CAROLINE PROULX, Ph.D.

Assistant Professor,
Department of Chemistry,
511 Dabney Hall,
North Carolina State University,
Raleigh, NC, 27695, USA

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PROFESSIONAL EXPERIENCE

Assistant Professor 2016 – present
Department of Chemistry, North Carolina State University, Raleigh, NC.

NSERC Postdoctoral Fellow 2012 – 2016
Lawrence Berkeley National Laboratory, Berkeley, CA.
Supervisor: Dr. Ronald N. Zuckermann

EDUCATION

Ph.D. Chemistry Dec 2012
Université de Montréal, Montréal, Québec, Canada.
Thesis title*: "Methodology for the combinatorial synthesis of azapeptides: application to the synthesis of aza-GHRP-6 analogs as CD36 receptor ligands."*
Supervisor: Dr. William D. Lubell.
Dean's honor list.

Hon. B. Sc. Biopharmaceutical Sciences, Medicinal Chemistry May 2007
University of Ottawa, Ottawa, Ontario, Canada.
Undergraduate research project supervisor: Dr. Robert N. Ben.
Dean's honor list.

AWARDS AND DISTINCTIONS

2020	LeRoy and Elva Martin Award for Teaching Excellence
June 2013-2015	Postdoctoral Fellowship (PDF), Natural Sciences and Engineering Research Council of Canada (NSERC), *$80,000*
May 2013	Dean's honor list, Ph.D. graduation, Université de Montréal.
Sept 2010-2012	Post-Graduate Doctoral Scholarship (PGS D2), Natural Sciences and Engineering Research Council of Canada (NSERC), *$42,000*
Sept 2009	Boehringer-Ingelheim Scholarship, *$19,000*
Sept 2008	Scholarship for direct transfer to the Ph.D., *$14,000*
Sept 2007-2008	Post-Graduate Scholar Master's Award, Natural Sciences and Engineering Research Council of Canada (NSERC), *$34,600*
Nov 2008	Best poster award, Québec-Ontario Minisymposium on Bio-Organic and Synthetic Chemistry, valued at $100.
Aug 2008	Merck Index Women in Chemistry Scholarship Award of Special Recognition, valued at $500.
Summer 2006	NSERC Undergraduate Student Research Award, *$4,500* (USRA, Prof. Robert N. Ben)
Summer 2005	NSERC Undergraduate Student Research Award, *$4,500* (USRA, Prof. Ann English)
2003-2006	Dean's List, University of Ottawa.
2003-2006	University of Ottawa Admission scholarship, *$14,000*

Awards Declined:

May 2007	Ontario-Québec Fellowship Exchange Scholarship, valued at $10,000, renewable 2 years.
June 2003	Governor General of Canada bronze medal, École Secondaire Étienne-Brûlé, North York, Ontario.

RESEARCH CONTRIBUTIONS

Refereed Journal Publications

NCSU

31. Proulx, C. "Catching up to nature's ribosomes". *Science* **2020**, *368*, 941.
    **Perspective on an article by Hartrampf, N. et al. Synthesis of proteins by automated flow chemistry. Science 2020, 368, 980-987.*
30. Young, H. A.; Guthrie, Q. A. E.; Proulx, C.* "*N*-Arylation of Amino Acid Esters to Expand Side Chain Diversity in Ketoxime Peptide Ligations". *J. Org. Chem.* **2020**, *85*, 1748.
    **Featured in a special issue on "Modern Peptide and Protein Chemistry".*
29. Reese, H. R.; Shanahan, C. C.; Proulx, C.; Menegatti, S.* "Peptide science: a "rule model" for new generations of peptidomimetics". *Acta Biomaterialia* **2020**, *102,* 35.
28. Guthrie, Q. A. E.; Young, H. A.; Proulx, C.*; "Ketoxime peptide ligations: oxidative couplings of alkoxyamines to *N*-aryl peptides". *Chem. Sci.* **2019**, *10*, 9506-9512.
27. McMechen, M. A.; Willis, E. L.; Gourville, P. C.; Proulx, C.* "Aza-amino acids disrupt beta-sheet secondary structures". *Molecules* **2019**, *24*, 1919.
    **Featured in a special issue on Advances in Peptide and Peptidomimetic Design Inspiring Basic Science and Drug Discovery: A Themed Issue Honoring Professor Victor J. Hruby on the Occasion of His 80th Birthday*
26. Guthrie, Q. A. E.; Proulx, C.* "Oxime ligation *via in situ* oxidation of *N*-phenylglycinyl peptides". *Org. Lett.* **2018**, *20*, 2564.
    **Highlighted in Synform 2018/09, A137–A140.*

