potential bioterrorist pathogens"
Cloutier, M.; Muru, K.; **Gauthier, C.***
Recent Trends in Carbohydrate Chemistry: Biomedical and Material Science Applications, 1st edition, Ed.:
 Rauter, A. P.; Christensen, B.; Somsak, L.; Kosma, P.; Adamo, R.; Elsevier, 400 pp, **2019**
Invited contribution
1. "Conformationally restricted glycoside derivatives as mechanistic probes and/or inhibitors of sugar processing enzymes"
 Maaliki, C.; **Gauthier, C.**; Massinon, O.; Sagar, R.; Vincent, S.; Blériot, Y.
RSC Specialist Periodical Reports – Carbohydrate Chemistry **2014**, 40, 418-444
Invited contribution for special issue in the memory of Prof. André Lubineau

CONFERENCE PROCEEDINGS

- *3. "Synthetic O-antigens related to pathogenic *Burkholderia* species enable to decipher the minimal binding epitopes"
Tamigney Kenfack, M.; Mazur, M.; Nualnoi, T.; Marchetti, R.; Silipo, A.; Molinaro, A.; AuCoin, D. P.; Burtnick, M. N.; Brett, P. J.; **Gauthier, C.***
Abstracts of Papers, 29th International Carbohydrate Symposium, July 14–19 **2018**, Lisbon, Portugal
- *2. "Phenacyl ester-assisted preparation of β-Kdo glycosides: application to synthesis of the biological repeating unit of *Burkholderia pseudomallei* exopolysaccharide"
Gauthier, C.*; Mazur, M.; Barycza, B.; Laroussarie, A.; Blériot, Y.
Abstracts of Papers, 28th International Carbohydrate Symposium, July 17–21 **2016**, ICS-55
1. "Synthetic and immunochemical investigations on a set of *Shigella flexneri* 2a O-acetylated deca-saccharides."
Gauthier, C.; Chassagne, P.; Guerreiro, C.; Thouron, F.; Nato, F.; Phalipon, A.; Mulard, L. A.
Abstracts of Papers, 241st ACS National Meeting & Exposition, March 27–31 **2011**, CARB-136

PATENTS

4. "Tetrasaccharides for diagnosis, prevention, and treatment of melioidosis and glanders"
Gauthier, C.; Cloutier, M.
USPTO application **2019**, 62/857,346, 71 pp.
3. "Novel O-acetylated deca-saccharides"
 Mulard, L. A.; **Gauthier, C.**
European Patent Application **2011**, EP-2386563A1, 70 pp.
2. "Bidesmosidic betulin and betulinic acid saponins and uses thereof as antitumor agents"
 Pichette, A.; Legault, J.; **Gauthier, C.**
PCT International Patent Application **2010**, WO-2010028487, 93 pp.
1. "Synthesis of triterpene derivatives as antitumor or anti-inflammatory agents"
 Pichette, A.; Legault, J.; **Gauthier, C.**
Canadian & USA Patent Application **2008**, CA-2,586,614 & US-11/924,789, 73 pp.

OTHER PUBLICATIONS

4. "Amélioration du comportement biopharmaceutique de triterpènes naturels anticancéreux par synthèse de saponines mono- et bidesmosidiques"
Gauthier, C. PhD Thesis, Université du Québec Network, **2008**, 307 pp.
3. "Glycosidation de triterpènes pentacycliques de type lupane et évaluation *in vitro* de leur potentiel anticancéreux"
Gauthier, C. MSc Thesis, Université du Québec à Chicoutimi, **2006**, 219 pp.
2. "Baisse des réserves de pétrole : les Québécois agiront-ils à temps ?"
Ben Mokhtar, I.; **Gauthier, C.**; Grenier, P.; Guay, J.-F.; Lajoie, F.; Lupu, C.; Not, C.; Plante, B.; Plouhinec, J.-B.; Thibodeau, B.; Trépanier, S.; Vincent, M.; Yilmaz, E. (collectif)
Libre Opinion – Le Devoir, 29 juin **2006**.
1. "La société des fourmis"
Gauthier, C.; Dufour, D.
Cyber Expo-Journal, Département des Sciences de la Nature, Cégep de St-Félicien, **2000**, 11 pp.

INVITED CONFERENCES

2019

21. "Synthèse d'inhibiteurs ciblant la biosynthèse de polysaccharides en tant qu'alternative potentielle aux antibiotiques"
Le programme bilatéral FRQ/FRS-FNRS, l'excellence scientifique, 25 septembre **2019**, Bruxelles, Belgique

2018

20. "Lupane saponins and macrodilactone-containing glycolipids as potential immunomodulatory agents"
National Research Council Canada (NRC), December 13, **2018**, Ottawa (Ontario), Canada
19. "New synthetic approaches in carbohydrate chemistry"
INRS-EMT, November 27, **2018**, Varennes (Québec), Canada
18. "Are Kdo-processing enzymes underexploited antibiotic targets?"
14th Organic and Bioorganic Workshop for Leading Young Canadian Chemists, May 24–27 **2018**, Edmonton (Alberta), Canada
17. "La chimie des sucres au service de l'innovation thérapeutique"
Collège Jean-de-Brébeuf, April 5 **2018**, Montréal (Québec), Canada

2017

16. "New synthetic approaches in carbohydrate chemistry: towards a glycoconjugate vaccine against melioidosis"
National Research Council Canada (NRC), November 29 **2017**, Ottawa (Ontario), Canada
15. "Synthetic glycochemistry enables the development of therapeutic agents and vaccines"
Symposium de partenariats académiques/industriels – Academic/industry partnerships symposium (SPAI – AIPS), October 4 **2017**, Laval (Québec), Canada
14. "Nouvelles approches synthétiques en chimie des sucres : en route vers un vaccin contre la mélioiïdose"
Département de Chimie, Université Laval, October 2 **2017**, Quebec City (Québec), Canada
13. "Are Kdo-processing enzymes underexploited antibiotic targets?"

7^e édition du Colloque annuel du Réseau québécois de recherche sur les médicaments, October 1st **2017**, Quebec City (Québec), Canada

12. "Nouvelles approches synthétiques en chimie des sucres : en route vers un vaccin contre la mélioïdose"
7^e colloque Pharmaqam, August 31 **2017**, Montréal (Québec), Canada

2016

11. "Nouvelles approches synthétiques en chimie des sucres : en route vers un vaccin contre la mélioïdose"
Département de Chimie, Université du Québec à Montréal, October 12 **2016**, Montréal (Québec), Canada
10. "Nouvelles approches synthétiques en chimie des sucres : en route vers un vaccin contre la mélioïdose"
Département des Sciences Fondamentales, Université du Québec à Chicoutimi, October 7 **2016**, Saguenay (Québec), Canada
9. "En route vers un vaccin glycoconjugué semi-synthétique contre la mélioïdose"
Institut de Chimie des Substances Naturelles (ICSN), January 28 **2016**, Gif-sur-Yvette, France

2009-2015

8. "La glycochimie organique au service de l'innovation thérapeutique"
INRS-Institut Armand-Frappier, January 29 **2015**, Laval (Québec), Canada
7. "Développement d'un vaccin glycoconjugué contre la mélioïdose"
Revue mi-parcours de l'Agence Nationale de la Recherche (ANR), November 27 **2014**, Rennes, France
6. "Vaccin 'sucré' contre la mélioïdose, une maladie tropicale à potentiel bioterroriste"
3^e Journée Scientifique de l'Institut de Chimie des Milieux et Matériaux de Poitiers, November 7 **2014**, Poitiers, France
5. "Développement d'un vaccin glycoconjugué semi-synthétique contre la mélioïdose"
2^e Séminaire du Département de Microbiologie de l'Institut de Recherche Biomédicale des Armées (IRBA), October 16 **2012**, Paris, France
4. "Synthèse d'oligosaccharides conjugués à visée vaccinale"
Département des Sciences Fondamentales, Université du Québec à Chicoutimi, August 14 **2012**, Saguenay (Québec), Canada
3. "Développement d'un vaccin glycoconjugué semi-synthétique contre la mélioïdose"
Institut de Recherche Biomédicale des Armées (IRBA), December 21 **2011**, Grenoble, France
2. "Synthèse de molécules glycosylées à visée thérapeutique : saponines triterpéniques et décasaccharides acétylés"
Centre Interdisciplinaire des Nanosciences de Marseille (CINAM), July 15 **2010**, Marseille, France
1. "Les écorces de bouleau contre le cancer ? Glycosylation de triterpènes naturels cytotoxiques"
Département de Biologie Structurale et Chimie, Institut Pasteur, June 30 **2009**, Paris, France

ORAL COMMUNICATIONS

***Principal investigator.**

The names of the students I have supervised are underlined in the references.

- *23. "*Burkholderia pseudomallei* and *Burkholderia mallei* synthetic lipopolysaccharide mimics as potential vaccine candidates"
Cloutier, M.; Delar, E.; Muru, K.; **Gauthier, C.***
20th European Carbohydrate Symposium, June 30 to July 4 **2019**, Leiden, Netherlands.

- *22. "Stereoselective synthesis of β -Kdo glycosides: application towards vaccines and therapeutics against pathogenic *Burkholderia* species"
Gauthier, C.*
 102nd Canadian Chemistry Conference and Exhibition (CCCE2019), June 3–7 **2019**, Québec, Canada.
- *21. "*Burkholderia pseudomallei* and *Burkholderia mallei* synthetic lipopolysaccharide mimics as potential vaccine candidates"
Cloutier, M.; Delar, E.; Ndong, S.; Hoyeck, R. R.; Muru, K.; **Gauthier, C.***
 102nd Canadian Chemistry Conference and Exhibition (CCCE2019), June 3–7 **2019**, Québec, Canada.
- *20. "*Burkholderia pseudomallei* and *Burkholderia mallei* synthetic lipopolysaccharide mimics as potential vaccine candidates"
Cloutier, M.; Delar, E.; Ndong, S.; Hoyeck, R. R.; Muru, K.; **Gauthier, C.***
 21st Chemistry and Biochemistry Graduate Research Conference, November 9 **2018**, Montréal, Canada
- *19. "Synthetic O-antigens related to pathogenic *Burkholderia* species enable to decipher the minimal binding epitopes"
Tamigney Kenfack, M.; Mazur, M.; Nualnoi, T.; Marchetti, R.; Silipo, A.; Molinaro, A.; AuCoin, D. P.; Burtnick, M. N.; Brett, P. J.; **Gauthier, C.***
 29th International Carbohydrate Symposium, July 14–19 **2018**, Lisbon, Portugal
- *18. "Development of a glycoconjugate vaccine against melioidosis and glanders"
 Tamigney Kenfack, M.; Blériot, Y.; **Gauthier, C.***
 27^{èmes} Journées du Groupe Français des Glycosciences, May 21–25 **2018**, Nouan le Fuzelier, France
 (Bernard Fournet-André Verbert Award)
- *17. "Phenacyl-ester assisted preparation of β -Kdo glycosides: application to synthesis of the biological repeating unit of *Burkholderia pseudomallei* exopolysaccharide"
Gauthier, C.*; Mazur, M.; Barycza, B.; Laroussarie, A.; Blériot, Y.
 28th International Carbohydrate Symposium, July 17–21 **2016**, New Orleans, United States
16. "Diastereoisomeric tetraterpenes from *Abies balsamea* oleoresin"
Lavoie, S.; **Gauthier, C.**; Mshvildadze, V.; Legault, J.; Roger, B.; Pichette, A.
 Workshop – Magnetic Resonance at Georgia Tech 2015, December 15 **2015**, Atlanta, United States
15. "Synthesis of original iminosugars derived from GlcNAc and GalNAc targeting NAGLU and NAGAL glycosidases"
 Blériot, Y.; Jagadeesh, Y.; **Gauthier, C.**; Tran, A. T.; Désiré, J.; Boraston, A. ; Metcalf, M. C.; Garman, S. C.; Sollogoub, M.
 18th European Carbohydrate Symposium, August 2–6 **2015**, Moscow, Russia
- *14. "Synthesis of 6-deoxy- β -D-manno-heptosides via intramolecular aglycon delivery: towards a biodefense vaccine against melioidosis and glanders"
Tamigney Kenfack, M.; Blériot, Y.; **Gauthier, C.***
 European Cooperation in Science and Technology (COST) - Training School MultiGlycoNano, April 9–11 **2015**, Bangor, United Kingdom
- *13. "Synthèse de 6-désoxy- β -D-manno-heptosides par glycosylation intramoléculaire : vers un vaccin de biodéfense contre la mélioiïdose"
Tamigney Kenfack M.; Blériot, Y.; **Gauthier, C.* (1st prize)**
 9^e Symposium de Chimie Organique en Centre – Auvergne – Limousin (Sycocal9), September 17–19 **2014**, Tours, France
12. "Diastereoisomeric tetraterpenes from *Abies balsamea* oleoresin"
Lavoie, S.; **Gauthier, C.**; Legault, J.; Mshvildadze, V.; Pichette, A.
 Trends in Natural Products Research, June 23–25 **2014**, Olomouc, Czech Republic
- *11. "Synthèse de 6-désoxy- β -D-manno-heptosides par glycosylation intramoléculaire : vers un vaccin de biodéfense contre la mélioiïdose et la morve"

- Gauthier, C.*; Tamigney Kenfack, M.**; Blériot, Y.
25^e Journées du Groupe Français des Glycosciences, May 12–15 **2014**, Paris, France
- *10. "Synthesis of 6-deoxy- β -D-manno-heptosides via intramolecular aglycon delivery: towards a biodefense vaccine against melioidosis and glanders"
Gauthier, C.*; Tamigney Kenfack, M.; Blériot, Y.
27th International Carbohydrate Symposium, January 12–17 **2014**, Bangalore, India
9. "Access to complex iminosugars of biological interest by skeletal rearrangement"
 Blériot, Y.; Mondon, M.; Fontelle, N.; Désiré, J.; **Gauthier, C.**
17th European Carbohydrate Symposium, July 1–11 **2013**, Tel-Aviv, Israel
8. "On the road to a synthetic carbohydrate-based vaccine against endemic shigellosis"
Gauthier, C.; Kim, T. H.; Chassagne, P.; Thouron, F.; Guerreiro, C.; Theillet, F.-X.; Delepierre, M.; Sansonetti, P. J.; Phalipon, A.; Mulard, L. A.
6th International Conference on Vaccines for Enteric Diseases, September 16 **2011**, Cannes, France
7. "Input of non-stoichiometric O-acetylation on antigenicity: *Shigella flexneri* 2a LPS as an example"
Gauthier, C.; Chassagne, P.; Thouron, F.; Guerreiro, C.; Theillet, F.-X.; Nato, F.; Delepierre, M.; Phalipon, A.; Mulard, L. A.
16th European Carbohydrate Symposium, July 7 **2011**, Sorrento, Italy
6. "Synthetic and immunochemical investigations on a set of *Shigella flexneri* 2a O-acetylated decasaccharides"
Gauthier, C.; Chassagne, P.; Guerreiro, C.; Thouron, F.; Nato, F.; Phalipon, A.; Mulard, L. A.
241st ACS National Meeting, March 27–31 **2011**, Anaheim, United States
5. "Développement d'agents anticancéreux à partir de l'huile essentielle de peuplier baumier"
Piochon, M.; **Gauthier, C.**; Legault, J.; Pichette, A.
1^{ère} Rencontre des Chercheurs de la Maison des Étudiants Canadiens, March 8 **2009**, Paris, France
4. "Développement d'agents anticancéreux à partir de l'huile essentielle de peuplier baumier"
 Pichette, A.; Piochon, M.; **Gauthier, C.**; Legault, J.
10^e Symposium International d'Aromathérapie & Plantes Médicinales, April 12 **2008**, Grasse, France
3. "Synthèse et relations structure-activité anticancéreuse de saponines triterpéniques"
Gauthier, C.; Thibeault, D.; Legault, J.; Pichette, A.
75^e Congrès de l'Association Francophone pour le Savoir, May 10 **2007**, Trois-Rivières, Canada
2. "La chimie verte au secours de l'environnement"
Gauthier, C.
2^e Séminaire en Ressources Renouvelables, October 20 **2006**, Saguenay, Canada
1. "Le rôle des glycosides dans la nature"
Gauthier, C.
Congrès CEPROCQ-LASEVE, January 29 **2004**, Ville de Québec (Québec), Canada

POSTERS

*Principal investigator.

The names of the students I have supervised are underlined in the references.

- *23. "En route to agminoside synthesis, natural and polyacetylated glycolipids"
Muru, K.; Di Cintio, S.; Provost-Savard, A.; **Gauthier, C.***
102nd Canadian Chemistry Conference and Exhibition (CCCE2019), June 3-7 **2019**, Québec City, Canada.
- *22. "Synthesis of siderophore conjugates as potential inhibitors of Kdo-processing enzymes"
Ravicoularamin, G.; Gamboa Marin, O. J.; **Gauthier, C.***

- 102nd Canadian Chemistry Conference and Exhibition (CCCE2019), June 3-7 **2019**, Québec City, Canada.
- *21. "Total synthesis of natural anthocyanins and anthocyanidins as potential compounds for the prevention or treatment of cognitive decline in Alzheimer's disease"
Delar, E.; Ramassamy, C.; **Gauthier, C.***
2^e Journée de Recherche en Toxicologie et Pharmacologie, May 22 **2019**, Laval, Canada.
- *20. "Synthèse de dérivés iminosucres du Kdo comme agents antibactériens potentiels contre *Burkholderia pseudomallei*"
Gamboa Marin, O. I.; Ravicoularamin, G.; Ameur, N.; Gormand, P.; **Gauthier, C.***
1^{er} Colloque du CERMO-FC, May 17 **2019**, Montréal Canada.
19. "Bacterial social networking via outer-membrane extrusion"
Ramirez, E.; Ravicoularamin, G.; **Gauthier, C.**; Islam, S. T.
4^e Congrès de Bactériologie intégrative, March 27-28 **2019**, Laval, Canada.
- *18. "Synthesis of *Burkholderia pseudomallei* and *Burkholderia mallei* lipopolysaccharide mimics as potential vaccines against melioidosis and glanders"
Cloutier, M.; Delar, E.; Ndong, S.; Hoyeck, R. R.; Muru, K.; **Gauthier, C.***
Quebec-Ontario Mini-Symposium for Synthetic and Bioorganic Chemistry, November 16-18 **2018**, Toronto, Canada.
- *17. "Synthesis of potential inhibitors of bacterial Kdo-processing enzymes"
Ravicoularamin, G.; Gamboa Marin, O. I.; Ameur, N.; Shrestha, G.; Gormand, P.; **Gauthier, C.***
21st Chemistry and Biochemistry Graduate Research Conference, November 9 **2018**, Montréal, Canada
- *16. "En route to agminosides synthesis, natural and polyacetylated glycolipids"
Muru, K.; Di Cintio, S.; Provost-Savard, A.; **Gauthier, C.***
21st Chemistry and Biochemistry Graduate Research Conference, November 9 **2018**, Montréal, Canada
- *15. "Synthesis of potential inhibitors of bacterial Kdo-processing enzymes"
Ravicoularamin, G.; Gamboa Marin, O. I.; Ameur, N.; Shrestha, G.; Gormand, P.; **Gauthier, C.***
8^e édition du Colloque annuel du Réseau québécois de recherche sur les médicaments (RQRM), October 19-20 **2018**, Montréal (Québec), Canada
- *14. "En route vers la synthèse des agminosides, glycolipides naturels polyacétylés"
Muru, K.; Di Cintio, S.; Provost-Savard, A.; **Gauthier, C.***
8^e édition du Colloque annuel du Réseau québécois de recherche sur les médicaments (RQRM), October 19-20 **2018**, Montréal (Québec), Canada
- *13. "Synthèse de mimes du lipopolysaccharide de *Burkholderia pseudomallei* comme vaccins potentiels contre la mélioïdose"
Cloutier, M.; Delar, E.; Ndong, S.; Hoyeck, R. R.; Muru, K.; **Gauthier, C.***
8^e édition du Colloque annuel du Réseau québécois de recherche sur les médicaments (RQRM), October 19-20 **2018**, Montréal (Québec), Canada
- *12. Synthèse totale de glycolipides d'origine marine d'intérêt biologique"
Muru, K.; **Gauthier, C.***
Symposium Biomed-Pharmaqam, May 10-11 **2018**, Saint-Gabriel (Québec), Canada
- *11. "Synthèse totale de glycolipides d'origine marine d'intérêt biologique"
Muru, K.; **Gauthier, C.***
10^e édition du Congrès Armand-Frappier, November 10 **2017**, Orford (Québec), Canada
- *10. "Synthesis of the repeating unit of the β -Kdo-containing exopolysaccharide from pathogenic *Burkholderia* species"
Laroussarie, A.; Barycza, B.; **Gauthier, C.***
Glycosyl Cation Day, December 14 **2015**, Poitiers, France

- *9. "Synthesis of 6-deoxy- β -D-manno-heptosides via intramolecular aglycon delivery: towards a biodefense vaccine against melioidosis and glanders"
Tamigney Kenfack, M.; Blériot, Y.; **Gauthier, C.***
Glycosyl Cation Day, December 14 **2015**, Poitiers, France
- *8. "Synthesis of 6-deoxy- β -D-manno-heptosides via intramolecular aglycon delivery: towards a biodefense vaccine against melioidosis and glanders"
Tamigney Kenfack, M.; Blériot, Y.; **Gauthier, C.***
European Cooperation in Science and Technology (COST) - Training School MultiGlycoNano, April 9–11 **2015**, Bangor, United Kingdom
- *7. "Synthèse de 6-désoxy- α -L-talopyranosyl-(1 $\rightarrow$ 3)- β -D-glucopyranosides diversement acétylés et méthylés représentatifs de l'Ag-O du LPS des bactéries du genre *Burkholderia*"
Tamigney Kenfack, M.; Blériot, Y.; **Gauthier, C.***
25^e Journées du Groupe Français des Glycosciences, May 12–15 **2014**, Paris, France
- 6. "Synthesis of 2-acetamido-2-deoxy- α -homogalactonojirimycin (HGJNAc) as a potent inhibitor of α -N-acetylglactosaminidases"
Gauthier, C.; Blériot, Y.
27th International Carbohydrate Symposium, January 12–17 **2014**, Bangalore, India
- 5. "Highly convergent synthesis of three mono- and di-O-acetylated deca-saccharides as mimics of the *Shigella flexneri* serotype 2a Ag-O"
Gauthier, C.; Chassagne, P.; Guerreiro, C.; Mulard, L. A.
16th European Carbohydrate Symposium, July 7 **2011**, Sorrento, Italy
- 4. "From LPS antigens to synthetic oligosaccharide-based conjugates as potential vaccines against bacillary dysentery"
Chassagne, P.; **Gauthier, C.**; Nato, F.; Phalipon, A.; Mulard, L. A.
11th Summer Course on Glycosciences, May 17–20 **2017**, Wageningen, Netherlands
- 3. "Synthesis of lupane-type triterpenoid saponins as non-haemolytic anticancer agents"
Gauthier, C.; Legault, J.; Pichette, A.
4th International Symposium on Saponins, July 8–11 **2009**, Nancy, France
- 2. "Synthesis of lupane-type triterpenoid saponins as non-haemolytic anticancer agents"
Gauthier, C.; Legault, J.; Pichette, A.
10th Tetrahedron Symposium, June 23–26 **2009**, Paris, France
- 1. "Synthèse et relations structure-activité anticancéreuse de saponines triterpéniques"
Gauthier, C.; Dufour, D.; Legault, J.; Pichette, A. (vulgarisation scientifique)
75^e Congrès de l'Association Francophone pour le Savoir, May 10 **2007**, Trois-Rivières, Canada.

STUDENT & RESEARCH STAFF MENTORING

- 2019-present **Samar Hadj Amor** (MSc student)
(**MITACS and Fondation Armand-Frappier Scholarships**)
INRS-Institut Armand-Frappier (principal supervisor)
Project: Polysaccharides from *Burkholderia* spp.
- 2019-present **Oscar Javier Gamboa Marín** (MSc student)
(**CERMO-FC/NSERC/FRQNT/Desjardins & Fondation Armand-Frappier Scholarships**)
INRS-Institut Armand-Frappier (principal supervisor)
Project: Synthesis of Kdo glycosyltransferase inhibitors
- 2019-present **Emmanilo Delar** (PhD student)
INRS-Institut Armand-Frappier (principal supervisor)
Project: Synthesis and biological evaluation of anthocyanins

- 2018-present **Maude Cloutier*** (MSc student/direct transfer to PhD)
NSERC/FRQNT and Fondation Armand-Frappier Scholarships)
***Cercle d'excellence de l'Université du Québec** (August 2019)
***Prix Relève étoile Louis-Berlinguet, FRQNT** (October 2018)
 INRS-Institut Armand-Frappier (principal supervisor)
 Project: Synthesis of *Burkholderia pseudomallei* LPS mimics
- 2017-present **Gokulakrishnan Ravicoularamin** (MSc student)
 INRS-Institut Armand-Frappier (principal supervisor)
 Project: Synthesis of Kdo glycosyltransferase inhibitors
- 2017-present **Kevin Muru** (PhD student)
 INRS-Institut Armand-Frappier (principal supervisor)
 Project: Total synthesis of natural glycolipids
- 2014-present **Alexis St-Gelais** (PhD student)
(NSERC Scholarship)
 Université du Québec à Chicoutimi (co-direction with Prof. André Pichette)
 Project: Synthesis and isolation of natural tannins
- 2019 **Marie-Joëlle Prévost** (Summer research trainee)
(NSERC Scholarship)
 Université du Québec à Trois-Rivières (principal supervisor)
 Project: Total synthesis of ananatoside A and its derivatives
- 2019 **Shawn Tripodi** (Research trainee)
 SIGMA Clermont, France (principal supervisor)
 Project: Synthesis of desferrioxamine conjugates
- 2019 **Armand Caulet** (Research trainee)
 ESCOM, Compiègne, France (principal supervisor)
 Project: To be determined
- 2019 **Océane Burton** (Master 1 research trainee)
 Université Clermont-Auvergne, France (principal supervisor)
 Project: Synthesis of marine glycolipids
- 2018 **Paul Gormand** (MSc research trainee)
 Université du Québec à Chicoutimi (principal supervisor)
 Project: Synthesis of Kdo glycosyltransferase inhibitors
- 2018 **Oscar Javier Gamboa Marín** (Summer research trainee)
(NSERC Scholarship)
 University of Montreal (principal supervisor)
 Project: Synthesis of Kdo glycosyltransferase inhibitors
- 2018 **Sabrina Di Cintio** (Summer research trainee)
 University Laval (principal supervisor)
 Project: Total synthesis of natural glycolipids
- 2018 **Gayetri Shrestha** (Summer research trainee)
 Dawson College (principal supervisor)
 Project: Synthesis of Kdo glycosyltransferase inhibitors
- 2018 **Emmanilo Delar** (Master 2 research trainee)
 University of La Rochelle (principal supervisor)
 Project: Synthesis of *Burkholderia pseudomallei* LPS mimics

- 2017-2018 **Seynabou Ndong** (Research trainee)
INRS-Institut Armand-Frappier (principal supervisor)
Project: Synthesis of *Burkholderia pseudomallei* LPS mimics
Current position: nd
- 2017 **Robert R. Hoyeck** (Summer research trainee)
(NSERC Scholarship)
University of Ottawa (principal supervisor)
Project: Synthesis of *Burkholderia pseudomallei* LPS mimics
Current position: Medical student, McGill University, Montréal (Québec), Canada
- 2017 **Arianne Provost-Savard** (Summer research trainee)
(NSERC Scholarship)
École polytechnique de Montréal (principal supervisor)
Project: Total synthesis of natural glycolipids
Current position: Engineer student, École Polytechnique, Montréal (Québec), Canada
- 2017 **Nassima Ameur** (Master 2 research trainee)
Université de Caen (principal supervisor)
Project: Synthesis of Kdo glycosyltransferase inhibitors
Current position: Regulatory Affairs Consultat, Efor Healthcare, Paris, France
- 2016-2017 **Marianne Piochon** (Research trainee)
INRS-Institut Armand-Frappier (principal supervisor)
Project: Development of sugar-based biosensors
Current position: Research Assistant, Prof. Éric Déziel, INRS-Institut Armand-Frappier
- 2016-2017 **Philippe Gauthier** (MSc student)
INRS-Institut Armand-Frappier (principal supervisor)
Project: Synthesis of Kdo glycosyltransferase inhibitors
Current position: n/a
- 2015-2016 **Dr Marcelina Mazur** (Postdoctoral research assistant)
University of Poitiers (principal supervisor)
Project: Synthesis of Kdo glycosyltransferase inhibitors
Current position: Assistant Professor, Wroclaw University of Environmental & Life Sciences
- 2015 **Anaïs Laroussarie** (Master 1 research trainee)
University of Poitiers (principal supervisor)
Project: Synthesis of *Burkholderia pseudomallei* EPS mimics
Current position: Senior Scientist, Evotek, France
- 2015 **Hadrien Coqueblin** (Research trainee)
University of Poitiers (principal supervisor)
Project: Synthesis of iminosugars
Current position: Production technician, Biosynthis Production, France
- 2014 **Dr Barbara Barycza** (Postdoctoral research assistant)
University of Poitiers (principal supervisor)
Project: Synthesis of Kdo glycosyltransferase inhibitors
Current position: Adjunct Professor, Wroclaw University of Environmental & Life Sciences
- 2014-2016 **Pierre-Yves Fleury** (MSc student)
Université du Québec à Chicoutimi (co-direction with Prof. André Pichette)
Project: Synthesis of chimeric saponins
Current position: Mining Laboratory Technician, Canadian Royalties Inc.
- 2014 **Rémi Menanteau** (Master 2 research trainee)
University of Poitiers (co-direction)

- Project: Synthesis of iminosugars
Current position: n/a
- 2014 **Jimmy Lauberteaux** (Research trainee)
University of Poitiers (principal supervisor)
Project: Synthesis of *Burkholderia pseudomallei* CPS mimics
Current position: PhD student, École nationale supérieure de chimie, Montpellier, France
- 2013-2014 **Dr Ram Sagar** (Postdoctoral research assistant)
University of Poitiers (co-direction)
Project: Synthesis of iminosugars
Current position: Assistant Professor, Shiv Nadar University, India
- 2013 **Abba Ngassimou** (Master 1 research trainee)
University of Poitiers (principal supervisor)
Project: Synthesis of *Burkholderia pseudomallei* LPS mimics
Current position: n/a
- 2012-2015 **Marielle Tamigney Kenfack*** (PhD student)
***Groupe Français des Glycosciences Bernard Fournet-André Verbert Award**
University of Poitiers (principal supervisor)
Project: Synthesis of *Burkholderia pseudomallei* LPS and CPS mimics
Current position: Postdoctoral Research Assistant, University of Oxford, United Kingdom
- 2012-2013 **Hanitra Andriamboavonjy** (PhD student)
University of Poitiers (principal supervisor)
Project: Synthesis of *Burkholderia pseudomallei* EPS mimics
Current position: Graphic Designer, La Compagnie du Café-Théâtre, France
- 2012-2014 **Dr Jagadeesh Yerri** (Postdoctoral research assistant)
University of Poitiers (co-direction)
Project: Synthesis of iminosugars
Current position: Postdoctoral Research Assistant, Université de Strasbourg, France
- 2012 **Marielle Tamigney Kenfack** (Master 2 research trainee)
University of Poitiers (principal supervisor)
Project: Synthesis of *Burkholderia pseudomallei* CPS mimics
Current position: Postdoctoral Research Assistant, University of Oxford, United Kingdom
- 2012 **Victor Noe Delgado** (Master 2 research trainee)
University of Poitiers (co-direction)
Project: Synthesis of iminosugars
Current position: n/a
- 2012 **Aurélien Fruchard** (Research trainee)
University of Poitiers (principal supervisor)
Project: Synthesis of *Burkholderia pseudomallei* CPS mimics
Current position: n/a
- 2010 **Yan Crisan** (Research trainee)
Institut Pasteur, Paris (principal supervisor)
Project: Synthesis of *Shigella flexneri* 2a LPS mimics
Current position: Engineer, Essilor, France
- 2008 **Frédéric Rossignol** (Research trainee)
Université du Québec à Chicoutimi (principal supervisor)
Project: Synthesis of activated sugars
Current position: Senior Scientist, Rio Tinto, Saguenay, Canada

- 2007 **Simon Rondeau-Gagné** (Research trainee)
Université du Québec à Chicoutimi (principal supervisor)
Project: Betulinic acid glucuronidation
Current position: Assistant Professor, University of Windsor, Canada
- 2007 **Samuel Tremblay-Fortin** (Research trainee)
Université du Québec à Chicoutimi (principal supervisor)
Project: Synthesis of lupane-type chactotriosides
Current position: n/a
- 2006 **Philippe Dufour** (Research trainee)
Université du Québec à Chicoutimi (principal supervisor)
Project: Synthesis of lupane-type saponions
Current position: Senior Scientist, Cascade, Canada

ACADEMIC TEACHING DUTIES

- 2019-present **Lectures in Specialized Subject – Glycochemistry & Glycobiology**
MSc Experimental Sciences of Health, INRS-Institut Armand-Frappier
- 2017-present **Thesis Project** (responsible, BIO9000)
PhD Biology, INRS-Institut Armand-Frappier
- 2017-2019 **Comprehensive Exam** (co-responsible, BIO9010)
PhD Biology, INRS-Institut Armand-Frappier
- 2012-2014 **Glycochemistry & Glycobiology** (lectures & tutorials)
Master 2, Biomolécules, catalyse et environnement, University of Poitiers
- 2012-2016 **Research Project in Organic Chemistry** (lab session)
Institut Universitaire de Technologie (2nd year)
- 2012-2016 **Industrial Organic Chemistry** (lectures & tutorials)
Institut Universitaire de Technologie (2nd year)
- 2011-2016 **Organic Chemistry I, II & III** (tutorials & lab session)
Institut Universitaire de Technologie (1st and 2nd year)
- 2006-2008 **Aromatic Chemistry** (lectures & tutorials)
BSc Chemistry (2nd year), Université du Québec à Chicoutimi
- 2006 **Interdisciplinary Seminars in Environment** (organization)
PhD Environmental Sciences, Université du Québec à Montréal
- 2005-2007 **Organic Chemistry** (lectures & tutorials)
BSc Chemistry (1st year), Université du Québec à Chicoutimi
- 2004-2005 **Natural Product Chemistry** (lab session)
BSc Chemistry (3rd year), Université du Québec à Chicoutimi
- 2003 **Separation and Characterization of Complex Mixtures** (lab session)
BSc Chemistry (3rd year), Université du Québec à Chicoutimi

MEMBER OF EVALUATION COMMITTEES

Scholarships and Awards

- 2018-present **Fondation Armand-Frappier International Conference Fellowship**
INRS-Institut Armand-Frappier, Laval (Québec), Canada
- 2018-present **Fondation Armand-Frappier PhD Fellowship**
INRS-Institut Armand-Frappier, Laval (Québec), Canada
- 2017-present **NSERC PhD Fellowship**
Institut national de la recherche scientifique, Québec City (Québec), Canada
- 2017-present **Vanier PhD Fellowship**
Institut national de la recherche scientifique, Québec City (Québec), Canada
- 2017-present **Governor General's Award Gold Medal**
Institut national de la recherche scientifique, Québec City (Québec), Canada
- 2017/01 **Perron-Desrosiers Award**
INRS-Institut Armand-Frappier, Laval (Québec), Canada
- 2016/11 **INRS-NSERC Scientific Conference Award**
INRS-Institut Armand-Frappier, Laval (Québec), Canada
- 2007-2008 **Graduate Scholarships**
Université du Québec à Chicoutimi, Saguenay (Québec), Canada

MSc & PhD committees

- 2019/08 **PhD Seminar, Léa Melin**
Université du Québec à Montréal, Montréal (Québec), Canada (Prof. Alexandre Gagnon)
- 2019/07 **PhD Thesis, Morgane Lambert** (Jury President)
INRS-Institut Armand-Frappier, Laval (Québec), Canada (Prof. Charles Ramassamy)
- 2019/04 **Thesis Project (BIO9000), Hoang-Van Tran**
INRS-Institut Armand-Frappier, Laval (Québec), Canada (Prof. Annie Castonguay)
- 2019/03 **MSc Thesis, Catherine Amireault** (Jury President)
INRS-Institut Armand-Frappier, Laval (Québec), Canada (Prof. Christiane Ayotte)
- 2018/11 **Comprehensive Exam (BIO9010), Ahlem Meziadi**
INRS-Énergie, Matériaux, Télécommunications, Varennes (Québec), Canada
(Prof. Marc A. Gauthier)
- 2018/10 **MSc Thesis, Lorena Oliveira Fernandes de Araujo** (Jury President)
INRS-Institut Armand-Frappier, Laval (Québec), Canada (Prof. Yves St-Pierre)
- 2018/08 **MSc Thesis, Marthe Lebughe** (Jury President)
INRS-Institut Armand-Frappier, Laval (Québec), Canada (Prof. Frédéric Veyrier)
- 2018/07 **PhD Thesis, Chintam Narayana**
Shiv Nadar University, Uttar Pradesh, India (Prof. Ram Sagar)
- 2018/06 **MSc Thesis, Louise Roux** (Jury President)
INRS-Institut Armand-Frappier, Laval (Québec), Canada (Prof. Nicolas Doucet)
- 2018/04 **PhD Seminar (BIO9020), Golara Golbaghi**
INRS-Institut Armand-Frappier, Laval (Québec), Canada (Prof. Annie Castonguay)
- 2018/01 **MSc Thesis, Raphaël Dufour**
Université Laval, Québec City (Québec), Canada (Prof. Donald Poirier)

- 2017/12 **PhD Thesis, Elham Akbariromani**
Université du Québec à Montréal, Montréal (Québec), Canada (Prof. René Roy)
- 2017/01 **MSc Thesis, Gilles Jost**
Université du Québec à Chicoutimi, Saguenay (Québec), Canada (Prof. André Pichette)
- 2016/12 **Comprehensive Exam (BIO9010), Golara Golbaghi**
INRS-Institut Armand-Frappier, Laval (Québec), Canada (Prof. Annie Castonguay)
- 2016/12 **Thesis Project (BIO9000), Tahani Bayrakdar**
INRS-Institut Armand-Frappier, Laval (Québec), Canada (Prof. Annie Castonguay)

Faculty Position

- 2019/02 **Tenure Committee, Prof. Annie Castonguay**
INRS-Institut Armand-Frappier, Laval (Québec), Canada
- 2017/10 **Senior Lecturer positions (2×)**
Member of the selection committee, Université des Antilles, Guadeloupe, France

EVALUATION OF RESEARCH GRANTS

- 2019 **Seeds4Hope**, University of Windsor, Canada
- 2019 **Mathematics of Information Technology and Complex Systems**, Canada
- 2019-present **Fonds de recherche du Québec – Santé (FRQS)**
Member of the evaluation committee, Research Scholars Junior 1
- 2018 **Mathematics of Information Technology and Complex Systems**, Canada (2×)
- 2018 **Medical Research Council**, UK (1×)
- 2017-2018 **Agence Nationale de la Recherche**, France (2×)
- 2017 **Royal Society International Collaboration Award**, UK (1×)
- 2017 **Infrastructure Funding for New Professors**
INRS-Institut Armand-Frappier, Laval (Québec), Canada

