MARC J. ADLER

Synthetic Organic Chemistry

Toronto Metropolitan University • Toronto, ON, Canada
Kerr Hall North 112 • +1 416 979 5000 x 543461
marcjadler@torontomu.ca • themjalab.com

Canadian Organic Links
torontomu.ca/col • twitter.com/CanOrgLinks

CURRENT APPOINTMENTS

Toronto Metropolitan University (formerly Ryerson University)
Associate Professor with tenure, Department of Chemistry & Biology *2022-present*
Assistant Professor, Department of Chemistry & Biology *2017-2022*
Full Member, Yeates School of Graduate Studies *2018-present*

VI SIX
startup using fundamental chemistry principles to rapidly mature spirits
Co-Founder

PAST APPOINTMENTS

University of Ontario Institute of Technology (UOIT)
Academic Associate & Adjunct Professor, Faculty of Science *2016-2017*
Adjunct Professor & Associate Graduate Faculty Member, Faculty of Science *2016-present*

Northern Illinois University (NIU)
Assistant Professor, Department of Chemistry & Biochemistry *2011-2015*
Adjunct Professor & Senior Graduate Faculty Member, Department of Chemistry & Biochemistry *2015-present*

Proteorex Therapeutics
Co-Founder & Director of Technology *2015-2017*

EDUCATION & TRAINING

University of Oxford *2009-2011*
Yale University *2008-2009*
Post-Doctoral Research Associate *2008-2011*
Research Advisor Prof. Andrew Hamilton, F.R.S. *currently President, New York University*
Main Project Design and synthesis of small molecule peptidomimetics for inhibition of protein-protein interactions

Duke University PhD *Chemistry, 2008*
Graduate Student *2003-2008*
Research Advisor Prof. Steven Baldwin
Dissertation I. Synthesis of an Advanced Rottlerin Intermediate. II. Development of a Microwave-Assisted Methodology for the Regioselective Synthesis of 2,2-Dimethyl-*2H*-chromenes.

University of California, Berkeley BSc *Chemistry, 2003*
Undergraduate Student *1999-2003*
Research Advisor (2002-2003) Prof. Dirk Trauner *currently Professor at New York University*
Graduate Student Mentor (2002-2003) Chris Beaudry *currently Associate Professor at Oregon State University*
Main Project Work towards the total synthesis of SNF4435C
Summer Research (2000) The Scripps Research Institute, San Diego

PERSONAL

dual citizen, Canada & USA
born and raised in San Diego, CA, USA
married, one daughter (born 2018), one son (born 2020)
hobbies include family, basketball, softball, sportscards, snowboarding, cooking, music, and travel

RESEARCH INTERESTS

organosilanes as reagents/catalysts for organic synthesis and in other applications
bioactive molecules against cancer and neurodegenerative diseases, particularly covalent binders of protein targets

RESEARCH FUNDING

External Funding

NSERC I2I (as part of Lab2Market program) *2022*
proposal title Accelerated Maturation of Rye Spirits

NSERC-USRA *2022*
proposal title Green Organosilicon Catalysts for Direct Amidation *student* Jada Wright *Ryerson University*

Mitacs Globalink (Incoming) *2022*
project title Novel Molecules for Applications in Catalysis, Green Energy, and Biological Imaging
incoming student Queency Rosario *Bradford University, UK*

Mitacs Globalink (Incoming) *2022*
project title Green methods for chemical synthesis using silanes *incoming student* Luke McCall *Durham University, UK*

Mitacs Accelerate (as part of Lab2Market Program) *2021*
proposal title Accelerated Maturation of Rye Spirits *Industrial partner* Incubate Innovate Network of Canada

Mitacs Globalink (Incoming) *2021*
project title Assessing robustness of reported chemical reactions
incoming student Maximilian Albers *FAU University Erlangen-Nuremberg, Germany*

Canadian Cancer Society (CCS) Innovation Grant *2020*
proposal title MRCK inhibitor optimization for glioblastoma therapy
co-PIs Prof. Michael Olson (main PI) and Prof. Russ Viirre

NSERC-USRA *2020*
proposal title Exploration of Porphyrin Silanes *student* Julia Pia *Ryerson University*

NSERC Discovery Grant *2020*
proposal title Development of Practical and Powerful Synthetic Organic Methods Using Silanes

Nano-Medicines Innovation Network (NMIN) Strategic Initiatives Grant *2019*
proposal title Customisable metallo-nanotexaphyrins for cancer imaging and therapy
co-investigators Gang Zheng *UHN/University of Toronto* and Raymond Reilly *University of Toronto*

NSERC Engage Grant *2019*
proposal title Development of synthetic organic chemistry methods to selectively transform steroid derivatives to access known metabolites and impurities, and novel drug-like structures
industrial partner Dalton Pharma

NSERC-USRA *2019*
proposal title Investigations of Functional Hypercoordinate Organosilanes *student* Melissa D'Amaral *Ryerson University*

Mitacs Globalink (Outgoing) *2019*
project title π-Conjugated Porphyrin Nanostructures and Template-Directed Synthetic Methods
outgoing student Julia Pia *international collaborator/host* Prof. Harry Anderson *University of Oxford (UK)*

Mitacs Globalink (Incoming) *2019*
project title Porphyrin Silanes: Novel Molecules for Light-Harvesting Applications in Green Energy & Catalysis
incoming student Denis Holovan *Institute of High Technologies National Taras Shevchenko University of Kyiv (Ukraine)*

NSERC Engage Grant *2017*
proposal title Endogenous Fluorescence Imaging of Clinically Important Bacteria on Surfaces
Industrial Partner Dr. Guennadi Saiko *Oxilight Inc.*

CQDM/OCE Explore Grant *2016*
proposal title Innovative technology platform for small molecule fragment screening and lead development against protein-protein interaction drug targets *co-PI* Prof. Robert A. Batey *University of Toronto*

Internal Funding

FOS Dean's Research Fund Booster (DRF-B) *2022*
proposal title "Pepcones" As Potential Anti-Alzheimer's Disease Agents

FOS Dean's Research Fund – Connector *2021*
proposal title Accelerated Maturation of Rye Spirits

FOS Dean's Research Fund - RTI *2020*
proposal title Temperature Controller for Molecular and Plasmonic Spectroscopy
co-PIs Prof. Stefania Impellizzeri (main PI)

Ryerson Faculty of Science Discovery Accelerator Grant 2020

Ryerson University URO *2020*
proposal title Greener catalysts and methods for direct amide/peptide synthesis
student Melissa D'Amaral *Ryerson University*

2019 Ryerson Internal Health Research Fund *2019*
proposal title New methods in synthetic organic chemistry using silatrane to make molecules of biological significance

Ryerson University Faculty of Science Dean's Research Fund Booster (DRF-B) *2019*
proposal title Methods for Efficient and Greener Peptide Synthesis Using Silane Coupling Reagents

Ryerson University Faculty of Science Dean's Discovery Bridging Supplement *2019*

Ryerson University Faculty of Science Dean's Travel Fund
January 2019 50th Silicon Symposium *Columbia, South Carolina (USA)*

April 2019 102nd Canadian Chemistry Conference and Exhibition *Quebec City, QC (Canada)*
January 2020 CSC/CCCE (deferred to Summer, 2021) *Virtual*
January 2022 CSC/CCCE *Calgary, AB (Canada)*

Ryerson University Startup Funds *2018*

NIU Technology Transfer Office Grant *2016*
funds to further develop our patented work on silatrane reduction

Lillian Cobb International Faculty Travel Fellowship *2014*
funds to travel to UK to further collaboration with Prof. Andrew G. Jamieson *then at University of Leicester*

NIU Research & Artistry Opportunity Grant *2012, 2013, & 2014*
2014 proposal title Towards the Development of a Dynamic Covalent Molecular Switch
2013 proposal title Synthesis and Evaluation of Silicon Lewis Acid Catalysts
2012 proposal title Synthesis and Investigation of Green Silicon-Based Lewis Acid Catalysts

NIU Startup Funds *2011*

AWARDS **research, +teaching*

YSGS Outstanding Contribution to Graduate Education Award *2022*
Ryerson University Faculty of Science Dean's Teaching Award *2021*
NIU Women's Basketball "Most Valuable Professor" Honoree+ *2015*
Mortar Board Outstanding Faculty+ *NIU, 2012, 2013, & 2014*
ACS YCC Leadership Development Award Alternate *2013*
Dean's Award for Excellence in Teaching, Honorable Mention+ *Duke University, 2007*
Charles Bradsher Endowment Award* *Duke University, Department of Chemistry, 2007*
C.R. Hauser Fellowship* *Duke University, Department of Chemistry, 2007*
John Herbert Pearson Award+ *Duke University, Department of Chemistry, 2007*
NIH-Sponsored Pharmacological Sciences Training Program Fellowship *Duke University, 2004*
Stanley and Alice Thompson Summer Research Award* *UC Berkeley, College of Chemistry, 2002*