NCSU, from Ph.D. and postdoc studies

25. Proulx, C.; Zhang, J.; Sabatino, D.; Chemtob, S.; Ong, H.; Lubell, W. D. Synthesis and Biomedical Potential of Azapeptide Modulators of the Cluster of Differentiation 36 Receptor (CD36). *Biomedicines.* 2020, *8*, 241.
24. Frégeau, G.; Sarduy, R.; Elimam, H.; Esposito, C. L.; Mellal, K.; Ménard, L.; Leitão da Graça, S. D.; Proulx, C.; Zhang, J.; Febbraio, M.; Soto, Y.; Lubell, W. D.; Ong, H.; Marleau, S. Atheroprotective and atheroregressive potential of azapeptide derivatives of GHRP-6 as selective CD36 ligands in apolipoprotein E-deficient mice. *Atherosclerosis* 2020. *307*, 52.
23. Battigelli, A.; Kim, J. H.; Dehigaspitiya, D. C.; Proulx, C.; Robertson, E. J.; Murray, D. J.; Rad, B.; Kirshenbaum, K.; Zuckermann, R. N.* "Glycosylated Peptoid Nanosheets as a Multivalent Scaffold for Protein Recognition." *ACS Nano*. **2018**, *12*, 2455.
22. Huynh, D. N.; Bessi, V. L.; Menard, L.; Piquereau, J.; Proulx, C.; Febbraio, M.; Lubell, W. D.; Carpentier, A. C.; Burelle, Y.; Ong, H.; Marleau, S.* "Adiponectin has a pivotal role in the cardioprotective effect of CP-3(iv), a selective CD36 azapeptide ligand, after transient coronary artery occlusion in mice". *FASEB J.* **2018**, 32, 807.
21. Chingle, R.; Proulx, C.; Lubell, W. D.* "Azapeptide Synthesis Methods for Expanding Side-Chain Diversity for Biomedical Applications" *Acc. Chem. Res.* **2017**, *50*, 1541.

Prior to NCSU, from Ph.D. and postdoc studies

20. Robertson, E. J.; Proulx, C.; Su, J. K.; Garcia, R. L.; Yoo, S.; Nehls, E. M.; Connolly, M. D.; Taravati, L.; Zuckermann, R. N.* "Molecular Engineering of the Peptoid Nanosheet Hydrophobic Core" *Langmuir* **2016**, *32*, 11946.
    **Featured as the ACS Editors' Choice*
19. Proulx, C.; Noë, F.; Yoo, S.; Connolly, M. D.; Zuckermann, R. N.* "On-Resin *N*-Terminal Peptoid Degradation: Toward Mild Sequencing Conditions". *Biopolymers (Pept. Sci.)* **2016**. *106,* 726.
18. Flood, D.; Proulx, C.; Robertson, E. J.; Battigelli, A.; Wang, S.; Schwartzberg, A.; Zuckermann, R. N.* "Improved Chemical and Mechanical Stability of Peptoid Nanosheets by Photo-crosslinking the Hydrophobic Core". *Chem. Commun*. **2016**, *52*, 4753.
    **Featured as the inside front cover for the April 4th, 2016 issue.*
17. Robertson, E. J.; Battigelli, A.; Proulx, C.; Mannige, R. V.; Haxton, T. K.; Whitelam, S.; Zuckermann, R. N.* "Design, Synthesis, Assembly and Engineering of Peptoid Nanosheets". *Acc. Chem. Res.* **2016**,*49*, 379.
    **Featured as the front cover for the March 16th, 2016 issue.*