EVALUATION OF SCIENTIFIC ARTICLES

- 2019 Phytochemistry Letters (1×), Biofouling (1×), ChemBioChem (1×)
- 2018 Organic Letters (1×), Journal of Medicinal Chemistry (1×), Chemical Society Reviews (1×),
The Journal of Organic Chemistry (1×), Recent Trends in Carbohydrate Chemistry (book
chapter, 1×)
- 2017 Chemistry Select (1×), European Journal of Medicinal Chemistry (1×), Organic Letters (2×)
- 2016 Bioconjugate Chemistry (1×), Carbohydrate Chemistry (book chapter, 1×), European Journal
of Medicinal Chemistry (1×), The Journal of Organic Chemistry (3×), Tetrahedron Letters
(1×)
- 2015 Bioconjugate Chemistry (1×), Chemical Science (1×), The Journal of Organic Chemistry (1×)

- 2014 European Journal of Medicinal Chemistry (1x), Expert Opinion in Therapeutic Patents (1x), The Journal of Organic Chemistry (1x), Tetrahedron Letters (3x)
- 2006-2013 Bioorganic & Medicinal Chemistry (1x), Chemical Science (3x), European Journal of Medicinal Chemistry (1x), Molecular Nutrition & Food Research (1x), Phytochemistry Reviews (2x), Tetrahedron Letters (1x)

PROFESSIONAL AFFILIATIONS

- 2018-présent **Centre d'Excellence en Recherches sur les Maladies Orphelines – Fondation Courtois** (associate member)
- 2018-présent **Canadian Society for Chemistry** (regular member)
- 2016-présent **Pharmaqam** (regular member)
- 2016-présent **GlycoNet** (network investigator)
- 2016-présent **Réseau québécois de recherche sur les médicaments** (regular member)
- 2011-présent **Groupe Français des Glycosciences** (regular member)

SCIENTIFIC COLLABORATIONS

Local

Prof. Éric Déziel, INRS-Institut Armand-Frappier
Prof. Salim Timo Islam, INRS-Institut Armand-Frappier
Prof. Charles Ramassamy, INRS-Institut Armand-Frappier
Prof. Charles M. Dozois, INRS-Institut Armand-Frappier

National

Prof. Ralph Pantophlet, Simon Fraser University
Prof. Serge Lavoie, Université du Québec en Outaouais
Prof. André Pichette, Université du Québec à Chicoutimi
Prof. Jean Legault, Université du Québec à Chicoutimi
Prof. Vakhtang Mshvildadze, Université du Québec à Chicoutimi
Prof. Daniel Grenier, Université Laval

International

Prof. Stéphane Vincent, University of Oxford, United Kingdom
Prof. Alba Silipo, Università di Napoli Federico II, Italy
Prof. Antonio Molinaro, Università di Napoli Federico II, Italy
Prof. Paul J. Brett, University of Nevada, Reno School of Medicine, United States
Prof. Mary N. Burtneck, University of Nevada, Reno School of Medicine, United States
Prof. David P. AuCoin, University of Nevada, Reno School of Medicine, United States
Prof. Brad Borlee, Colorado State University, Fort Collins, United States

SERVICES TO THE COMMUNITY

- 2019/06 **Chairman, Organic chemistry general session**
102nd Canadian Chemistry Conference and Exhibition, June 7 2019, Québec City, Canada.

- 2019/05 **Member of the External Advisory Committee**
Technology-Analytical Chemistry, Dawson College, Montréal (Québec), Canada
- 2019/05 **Chairman, 2^e Journée scientifique de l'axe Pharmacologie et Toxicologie**
INRS-Institut Armand-Frappier, Laval (Québec), Canada
- 2019/05 **Member of the Scientific Committee, CERMO-FC Seminar**
- 2019/04 **Member of the Scientific Committee, RQRM Seminar**
- 2018-2020 **Elected Member of the Governing Board, École Villemaire**
Laval (Québec), Canada
- 2018/11 **Judge of the 21st Annual Chemistry and Biochemistry Graduate Research Conference**
University of Concordia, Montréal (Québec), Canada
- 2018/03 **Dissemination Conference, Club Scientifique de Brébeuf**
Collège Jean-de-Brébeuf, Montréal (Québec), Canada
- 2018/02 **Judge of Science Fair, École Saint-Maxime**
Laval (Québec), Canada
- 2017-present **INRS Representative, Journée carrière en chimie**
University of Montréal, Montréal (Québec), Canada
- 2017-present **INRS Representative, Forum provincial carrière en chimie**
University Laval, Québec City (Québec), Canada
- 2016/11 **Judge of the 19th Annual Chemistry and Biochemistry Graduate Research Conference**
University of Concordia, Montréal (Québec), Canada
- 2016/11 **Chairman of the 1^{ère} Journée scientifique de l'axe Pharmacologie et Toxicologie**
INRS-Institut Armand-Frappier, Laval (Québec), Canada
- 2015 **President of the Baccalaureate Committee**
Lycée Jean Macé, Niort, France
- 2006 **Organizer of Séminaires interdisciplinaires en environnement**
Université du Québec Network, April 4–6 2006, Saguenay (Québec), Canada
- 2006 **Judge of Canada-Wide Science Fair**
Saguenay (Québec), Canada
- 2004-2008 **Juge of Bell Science Faire**
Saguenay-Lac-St-Jean (Québec), Canada

ADDITIONAL INFORMATION

Languages: English (professional competences); French (native)

Date & Place of Birth: October 10th 1980, Dolbeau (Québec), Canada

Nationality: Canadian, French (naturalized on November 25th 2013)

Civil statute: Married (2009), father of one girl (2013) and one boy (2015)