CURRENT RESEARCH SUPERVISION *at Toronto Metropolitan University*

Post-Doctoral Researchers (2)
Dr. Walaa Bedewy *joined 2021*, Dr. Stanley Vasconcelos *joined Fall 2021 (w/Viirre)*

PhD Students (1)
Fawwaz Azam *joined 2021*

MSc Students (2)
Clive Boateng Ameyaw *joined 2022*, John Mulawka *joined 2022*

Undergraduates in Independent Study (2) **Thesis student*
Andy Baterdene*, Breanna Seto

Research Assistants (3)
Melissa D'Amaral, Vanessa Ruscetta, Taj Seaton

PAST RESEARCH SUPERVISION

PhD Students (4)
Vlad Skrypai *Northern Illinois University, 2018*
dissertation Application of 1-Hydrosilatrane as a Robust Reducing Reagent
Senior Research Chemist at Natural Advantage *Louisiana, USA*

Sami Varjosaari *Northern Illinois University, 2018*
dissertation Reduction of Ketones to Alcohols and Tertiary Amines Using 1-Hydrosilatrane
Assistant Professor of Chemistry at Coker College *South Carolina, USA*

Brian Muller *Northern Illinois University, 2017*
dissertation Development, Control, and Application of the *o*-Hydroxychalcone/Flavanone Molecular Switch Scaffold
Research Chemist at Axalta/Valspar *North Carolina, USA*

Matthew Zielinski *Northern Illinois University, 2014*
dissertation Investigation of Silicon Lewis Acidity and Design of a Novel Silicon Lewis Acid Catalyst Scaffold
Scientist at Baxter *Illinois, USA*

MSc Students (8)
Vanessa Ruscetta *co-supervised with Russ Viirre, Toronto Metropolitan University, 2022*
thesis Synthesis of Diazaspirocycles for MRCK Inhibitors as Anti-Cancer Agents

Taj Seaton *co-supervised with Russ Viirre, Toronto Metropolitan University, 2022*
thesis The Synthesis of Novel Triazole Based MRCK Inhibitors
PhD student, University of Bern (Switzerland)

Ali Yaghoubian *co-supervised with Stefania Impellizzeri, Toronto Metropolitan University, 2022*

thesis Accessible, Direct Photochemical Route for the Amine-Free Synthesis of Azoxybenzene and Functional Azoxy Derivatives via Nitroarene Homocoupling

Melissa D'Amaral *Toronto Metropolitan University, 2022*
thesis Synthesis of Organosilanes and Investigation of their Catalytic Activity for Direct Amide Bond Formation

David Raveenthrarajan *Toronto Metropolitan University, 2022*
thesis The Metal-Free, One-Pot Synthesis of Homoallylic Amines by Direct Alkylative Reductive Amination Using Allylsilatrane
Co-Founder, RSVM

Fawwaz Azam *Ryerson University, 2021*
thesis Metal-Free Selective Reduction of Acid Chlorides to Aldehydes using 1-Hydrosilatrane
PhD student in the MJA Lab

Theodore Litberg *Northern Illinois University, 2016*
thesis ortho-Hydroxy Chalcone: A Molecular Switch and Metal Sensing Fluoropohore
PhD student in Chemistry at University of Denver *Colorado, USA*

Jeremy Hess *Northern Illinois University, 2014*
thesis Exploration of Silicon Lewis Acidity: Catalyst Design and Cooperative Effects
PhD student in Chemistry at Case Western Reserve University *Ohio, USA*

PAST RESEARCH SUPERVISION (CONT.)

Non-Degree Research Assistants (4)

Thershan Satkunarajah *Ryerson University, 2022*	PhD in Chemistry, McGill University
Zainab Shakeel *Ryerson University, 2018-2021*	
Francis Buguis *Ryerson University, 2018*	MSc student in Chemistry, University of Western Ontario
Burhan Hussein *Ryerson University, 2017-2018*	PhD in Chemistry, Durham University (UK), PDF McGill Univ.

Undergraduates in Independent Study (45) **Thesis student*

Rebecca Yan *TMU, 2022*	UG in Chemistry, Queens University
Luke McCall *TMU, 2022*	MSc in Chemistry, Durham University (UK)
Queency Rosario *TMU, 2022*	UG in Chemistry, Bradford University (UK)
Jada Wright *TMU, 2022*	
Ebad Noman* *RU, 2021-2022*	MSc student in Chemistry, McMaster University
Areeba Yousuf* *RU, 2021-2022*	
Shamal Khan* *RU, 2021-2022*	
Naomy Kaplan *RU,2021*	DDS (dentistry) student, New York University
Jayden Shnier *RU, 2021*	undergraduate student, Western University
Brooklyn Kostiuk* *RU, 2021*	MSc student in Pharmacology, University of Toronto
Atif Din* *RU, 2020-2021*	
Neo Seoke* *RU,2020-2021*	
Julia Pia* *RU,2018-2020*	PhD student in Chemistry, University of Toronto
Melissa D'Amaral* *RU,2019-2020*	MSc student in Chemistry, Ryerson University
Kelvin Urbina* *RU,2019-2020*	PhD student in Chemistry, Rutgers University
Ali Yaghoubian* *RU,2019-2020*	MSc student in Chemistry, Ryerson University
Enea Lelaj* *RU,2019-2020*	MSc student in Chemistry, Ryerson University
Valeria Morozova *RU,2019-2020*	undergraduate student, Ryerson University
Krishnam Patel *RU,2020*	MSc student, University of Toronto
Adam Vandenbroek *RU,2020*	PharmD, University of Toronto
Denys Holovan *RU,2019*	MSc/PhD in Chemistry, McGill University
Kody Wolfstadt *RU,2019*	MD student, University of Toronto
Taj Seaton* *RU,2018-2019*	MSc student in Chemistry, Ryerson University
Jyotsna Mary George* *RU,2018-2019*	MD student, St. George's University
Nick Jamkhou* *RU,2018-2019*	BMO
David Raveenthrarajan* *UOIT, 2016-2017*	MSc student in Chemistry, Ryerson University
Nicole Krysa *UOIT, 2016-2017*	MD student, Queens University
Drew Donnally *NIU, 2014-2016*	Assistant National Customer Manager, Glanbia Performance Nutrition
Paolo Suating *NIU, 2014-2016*	PhD student in Chemistry, Tulane University
Joe Hurley *NIU, 2014-2016*	PhD student in Chemistry, Florida State University
Miracle Diala *NIU, 2014-2015*	undergraduate student, NIU
Jacob Felckowski *NIU, 2014-2015*	PharmD student, University of Iowa
Jeffrey Moore *NIU, 2013-2015*	Associate Quality Control Chemist at Ingredion
Chanté Pniewski (Muller) *NIU, 2013-2015*	PhD student in Chemistry at University of North Carolina, Greensboro
Reid Yocum *NIU, 2013-2015*	MS student in Chemistry, University of Rhode Island
Juliane Totzke* *NIU, 2013-2014*	PhD in Pharmacology, Duke University, now M.D. student in Germany

Asim Muhammad *NIU, 2012-2015*	Chemist at CSL Behring
Ted Litberg *NIU, 2012-2014*	PhD student in Chemistry at University of Denver
Vlad Skrypai *NIU, 2012-2014*	Senior Research Chemist at Natural Advantage
Max Korzec* *NIU, 2012-2014*	MD student at Southern Illinois University School of Medicine
John Price* *NIU, 2012-2013*	MD student at Uniformed Services University of Health Science
Stefanie DeVlieger (Le) *NIU, 2012-2013*	Senior Quality Technician at MQA Abbott Laboratories
Ermal Hoxha *NIU, 2011-2014*	MBA at NIU
Jesse Mai *NIU, 2011-2014*	MEng. student at University of Illinois, Chicago
Caitlin Morton (Tesch) *NIU, 2011-2012*	Scientist at Flinn Scientific

Thesis Committee Membership

Current, Ryerson University (8) PhD Kathleen May, Malek El-Aooiti, Sahana Sritharan, Phil Junor; *MSc* Nicholas Dogantzis, Tavneet Singh, Aviya Akari, Abullah Al-Ramadhan

Ryerson University (13) MSc Desiree Bender, Zhuo Zhen Chen, Gloria D'Amaral, Thershan Satkunarajah; *UG Thesis* Jeanette Adjei, Jennalee Ramserran, Matthew Hill, Saba Azizi Soldouz, Ashnie Badal, Mariya Kalinina, Sekou Bayo, Philip Januszyk, Breana Walker

UOIT (4) Matthew Hammill *MSc, 2017 and PhD, 2021;* Adam Cook *UG Honors, 2017*, Dion Chang *2017*, Ifedi Orizu *2016*

NIU (8) PhD Zheng Zhang *2014*, Kenny Boblak *2014*, Rajasekhar Naredla *2013*, Erum Raja *2012*, Anila Kethe *2012*; *MSc* Devangi Patel *2013*; *pre-degree* Gashaw Goshu, Travis Helgren

External (3) MSc Kayla Fisher *UOIT, 2016*, Renata Barichello *UOIT, 2020*; *PhD* Heng-Yen Wang *U Illinois, Chicago, 2013*

ONGOING RESEARCH COLLABORATIONS

Prof. Stefania Impellizzeri *Ryerson University*	applications of porphyrin silanes and fluorescent switches
Prof. Michael Olson *Ryerson University*	anti-cancer small molecules
Prof. Melanie Pilkington *Brock University*	crystallographic studies of molecules of interest
Prof. Lingyan Shi *University of California, San Diego*	Raman probes for high-contrast bioimaging
Prof. Russell Viirre *Ryerson University*	anti-cancer small molecules
Prof. Nick Vukotic *University of Windsor*	porphyrin silanes in MOFs
Prof. Donald Weaver *Krembil Research Institute/UHN*	covalent inhibitors of PPIs applied to Alzheimer's disease

PUBLICATIONS **corresponding author, undergraduate author, ᶜfeatured on cover of print issue*

XX. D'Amaral, M.C.; Andrews, K.G.; Denton, R.; Adler, M.J.* Silyl Esters as Reactive Intermediates in Organic Synthesis. *review article, submitted.*

26. Yaghoubian, A.; Hodgson, G.K.; Adler, M.J.*; Impellizzeri, S.* Direct Photochemical Route for Amine- and Catalyst-Free Synthesis of Azoxybenzene and Functional Azoxy Derivatives via Accessible Nitroarene Homocoupling under Ambient Conditions. *Organic & Biomolecular Chemistry* **2022**, *20*, 7332-7337.
posted as preprint on ChemRxiv: https://doi.org/10.26434/chemrxiv-2022-3f333
25. Pixler, A.S.; DeLio, A.M.; Varjosaari, S.E.; Skrypai, V.; Adler, M.J.; Gilbert, T.M.* Computational Investigation of the Effect of Alkoxy Carbon Substitution on the Mechanism of Carbonyl Group Reduction by 1-Hydridosilatranes. *Journal of Organometallic Chemistry* **2022**, *957*, 122144
24. Azam, F.; Raveenthrarajan, D.; Adler, M.J.* The selective reduction of acid chlorides to aldehydes using 1-hydrosilatrane. *Journal of Organometallic Chemistry* **2021**, *956*, 122130.
23. Pia, J.E.; Hussein, B.A.; Skrypai, V.; Sarycheva, O.; Adler, M.J.* Porphyrin Silanes. *Coordination Chemistry Reviews* **2021**, *449*, 214183.
22. Azam, F.; Adler, M.J.* Preparation of 1-Hydrosilatrane, and Its Use in the Highly Practical Synthesis of Secondary and Tertiary Amines From Aldehydes and Ketones via Direct Reductive Amination. *Org Synth* **2021**, *98*, 227-241.
21. D'Amaral, M.C.; Jamkhou, N.; Adler, M.J.* Efficient and accessible silane-mediated direct amide coupling of carboxylic acids and amines. *Green Chemistry* **2021**, *23*, 288-295.
20. Hussein, B.A.; Shakeel, Z.; Turley, A.T.; Bismillah, A.N.; Wolfstadt, K.M.; Pia, J.E.; Pilkington, M.; McGonigal, P.R.; Adler, M.J.* Control of Porphyrin Planarity and Aggregation by Covalent Capping: Bissilyloxy Porphyrin Silanes, *Inorg. Chem.* **2020**, *59(18)*, 13533-13541.
- preprint published in *ChemRxiv*, **2020**, doi: 10.26434/chemrxiv.12195084.v1.
19. Skrypai, V.; Varjosaari, S.E.; Azam, F.; Gilbert, T.M.; Adler, M.J.* Enantioselective Direct Reductive Amination of Ketones Using 1-Hydrosilatrane, *J Org Chem* **2019**, *84(9)*, 5021-5026.
- highlighted in SynFacts (https://bit.ly/30pKam6)
18. James, R.R.; Herlugson, S.M.; Varjosaari, S.E.; Skrypai, V.; Shakeel, Z.; Gilbert, T.M.; Adler, M.J.* One-pot reductive acetylation of aldehydes using 1- hydrosilatrane in acetic acid, *SynOpen* ***2019****, 3,* 1-3.
- highlighted in SynForm (https://bit.ly/2Gf92XH)
17. Varjosaari, S.E.; Skrypai, V.; Herlugson, S.M.; Gilbert, T.M.; Adler, M.J.* Enantioselective Metal-Free Reduction of Ketones by a User-Friendly Silane with a Reusable Chiral Additive, *Tetrahedron Lett* **2018**, *59(29)*, 2839-2843.

16. Varjosaari, S.E.; Skrypai, V.; Suating, P.; Hurley, J.J.M.; Trownsell, A.M.; Gilbert, T.M.; Adler, M.J.* Simple, Metal-Free Direct Reductive Amination Using Hydrosilatrane to Form Secondary and Tertiary Amines, *Adv Syn Cat* **2017***, 359(11),* 1872-1878.
    - designated as Very Important Publication (VIP)
15.[C] Varjosaari, S.E.; Skrypai, V.; Suating, P.; Hurley, J.J.M.; Gilbert, T.M.; Adler, M.J.* 1-Hydrosilatrane: a Locomotive for Efficient Ketone Reductions, *Eur J Org Chem* **2017**, *2017(2)*, 229-232.
14. Hoeksema, C.; Adler, M.J.; Gilbert, T.M.* Computational Study of Ways by which Exo-Silatranes Might be Prepared, *J Phys Chem A* **2016**, *120(46)*, 9315-9323.
13. Muller, B.M.; Litberg, T.J.; Yocum, R.A.; Pniewski, C.A.; Adler, M.J.* Extended Aromatic and Heteroaromatic Ring Systems in the Chalcone-Flavanone Molecular Switch Scaffold*, J Org Chem*, **2016**, *81(13)*, 5775-5781.
12. Skrypai, V.; Hurley, J.J.M.; Adler, M.J.* Silatrane as a Practical and Selective Reagent for the Reduction of Aryl Aldehydes to Benzylic Alcohols, *Eur J Org Chem*, **2016**, *2016(12)*, 2207-2211.
11. Varjosaari, S.E.; Suating, P.; Adler, M.J.* One-Pot Synthesis of *O*-Arylcarbamates, *Synthesis* **2016**, *48(01)*, 43-47.
10. Varjosaari, S.E.; Hess, J.P.; Suating, P.; Price, J.M.; Gilbert, T.M.; Adler, M.J.* Stereoelectronics of Silyloxybenzoic Acids, *Tetrahedron Lett* **2015**, *56(4)*, 642-645.
09.[C] Muller, B.M.; Mai, J.; Yocum, R.A.; Adler, M.J.* Impact of Mono- and Disubstitution on the Colorimetric Dynamic Covalent Switching Chalcone/Flavanone Scaffold, *Org Biomol Chem* **2014,** *12(28)*, 5108-5114.
08.[C] Mai, J.; Hoxha, E.; Morton, C.E.; Muller, B.M.; Adler, M.J.* Towards a Dynamic Covalent Molecular Switch: Substituent Effects in Chalcone/Flavanone Isomerism, *Org Biomol Chem* **2013**, *11(21)*, 3421-3423.
    - appeared in the RSC themed collection "In Celebration of Andrew D. Hamilton's Career in Chemistry" (https://rsc.li/2E0c9QG)
    - featured in Undergraduate Research Highlights by the Council for Undergraduate Research (https://www.cur.org/highlights/)

Pre-Independent Publications

07. Adler, M.J.; Scott, R.T.W.; Hamilton, A.D.* Enaminone-Based Mimics of Extended and Hydrophilic α-Helices, *Chem Eur J* **2012**, *18(41)*, 12974-12977.
06. Thompson, S.; Vallinayagam, R.; Adler, M.J.; Scott, R.T.W.; Hamilton, A.D.* Double-Sided α-Helix Mimetics, *Tetrahedron* **2012**, *68(23)*, 4501-4505.
05. Adler, M.J.; Hamilton, A.D.* Oligophenylenaminones as Scaffolds for α-Helix Mimicry, *J Org Chem* **2011**, *76(17)*, 7040-7047.
    - featured in ACS Virtual Special Issue: Peptide Chemistry, September 7, 2012, 1(2).
04. Adler, M.J.; Jamieson, A.G.; Hamilton, A.D.* Synthetic Mimics of Protein Secondary Structure as Disruptors of Protein-Protein Interactions, *Curr Top Microbiol and Immunol* **2011**, *348*, 1-23.
03. Rosenzweig, B.A.; Ross, N.T.; Adler, M.J.; Hamilton, A.D.* Altered Binding of a Multimeric Protein by Changing the Self-Assembling Properties of its Substrate, *J Am Chem Soc* **2010**, *132(19)*, 6749-6754.
02. Adler, M.J.*; Baldwin, S.W. Direct, Regioselective Synthesis of 2,2-Dimethyl-*2H*-chromenes. Total Syntheses of Octandrenolone and Precocenes I and II, *Tetrahedron Lett* **2009**, *50(36)*, 5075-5079.
01. Charkoudian, L.K.; Heymann, J.J.; Adler, M.J.; Haas, K.L.; Mies, K.A.; Bonk, J.F.* Forensics as a Gateway: Promoting Undergraduate Interest in Science and Graduate Student Professional Development Through a First-Year Seminar Course, *J Chem Educ* **2008**, *85(6)*, 807-812.

PATENTS

01. Adler, M.J.; Gilbert, T.M.; Skrypai, V.; Varjosaari, S.E. "Compositions and Methods for Reduction of Ketones and Aldehydes and Iminiums, and products produced by" US Patent 9,981,992.

PUBLIC RESEARCH PRESENTATIONS **invited*

27. 105th Canadian Chemistry Conference and Exhibition *Calgary, AB, CAN, 14 June 2022 – + poster judge*
26. 102nd Canadian Chemistry Conference and Exhibition *Québec, QC, CAN, 7 June 2019 – + session chair & poster judge*
25. 50th Silicon Symposium *Columbia, SC, USA, 14 May 2019 – also session chair*
24.* University of Ontario Institute of Technology *Oshawa, ON, CAN, 27 Feb 2019*
23.* Dalton Pharma *Toronto, ON, CAN, 22 Feb 2019*
22.* Ryerson University *Toronto, ON, CAN, 28 Feb 2018*
21. 100th Canadian Chemistry Conference and Exhibition *Toronto, ON, CAN, 31 May 2017*
20.* Brock University *St. Catharines, ON, CAN, 23 Oct 2015*
19.* Ryerson University *Toronto, ON, CAN, 03 Jun 2015*
18.* Southern Illinois University, Carbondale *Carbondale, IL, USA, 25 Apr 2014*
17.* Southern Illinois University, Edwardsville *Edwardsville, IL, USA, 24 Apr 2014*
16.* Elmhurst College *Elmhurst, IL, USA, 09 Apr 2014*
15.* Ryerson University *Toronto, ON, CAN, 28 Mar 2014*
14.* University of Toronto, Scarborough *Scarborough, ON, CAN, 27 Mar 2014*

13. 246th National ACS Conference *Indianapolis, IN, USA, 08 Sep 2013 – + session chair*
12. 96th Canadian Chemistry Conference and Exhibition *Québec, QC, CAN, 29 May 2013*
11. 45th Silicon Symposium *Lubbock, TX, USA, 22 May 2013*
10.* Symposium in Honor of Professor Andrew D. Hamilton *Oxford, UK, 26 Jun 2012 – + session chair*
09.* ACS Rock River Section *Rockford College, Rockford, IL, USA, 21 Mar 2012*
08.* Sigma Xi Brown Bag Talk *Northern Illinois University, DeKalb, IL, USA, 17 Nov 2011*
07.* Northern Illinois University *DeKalb, IL, USA, 12 Apr 2011*
06.* University of Southern Mississippi *Hattiesburg, MS, USA, 21 Feb 2011*
05. 4th Chemistry of the Cell Conference *Oxford, UK, 06 Sep 2010*
04. 240th National ACS Conference *Boston, MA, USA, 23 Aug 2010*
03. 40th National Organic Symposium *Durham, NC, USA, 03 Jun 2007*
02. 232nd National ACS Conference *San Francisco, CA, USA, 13 Sep 2006*
01. 120th NCACS Local Meeting *Durham, NC, USA, 22 Apr 2006*

TEACHING (COURSE DESIGNER & INSTRUCTOR)

Graduate Courses

Organic Methodology *Ryerson University, MS 8115, Fall 2018 & Fall 2020*
Physical Organic Chemistry *NIU, Chem 432/632, Spring 2015*

Undergraduate Courses

Organic Chemistry *Ryerson University, CHY 142/242, AY 2017-2018, Winter 2020, Fall 2021 & 2022; UOIT, Chem 2020/2021, Spring 2016 & AY 2016-2017*; *NIU, Chem 336/337/338/339 (for majors), AY 2011-2012, AY 2012-2013, AY 2013-2014; NIU, Chem 330/331/332/333, (for non-majors) AY 2014-2015*
Advanced Organic Chemistry *Ryerson University, CHY 437, Winter 2018 & 2022 and CHY 600, Fall 2019*
Biochemistry *Ryerson University, BLG 261, Winter 2019*; *UOIT, Biol 2080, Winter 2016*
Pharmaceutical Chemistry *Ryerson University, CHY 436, Winter 2020 (co-taught)*
Chemistry Laboratory Research Project *Ryerson University, CHY 307, Spring/Summer 2018 and CHY 399, Winter 2020*
undergraduate research course in synthetic organic chemistry
General Chemistry *UOIT, Chem 1020, Winter & Spring, 2016*
Chemistry and Forensics *Duke University, Chem 49S, Spring 2006 & 2007*
first-year seminar course for non-scientists

COMMITTEE MEMBERSHIP **elected position*

Toronto Metropolitan University/Ryerson University
Departmental Hiring Committee *2022-present*
Chemistry Curriculum Committee *2019-present*
Teaching and Learning Spaces Working Group *2019-present*
Faculty of Science Undergraduate Awards Selection Committee *2019-2021*
Departmental Seminar Committee *2019-2020*
Departmental Health and Safety Committee *2017-2021*
Committee Chair *2017-2021*
Department of Chemistry & Biology Undergraduate Awards Committee *2017-present*
Committee Chair *2019-2022*, Chair of NSERC USRA Departmental Ranking Subcommittee *2018, 2021, & 2022*

UOIT
Outreach Committee, Recruitment Committee, Large Classes Working Group *2016-2017*

NIU
Executive Committee*, External Chair Search Committee* *2014-2015*
Public Relations Committee, Colloquium Committee *2011-2015*
Undergraduate Grade Appeals Panel *2013-2014*
Graduate Program Committee, Library Committee *2011-2013*

VOLUNTEER APPOINTMENT-RELATED ACTIVITIES

Invited guest speaker, Chemistry Course Union Careers Panellist Event, *2020, 2021*
Co-chair/co-organizer, Chemistry & Biology's "Science at the Interface Symposium" *2019, 2020, 2021, 2022*
Poster Competition Judge, Ryerson University Chemistry & Biology's "Science at the Interface Symposium" *2015 & 2018*
Invited Faculty Guest Speaker, "Landing Your Dream Job" (Ryerson Biomedical Science Course Union) *2018*
Representative for Ryerson Chemistry at Ontario Universities' Fair *2017, 2018, & 2019*
Representative for UOIT Chemistry at UOIT Open House & Ontario Universities' Fair *2016*
First-Year Chemistry Orientation Presentation, UOIT *2016*
Poster Competition Judge, UOIT "Student Research Showcase" *2016*
Faculty Participant at UOIT "iBegin" for incoming students *2016*
Faculty Supervisor, NIU Chem Club "Chem Demos" Night *2011-2015*
Faculty Advisor, NIU STEM House General Science Floor *2013-2014*
Participant, NIU PI Academy *2013*
Faculty Advisor, NIU Honors Program *2012-2014*
Faculty Advisor, Mortar Board Senior Honors Society, NIU Pleiades Chapter *2012-2014*
Judge, NIU Undergraduate Research & Artistry Day Poster Competition *2012, 2013, & 2014*
NIU PI Academy participant *AY 2012-2013*
Faculty Participant in NIU "Meet the Professor" & "Chat Nights" for incoming students *2012 & 2013*

EXTERNAL PROFESSIONAL ACTIVITIES

General Organic Session symposium organizer, 104th Canadian Chemistry Conference and Exhibition (CCCE) *2021*
Co-chair/co-organizer, 48th Southern Ontario Undergraduate Student Chemistry Conference (SOUSCC48) *2020*
National Center for Faculty Development and Diversity "Faculty Success Program" participant *2020*
Oral session chair and/or poster competition judge, QOMSBOC *2017 & 2019,* POMS *2019,* ACS *2013*
Creator and maintainer of Canadian Organic Links resource website *2017-present*
Judge, Inaugural Science Genius Toronto Rap B.A.T.T.L.E. Competition *2016*
Journal Reviewer, various publications *2009-present*
Textbook Reviewer, various organic chemistry textbooks *2014-present*
Participant, NIH Mentoring Workshop for New Faculty in Organic and Biological Chemistry *2014*
Consultant for organic chemistry-related legal issues, Williams & Connolly, LLP *2007*

PROFESSIONAL ORGANIZATION MEMBERSHIPS

Chemical Institute of Canada *2013-present*
Communications Officer (Executive Committee), CSC Division of Organic Chemistry, *2018-present*
American Chemical Society, Division of Organic Chemistry *2005-present*
Sigma Xi, Northern Illinois University Chapter *2012-2015*
Phi Lambda Upsilon, Alpha Pi Chapter *2004-2008*
Recruitment Co-Chair *2004-2006,* Webmaster *2004-2006,* Academic Speaker Coordinator *2005-2007*