16. Mannige, R. V.; Haxton, T. K.; Proulx, C.; Robertson, E. J.; Battigelli, A.; Butterfoss, G. L.; Zuckermann, R. N.*; Whitelam, S.* "Peptoid Nanosheets Exhibit a New Secondary Structure Motif". *Nature* **2015**, *526*, 415.
**Featured in C&En news article: "Peptoids Do a Double Twist", C&En, Oct. 12th, 2015, 93(40), p.30.*
15. Proulx, C.; Yoo, S.; Connolly. M. D.; Zuckermann, R. N.* "Accelerated Submonomer Solid-Phase Synthesis of Peptoids Incorporating Multiple Substituted *N*-Aryl Glycine Monomers". *J. Org. Chem.* **2015,** *80*, 10490.
**Featured as the front cover for the November 6th, 2015 issue.*
14. Sanii, B.; Haxton, T. K.; Olivier, G. K.; Cho, A.; Barton, B.; Proulx, C.; Whitelam, S.; Zuckermann, R. N.* "Structure-Determining Step in the Hierarchical Assembly of Peptoid Nanosheets". *ACS Nano* **2014**, *8*, 11674-11684.
13. Robertson, E. J.; Olivier, G. K.; Qian, M.; Proulx, C.; Zuckermann, R. N.*; Richmond, G. L.* "Assembly and Molecular Order of Two-Dimensional Peptoid Nanosheets at the Oil-Water Interface". *Proc. Natl. Acad. Sci.* **2014**, *111*,13284-13289.
12. Zhang, J.; Proulx, C.; Tomberg, A.; Lubell, W. D.* "Multicomponent Diversity-Oriented Synthesis of Aza-Lysine-Peptide Mimics". *Org. Lett.* **2014**, *16*, 298-301.
11. Proulx, C.; Lubell, W. D.* "Analysis of *N*-amino-imidazolin-2-one Peptide Turn Mimic 4-position Substituent Effects on Conformation by X-ray Crystallography". *Biopolymers (Pept. Sci.)* **2014**, *102*, 7-15.
10. Proulx, C.; Lubell, W. D.* "*N*-Amino-imidazolin-2-one Peptide Mimic Synthesis and Conformational Analysis". *Org. Lett.* **2012**, *14*, 4552-4555.
**Article recognized as a significant contribution in the field of peptide sciences by Dr. Roger Freidinger (F1000 Faculty).*
9. García-Ramos, Y.; Proulx, C.; Lubell, W. D.* "Synthesis of Hydrazine and Azapeptide Derivatives by Alkylation of Carbazates and Semicarbazones". *Can. J. Chem.* **2012**, *90*, 985-993.
8. Proulx, C.; Picard, É.; Boeglin, D.; Pohankova, P.; Chemtob, S.; Ong, H.; Lubell, W. D.* "Azapeptide Analogs of the Growth Hormone Releasing Peptide 6 as Cluster of Differentiation 36 Receptor Ligands with Reduced Affinity for the Growth Hormone Secretagogue Receptor 1a". *J. Med. Chem.* **2012**, *55*, 6502–6511.
7. Sabatino, D.; Proulx, C.; Pohankova, P.; Ong, H.; Lubell, W. D.* "Structure-Activity Relationships of GHRP-6 Azapeptide Ligands of the CD36 Scavenger Receptor by Solid-Phase Submonomer Azapeptide Synthesis". *J. Am. Chem. Soc.* **2011**, *133*, 12493-12506.
6. Proulx, C.; Sabatino, D.; Hopewell, R.; Spiegel, J.; García Ramos, Y.; Lubell, W. D.* "Azapeptides and their Therapeutic Potential". *Future Med. Chem.* **2011**, *3*, 1139–1164.
5. Bolduc, O. R.; Lambert-Lanteigne, P.; Colin, D. Y.; Zhao, S. S.; Proulx, C.; Boeglin, D.; Lubell, W. D.; Pelletier, J. N.; Féthière, J.; Ong, H.; Masson, J.-F.* "Modified Peptide Monolayer Binding His-tagged Biomolecules for Small Ligand Screening with SPR Biosensors". *Analyst* **2011**, *136*, 3142-3148.
4. Proulx, C.; Lubell, W. D.* "Aza-1,2,3-triazole-3-alanine Synthesis via Copper-Catalyzed 1,3-Dipolar Cycloaddition on Aza-progargylglycine". *J. Org. Chem*. **2010**, *75*, 5385-5387.
**Article in Synfacts (2010) 11: 1311.*
3. Proulx, C.; Lubell, W. D.* "Copper-Catalyzed *N*-Arylation of Semicarbazones for the Synthesis of Aryl-Azaglycine Containing Azapeptides". *Org. Lett.* **2010**, *12*, 2916-2919.
2. Bourguet, C. B.; Proulx, C.; Klocek, S.; Sabatino, D.; Lubell, W. D.* "Solution-phase Submonomer Diversification of Aza-dipeptide Building Blocks and their Application in Aza-peptide and Aza-DKP Synthesis". *J. Pept. Sci.* **2010**, *16*, 284-296.
1. Sabatino, D.; Proulx, C.; Klocek, S.; Bourguet, C. B; Boeglin, D.; Ong, H.; Lubell, W. D.* "Exploring Side-Chain Diversity by Submonomer Solid-Phase Aza-Peptide Synthesis". *Org. Lett.* **2009**, *11*, 3650-3653.

Patents

2. "Peptidomimetics Comprising *N*-Amino Cyclic Urea Residues and Uses Thereof" Lubell, William D.; Ong, Huy; Proulx, Caroline; Hopewell, Robert; Beauregard, Kim; García Ramos, Yésica, provisional patent No. US 61/655,682 filed June 5th, 2012.
1. "Azapeptides as CD36 Binding Compounds" Ong, Huy; Chemtob, Sylvain; Lubell, William D.; Boeglin, Damien, Proulx, