

# Jean-Philip Lumb, Ph.D.

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## McGill University | Department of Chemistry

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## Appointments

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<b>Associate Professor</b>	McGill University   Department of Chemistry	2017 - present
<b>Assistant Professor</b>	McGill University   Department of Chemistry	2011 - 2017
<b>Postdoctoral Fellow</b>	Stanford University   Department of Chemistry	2008 - 2011

## Education

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<b>Ph.D. Chemistry</b>	University of California, Berkeley   CA, USA	2003-2008
<b>B.A. Chemistry   B.A. French Literature</b>	Cornell University   New York, USA	1998-2002

## Research Interests

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synthetic organic and organometallic chemistry | aerobic catalysis | development of novel oxidation reactions inspired by biosynthesis | synthesis of biologically active natural and unnatural products | organometallic synthesis | metal separations

## Experience

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### McGill University, Department of Chemistry | Montreal, Quebec, Canada

Associate Professor of Chemistry 2017 – present  
Assistant Professor of Chemistry 2011 – 2017

### Stanford University, Department of Chemistry | Palo Alto, California, USA

Postdoctoral Fellow 2008 - 2011  
National Institutes of Health, Ruth L. Kirschstein Fellow  
Advisor: Professor Barry M. Trost

### University of California, Berkeley | Berkeley, California, USA

Graduate Student 2003 – 2008  
American Chemical Society, Pre-doctoral Fellow  
Thesis Advisor: Professor Dirk Trauner

### Cornell University | Ithaca, New York, USA

Undergraduate Researcher 1999 – 2002  
Advisors: Professors Bruce Ganem & Geoff Coates

## Awards

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- 2019** Canadian Society of Chemistry Keith Fagnou Award
- 2018** Thousand Talents Plan Program of Shaanxi Province, China
- 2018** Fessenden Professorship (shared with van de Ven) | McGill University
- 2016** Young Researcher Award | Global Green Chemistry Centers ( $G^2C^2$ )
- 2014** Thieme Chemistry Journal Young Investigator Award
- 2014** North American New Horizons in Science Fellow | Royal Society of Canada
- 2012** Fellowship in Science Communication | Environmental Health News Organization
- 2008** National Institutes of Health Postdoctoral Fellowship
- 2008** American Cancer Society Postdoctoral Fellowship | declined
- 2007** Scynexis Poster Award | National Organic Symposium | Duke University
- 2006** American Chemical Society Organic Division Predoctoral Fellowship
- 2002** Magna cum laude | Cornell University
- 2002** Dean's List | Cornell University | distinction retained for 4 years
- 2002** Merck Index Award for excellence in chemistry | Cornell University
- 2001** Pfizer Synthetic Organic Chemistry Research Fellowship Award | Cornell University
- 2000** Research Experience for Undergraduates (REU) Summer Fellowship | Cornell University

## Editorial Appointments

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2.	Chem	Editorial Board Member	2019 – 2022
1.	Science of Synthesis	Volume Editor for Quinones	2018 – 2022

## Publications

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39. Xu, W.; Huang, Z.; Ji, X.; Lumb, J.-P. "A Catalytic Aerobic Dehydrogenative Cross Coupling of Phenols and Catechols." *ACS Catal.* **2018**, *Under Review* (MS# cs-2018-044439.R1).
38. Halloran, M. W.; Lumb, J.-P. "Diazirine-Based Proteomic Profiling." *Chem. Eur. J.* **2018**, DOI: 10.1002/chem.201805004.
37. Huang, Z.; Lumb, J.-P. "Phenol-Directed C-H Functionalization." *ACS Catal.* **2018**, DOI: 10.1021/acscatal.8b04098. *Invited Review Article*.
36. Esguerra, K. V. N.; Lumb, J.-P. "Cu-(III)-Mediated Aerobic Oxidation." *Synthesis* **2018**, DOI: 10.1055/s-0037-1609635. *Invited Review*.
35. Huang, Z.; Kwon, O.; Huang, H.; Fadli, A.; Marat, X.; Moreau, M.; Lumb, J.-P. "A Bioinspired Synthesis of Polyfunctional Indoles." *Angew. Chemie. Int. Ed.* **2018**, *57*, 11963-11967.
34. Esguerra, K. V. N.; Lumb, J.-P. "Selectivity in the Aerobic Dearomatization of Phenols: Total Synthesis of Dehydronornuciferine by Chemo- and Regioselective Oxidation." *Angew. Chemie Int. Ed.* **2018**, *57*, 1514-1518.
33. Esguerra, K. V. N.; Lumb, J.-P. "Catalytic Aerobic Oxidation of Halogenated Phenols." *Inorg. Chim. Acta* **2017**, *Just Accepted*, DOI: 10.1016/j.ica.2017.08.009.
32. Lumb, J.-P. "Stopping Aerobic Oxidation in its Tracks: Chemoselective Synthesis of Benzaldehydes from Methylarenes." *Angew. Chemie Int. Ed.* **2017**, *56*, 9276-9277.
31. Esguerra, K. V. N.; Lumb, J.-P. A Bioinspired Catalytic Aerobic Functionalization of Phenols: Regioselective Construction of Aromatic C-N and C-O Bonds." *ACS Catalysis* **2017**, *7*, 3477-3482.
30. Esguerra, K. V. N.; Lumb, J.-P. "Synthesis of *ortho*-Azophenols by Formal Dehydrogenative Coupling of Phenols and Hydrazines or Hydrazides." *Chem. Eur. J.* **2017**, *23*, 8596-8600.
29. Kwon, O.; Esguerra, K. V. N.; Glazerman, M.; Petitjean, L.; Xu, Y.; Ottenwaelder, X.; Lumb, J.-P. "Development of 3,5-di-*tert*-Butylphenol as a Model Substrate for Biomimetic Aerobic Copper Catalysis." *Synlett* **2017**, *28*, 1548-1553.
28. McCann, S.; Lumb, J.-P.; Arndtsen, B.; Stahl, S. "Second-Order Biomimicry: In Situ Oxidative Self-Processing Converts Copper(I)/Diamine Precursor into a Highly Active Aerobic Oxidation Catalyst." *ACS Central Sci.* **2017**, *3*, 314-321.

27. Esguerra, K. V. N.; Xu, W.; Lumb, J.-P. "A Bio-Inspired Synthesis of 1,2-Oxy-Amino Arenes from Phenols and Amines." *Chem* **2017**, *2*, 533-549.
26. Glavinović, M.; Krause, M.; Baines, K.; Friščić, T.; Lumb, J.-P. "A Chlorine-Free Protocol for Processing Germanium." *Sci. Adv.* **2017**, *3*, e1700149 (DOI: 10.1126/sciadv.1700149).
25. Xu, B.; Hartigan, E.; Feula, G.; Huang, Z.; Lumb, J.-P.; Arndtsen, B. "Simple Copper Catalysts for the Aerobic Oxidation of Amines: Selectivity Control by the Counterion." *Angew. Chemie Int. Ed.* **2016**, *55*, 15802-15806.
24. Huang, Z.; Lumb, J.-P. "A Catalyst-Controlled Aerobic Coupling of *ortho*-Quinones and Phenols Applied to the Synthesis of Aryl Ethers." *Angew. Chemie. Int. Ed.* **2016**, *55*, 11543-11547.
23. Huang, Z.; Askari, M.; Dai, T.-Y.; Esguerra, K. V. N.; Kwon, O.; Ottenwaelder, X.; Lumb, J.-P. "A Bio-Inspired Synthesis of Oxindoles by Catalytic Aerobic Dual C-H Functionalization of Phenols." *Chem. Sci.* **2016**, *7*, 358-369.
22. Glavinović, M.; Qi, F.; Katsenis, A. D.; Friščić, T.; Lumb, J.-P. "Redox-Promoted Associative-Assembly of Metal Organic Materials." *Chem. Sci.* **2016**, *7*, 707-712.
21. Esguerra, K. V. N.; Lumb, J.-P. "Adapting Melanogenesis to a Regioselective C-H Functionalization of Phenols." *Synlett* **2015**, *26*, 2731-2738.
20. Askari, M.; Esguerra, K. V. N.; Lumb, J.-P.; Ottenwaelder, X. "A Biomimetic Mechanism for the Copper-Catalyzed Aerobic Oxygenation of 4-*tert*-Butylphenol." *Inorg. Chem.* **2015**, *54*, 8665-8762.
19. Huang, Z.; Kwon, O.; Esguerra, K. V. N.; Lumb, J.-P. "A Divergent and Selective Synthesis of *ortho*- and *para*-Quinones from Phenols." *Tetrahedron* **2015**, *71*, 5871-5885.
18. Askari, M.S.; Rodriguez-Solano, L.A.; Proppe, A.; McAllister, B.; Lumb, J.-P.; Ottenwaelder, X. "Catalytic Aerobic Oxidation of Phenols to *ortho*-Quinones with Air-Stable Copper Precatalysts." *Dalton Trans.* **2015**, *44*, 12094-12097.
17. Xu, B.; Lumb, J.-P.; Arndtsen, B. A. "A TEMPO-Free Copper-Catalyzed Aerobic Oxidation of Alcohols." *Angew. Chemie Int. Ed.* **2015**, *54*, 4208-4211.
16. Albertson, A. K. F.; Lumb, J.-P. "A Bio-Inspired Total Synthesis of Tetrahydrofuran Lignans." *Angew. Chemie. Int. Ed.* **2015**, *54*, 2204-2208.
15. Esguerra, K. V. N.; Fall, Y.; Petitjean, L.; Lumb, J.-P. "Controlling the Catalytic Aerobic Oxidation of Phenols." *J. Am. Chem. Soc.* **2014**, *136*, 7662-7668.
14. Esguerra, K. V. N.; Fall, Y.; Lumb, J.-P. "A Biomimetic Catalytic Aerobic Functionalization of Phenols." *Angew. Chem. Int. Ed.* **2014**, *53*, 5877-5991.

## Previous Publications

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13. Trost, B.M.; Masters, J. T.; Le Vaillant, F.; Lumb, J.-P. "Synthesis of a 1,3-Bridged Macrobicyclic Enyne via Chemoselective Cycloisomerization Using Palladium-catalyzed Alkyne-Alkyne Coupling." *J. Org. Chem.* **2016**, *81*, 10023–10028.
12. Trost, B.M.; Taft, B.R.; Masters, J. T.; Lumb, J.-P. "Asymmetric Synthesis of Chiral  $\beta$ -Alkynyl Carbonyl and Sulfonyl Derivatives via Sequential Palladium and Copper Catalysis." *Chem. Sci.* **2016**, *7*, 6217-6231.
11. Trost, B.M.; Masters, J. T.; Lumb, J.-P.; Fateen, D. "Asymmetric Synthesis of Chiral Cycloalkenone Derivatives via Palladium Catalysis." *Chem. Sci.* **2014**, *5*, 1354-1360.
10. Trost, B.M.; Taft, B.R.; Masters, J. T.; Lumb, J.-P. "A New Strategy for the Synthesis of Chiral  $\beta$ -Alkynyl Esters via Sequential Palladium and Copper Catalysis." *J. Am. Chem. Soc.* **2011**, *133*, 8502-8505.
9. Trost, B. M.; Lumb, J.-P.; Azzarelli, J. M. "An Atom-Economic Synthesis of Nitrogen Heterocycles from Alkynes." *J. Am. Chem. Soc.* **2011**, *133*, 740-743.
8. Sofiyev, V.; Lumb, J.-P.; Volgraf, M.; Trauner, D. "Total synthesis of Exiguamines A and B Inspired by Catecholamine Chemistry." *Chem. Eur. J.* **2012**, *26*, 4999-5005.
7. Lumb, J.-P.\*; Krinsky, J. L.; Trauner, D. "Theoretical Investigation of the Rubicordifolin Cascade." *Org. Lett.* **2010**, *12*, 5162-5165.
6. Lumb, J.-P.; Choong, K. C.; Trauner, D. "ortho-Quinone Methides from para-Quinones: Total Synthesis of Rubioncolin B." *J. Am. Chem. Soc.* **2008**, *130*, 9230-9231.
5. Volgraf, M.; Lumb, J.-P.; Brastianos, H. C.; Carr, G.; Chung, M. K. W.; Munzel, M.; Mauk, A. G.; Andersen, R. J.; Trauner, D. "Biomimetic Synthesis of the IDO Inhibitors Exiguamine A and B." *Nat. Chem. Biol.* **2008**, *4*, 535-537.
4. Lumb, J.-P.; Trauner, D. "Pericyclic Reactions of Prenylated Naphthoquinones: Biomimetic Synthesis of Mollugin and Microphyllaquinone." *Org. Lett.* **2005**, *7*, 5865-5868.
3. Lumb, J.-P.; Trauner, D. "Biomimetic Synthesis and Structure Elucidation of Rubicordifolin, a Cytotoxic Natural Product from *Rubia cordifolia*." *J. Am. Chem. Soc.* **2005**, *127*, 2870-2871.
2. Schoenfeld, R.; Lumb, J.-P.; Ganem, B. "Polyhydroxylated Aziridinylcyclopentanes as Glycomimetics: A New Competitive Inhibitor of  $\alpha$ -Mannosidase." *Tetrahedron Lett.*, **2001**, *42*, 6447-6449.
1. Schoenfeld, R.; Lumb, J.-P.; Ganem, B. "Total Synthesis of Mololipids: A New Series of Anti-HIV Moloka'iamine Derivatives." *Bioorg. Med. Chem. Lett.*, **2000**, *10*, 2679-2681.

## Book Chapters

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3. Albertson, A. K. F.; Lumb, J.-P. "Strategies and Tactics for the Synthesis of Lignan Natural Products" in "Recent Advances in Polyphenol Research." Ed. Quideau, S. Wiley-VCH Verlag, Weinheim, Germany, 2017.
2. Lumb, J. -P.; Esguerra, K. V. N. Science of Synthesis: Catalytic Oxidation in Organic Synthesis, (2017) 1, 587. DOI: 10.1055/sos-SD-225-00304.
1. Lumb, J.-P. "The Oxidative Dimerization of Acetylenes and Related Reactions: Synthesis and Applications of Conjugated 1,3-Diynes" in "Modern Alkyne Chemistry- Catalytic and Atom-Economic Transformations."Eds. Trost, B. M.; Li, C. J. Wiley-VCH Verlag, Weinheim, Germany, 2014.

## Intellectual Property

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1. Lumb, J.-P.; Esguerra, K.V.N. "Method for producing an arene with an aromatic C-N bond ortho to an aromatic C-O bond." US 9,856,208 B2.

## Research Collaborations

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10. Professor Theo van de Ven, Department of Chemistry, McGill University
9. Professor Jerry Pelletier, Department of Biochemistry, McGill University
8. Professor Bruce Arndtsen, Department of Chemistry, McGill University
7. Professor Tomislav Friščić, Department of Chemistry, McGill University
6. Professor Colin Crist, McGill University and Lady Davis Institute for Medical Research
5. Professor Christoph Borchers, McGill University, Center for Proteomics
4. Professor Xavier Ottenwaelder, Department of Chemistry, Concordia University
3. Professor Kim Baines, Department of Chemistry, University of Western Ontario
2. Professor Shannon Stahl, Department of Chemistry, University of Madison, Wisconsin
1. Professor Aaron Beeler, Department of Chemistry, Boston University

## Invited University Lectures

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### 2018

44. University of Rostock, Rostock, Germany, September 3-5.
43. The Ohio State University, Columbus, Ohio, September 11.
42. Queens University, Kingston, Ontario, May 4.

### 2017

41. Cornell University, Ithaca, New York, November 9.
40. Concordia University, Montreal, Quebec, October 6.
39. University of Melbourne, Australia, July 31.
38. University of Madison, Wisconsin, February 16.

### 2016

37. Temple University, Philadelphia, October 25.
36. University of Pennsylvania, Philadelphia, October 24.
35. University of California, Santa Barbara, California, May 6.
34. University of California, Riverside, California, May 4.
33. Scripps Research Institute, La Jolla, San Diego, California, May 2.
32. University of California, Irvine, California, April 29.
31. University of California, Los Angeles, California, April 28.
30. California Institute of Technology, California, April 27.
29. University of Indiana, April 18.
28. University of Saskatchewan, Saskatoon, Alberta, March 22.
27. University of Alberta, Edmonton, Alberta, March 21.
26. University of Calgary, Calgary, Alberta, March 17.
25. Brock University, St. Catharines, Ontario, March 4.
24. McMaster University, Hamilton, Ontario, March 3.
23. University of Western Ontario, London, Ontario, March 2.
22. Texas Tech University, Lubbock, Texas, February 3.
21. University of Texas at Austin, Texas, February 1.
20. Stanford University, California, January 26.
19. University of California, Berkeley, January 25.

**2015**

18. University of Windsor, Ontario, December 4.
17. University of British Columbia, Okanagan, Kelowna, November 29.
16. University of British Columbia, Vancouver, British Columbia, November 28.
15. Simon Fraser University, Vancouver, British Columbia, November 27.
14. Boston University, October 26.
13. University of Montreal, October 14.
12. Peking University, School of Pharmacy, Beijing, China, Sept. 17.
11. Chinese Academy of Science (CAS), Beijing, China, Sept. 16.
10. Tsinghua University, Department of Chemistry, Beijing, China, Sept. 14.
9. L'Université de Bordeaux, Sept. 10, 2015.

**2014**

8. Tsinghua University, School of Pharmacy, December 5.
7. Nankai University, Tianjin, China, December, 3.
6. Peking University, Beijing, China, December, 2.
5. Northwest University, Xian, China, November 28.
4. Osaka University, Osaka, Japan, November 25.
3. University of Quebec in Montreal, Montreal. November 13.
2. University of Ottawa, Ottawa, Canada. November 4-5.
1. McGill University, Montreal, Quebec, Canada. October 28, 2014. *Student Invited Lecture.*

## Invited Conference Presentations

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18. 101 Canadian Chemistry Conference and Exhibition; Edmonton, AB, Canada; May 27-31, 2018.  
Session: "Early Career Investigators"  
Title: *Driving Synthesis by Oxidation.*
17. 233<sup>rd</sup> Electrochemical Society Meeting, Seattle Washington, USA; May 13-17, 2018  
Session: "Electron Transfer in Synthesis."  
Title: *Driving Synthesis by Oxidation.*
16. 255<sup>th</sup> ACS National Meeting; New Orleans, Louisiana, USA; March 18-22, 2018  
Session: "Homogeneous Catalysis for Applied Organic Synthesis."  
Title: *Driving Synthesis by Oxidation.*



15. 254<sup>th</sup> ACS National Meeting; Washington, DC, USA; August 20-24, 2017  
Session: "The Many Colors of Copper."  
Title: *Driving Synthesis by Oxidation.*
14. 5<sup>th</sup> Annual Workshop and Symposium of the G2C2 Green Chemistry Network; Melbourne, Australia; July 27-28, 2017  
Session: Award Lecture for the Receipt of the 2016 Young Investigator Award  
Title: *Green Chemical Synthesis by Oxidation.*
13. 100<sup>th</sup> Canadian Chemistry Conference and Exhibition; Toronto, ON, Canada; May 28-June 1, 2017.  
Session: "A Century of Organic Synthesis in Australia and Canada"  
Title: *Driving Synthesis by Oxidation.*
12. 252<sup>nd</sup> ACS National Meeting; Philadelphia, Pennsylvania, USA; August 21-25, 2016.  
Session: "Young Academic Investigators Symposium"  
Title: *Bio-inspired oxidations applied to the synthesis of small molecules and functional materials.*
11. Gordon Research Conference in Organic Reactions and Processes; Stonehill College, Massachusetts, USA; July 17-22, 2016.  
Title: *Driving Synthesis by Oxidation.*
10. Fusion Conferences; Cancun, Mexico; May 20-24, 2016.  
Conference: "Small Molecule Activation"  
Title: *Mechanistic Studies of O<sub>2</sub> Activation in a Catalytic Mimic of Tyrosinase.*
9. Pacificchem; Honolulu, Hawaii; December 15-20, 2015.  
Session: "Applications of C-H Functionalization"  
Title: *A catalytic aerobic platform for the selective functionalization of phenolic C-H bonds.*
8. 11<sup>th</sup> National Conference on Physical Organic Chemistry; Beijing, China; September 18, 2015.  
Title: *Overcoming Challenges of Selectivity in Aerobic Catalysis.*
7. New Journal of Chemistry: New Directions in Chemistry Symposium; McGill University, Montreal, QC, Canada; June 3, 2015.  
Title: *Driving Synthesis by Oxidation.*
6. Center for Green Chemistry and Catalysis Annual Meeting; Laval University, Ville de Québec, QC, Canada; May 12, 2015.  
Title: *Reprogramming Lignification and Melanogenesis.*

5. Sommet des Industries de la Chimie et de L'Energie; Boucherville, QC, Canada; October 24, 2014.  
Title: *Sustainability as a Driver of Scientific and Economic Discovery in a Changing Chemical Landscape.*
4. 248<sup>th</sup> ACS National Meeting; San Francisco, CA, USA; August 10-14, 2014.  
Session: "Hydrogen Peroxide and Dioxygen in Transition Metal Mediated C-H Functionalization Chemistry"  
Title: *Biomimetic catalytic aerobic oxidation of phenols for the efficient synthesis of poly-functional heterocycles.*
3. International Symposium in Homogeneous Catalysis (ISHC); Ottawa, ON, Canada; July 7, 2014.  
Title: *Adapting a Catalytic Aerobic Dearomatization of Phenols to Heterocycle Synthesis.*
2. New Horizons in Science; Mexico City, Mexico; June 21-24, 2014.  
Organizing Committee: Mexican Academy of Sciences (Joes Franco), United States National Academy of Sciences (Michael Clegg) and Royal Society of Canada (Jeremy McNeil).  
Title: *Finding Inspiration in Biosynthesis to Solve Modern Challenges in Sustainable Chemical Synthesis.*
1. Atlantic's Chemcon; Memorial University, St. John's, NL, Canada; May 21-23, 2013.  
Title of Keynote Address: *Finding Inspiration in Nature's Methods: A Bioinspired Approach to Aerobic Phenol Functionalization*

## Invited Industry Presentations

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10. L'Oréal, New Jersey, USA. December 3, 2018  
Title: *Repurposing the Melanogenic Pathway.*
9. Gilead Sciences Inc., Foster City, CA, USA. September 27, 2018.  
Title: *Non-Traditional Methods for Aromatic C-N and C-O Bond Formation.*
8. Novartis, Emeryville, CA, USA. September 26, 2018.  
Title: *Non-Traditional Methods for Aromatic C-N and C-O Bond Formation.*
7. OmegaChem, Levis, Quebec, CA. October 18-19, 2018  
Three Part Lecture Series: (1) *Aerobic Oxidation*, (2) *Heterocycle Synthesis*, (3) *Bio-Inspired Synthetic Planning*
6. L'Oréal, New Jersey, USA. July 11, 2017  
Title: *Repurposing the Melanogenic Pathway.*

5. Paraza Pharma Inc., Montreal, QC, May 5, 2017  
Title: *Novel Strategies for Heterocycle Synthesis.*
4. Gilead, Alberta, CA, April 8, 2016.  
Title: *Driving Synthesis by Oxidation.*
3. L'Oréal, Paris, France. Sept. 8, 2015.  
Title: *Exploiting the Melanogenic Pathway for Synthesis.*
2. Cascades, Montreal, QC. May 25, 2015.  
Title: *Catalytic Aerobic Oxidations of Phenols for the Valorization of Lignin.*
1. FPInnovations, Pointe-Claire, QC. April 17, 2015.  
Title: *Catalytic Aerobic Oxidations of Phenols for the Valorization of Lignin.*

## Contributed Presentations

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16. Gordon Research Conference in Stereochemistry; Salve Regina University, Newport, RI, USA; July 22-27, 2018.
15. 100<sup>th</sup> Canadian Chemistry Conference and Exhibition; Toronto, ON, Canada; May 28-June 1, 2017.  
Session: "Advances in Heterocycle Synthesis"  
Title: *A Catalytic Aerobic Coupling of Phenols and Amines for the Synthesis of Heterocycles.*  
Halloran, M.; Li, Elizabeth; Esguerra, K.V.N.; Huang, Z.; Lumb, J.-P.
14. 99<sup>th</sup> Canadian Chemistry Conference and Exhibition; Halifax, NS, Canada; June 5-8, 2016.  
Session: "General Organic"  
Title: *Driving Synthesis by Oxidation.*  
Esguerra, K.V.N.; Huang, Z.; Kwon, O.; Day, T.-Y.; Lumb, J.-P.
13. 99<sup>th</sup> Canadian Chemistry Conference and Exhibition; Halifax, NS, Canada; June 5-8, 2016.  
Session: "Natural Products"  
Title: *A Biomimetic Approach to Lignan Natural Products.*  
Albertson, A. K. F.; Lumb, J.-P.
12. Gordon Research Conference in Organic Reactions and Processes; Bates College, Lewiston, ME, USA; July 19-24, 2015.  
Poster Title: *A catalytic aerobic platform for selective functionalization of phenolic C-H bonds.*  
Esguerra, K.V.N.; Huang, Z.; Kwon, O.; Day, T.-Y.; Lumb, J.-P.

11. Pacificchem; Honolulu, Hawaii, USA; December 15-20, 2015.  
Session: "Mechanochemistry and Solvent-Free Synthesis."  
Title: *Redox-promoted self-assembly of metal-organic materials in the solid state: applications in materials synthesis and bulk-metal oxidation.*  
Glavinovic, M.; Krause, M.; Frišćić, T.; Baines, K.; Lumb, J.-P.
10. Pacificchem; Honolulu, Hawaii, USA; December 15-20, 2015.  
Session: "Strategies and Tactics for Complex Molecule Synthesis."  
Title: *A Bio-Inspired Platform for the Synthesis of Lignan Natural Products.*  
Albertson, A. K. F.; Lumb, J.-P.
9. 250<sup>th</sup> ACS National Meeting and Exhibition; Boston, MA, USA; August 16-20, 2015.  
Title: *A Catalytic Aerobic Platform for the Functionalization of Phenols.*  
Esguerra, K.V.N.; Huang, Z.; Kwon, O.; Lumb, J.-P.
8. 250<sup>th</sup> ACS National Meeting and Exhibition; Boston, MA, USA; August 16-20, 2015.  
Title: *A Bio-Inspired Platform for the Synthesis of Lignan Natural Products.*  
Albertson, A. K. F.; Lumb, J.-P.
7. International Symposium on Activation of Dioxygen and Homogeneous Oxidation Catalysis (ADHOC); Madison, WI, USA; June 21-25, 2015.  
Title: *Teaching Tyrosinase New Tricks: Catalyzing the Aerobic Oxidation of Phenols and Alcohols.*  
Esguerra, K.V.N.; Fall, Y.; Askari, M.; Ottenwaelder, X.; Lumb, J.-P.
6. Gordon Research Conference in Heterocyclic Compounds; Salve Regina University, Newport, RI, USA; June 15-20, 2014.  
Poster Title: *Adapting Melanogenesis to the Synthesis of Heterocycles.*  
Esguerra, K.V.N.; Fall, Y.; Petitjean, L.; Lumb, J.-P.
5. 27<sup>th</sup> International Symposium on Chiral Discrimination; Boston, MA, USA; June 28-July 1, 2015.  
Title: *A Bio-Inspired Platform for the Synthesis of Lignan Natural Products.*  
Albertson, A. K. F.; Lumb, J.-P.
4. 97<sup>th</sup> Canadian Chemistry Conference and Exhibition; Vancouver, BC, Canada; June 1-5, 2014.  
Session: "General Organic"  
Title: *Adapting Melanogenesis to the Synthesis of Nitrogen Heterocycles.*  
Esguerra, K.V.N.; Fall, Y.; Petitjean, L.; Lumb, J.-P.
3. 97<sup>th</sup> Canadian Chemistry Conference and Exhibition; Vancouver, BC, Canada; June 1-5, 2014.  
Session: "Earth-Abundant Metals in Catalysis"  
Title: *On the Development of Cu-Catalyzed Aerobic Oxidations of Phenols.*  
Esguerra, K.V.N.; Fall, Y.; Petitjean, L.; Lumb, J.-P.

2. 97<sup>th</sup> Canadian Chemistry Conference and Exhibition; Vancouver, BC, Canada; June 1-5, 2014.  
Session: "Natural Products"  
Title: *Lignan Biosynthesis as Inspiration for Synthetic Innovation*.  
Albertson, A. K. F.; Lumb, J.-P.
1. 96<sup>th</sup> Canadian Chemistry Conference and Exhibition; Quebec City, QC, Canada; May 26-30, 2013.  
Session: David Noble Harpp Symposium  
Title : *Le Rouge et le Noir... et le Jaune: Sulfur's Role in Biological Pigmentation*  
Esguerra, K.V.N.; Fall, Y.; Petitjean, L.; Lumb, J.-P.

## Teaching Experience

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McGill University | Montreal, QC, Canada

### Principal Instructor

2013 – 2019

Chemistry 211 / 212 | Introductory Organic Chemistry I (4 credits)

110 students

Fundamental principles of introductory chemistry, including bonding, radical chemistry, substitution and elimination reactions, olefin functionalization, aromaticity, electrophilic aromatic substitution and retrosynthetic analysis. Laboratory: an introduction to organic chemistry laboratory techniques and experimental organic synthesis.

**Average of Student Evaluations** (out of 5.0): **2016** (4.2) | **2015** (4.5) | **2014** (4.5) | **2013** (4.1)

### Principal Instructor

2012-2014 | 2016-2019

Chemistry 629 – Advanced Synthesis (5 credits)

11 – 20 students

Advanced concepts of organic synthesis in the context of complex molecule assembly. Strategies for retrosynthetic analysis are stressed, and recent case studies from the literature are examined. Students leave the course with an advanced understanding of classical bond forming reactions, including cycloadditions, aldol, cross-coupling, oxidation, reduction and functional group interconversions.

**Average Student Evaluations** (out of 5.0): **2016** (4.4) | **2014** (4.8) | **2013** (4.4) | **2012** (4.2)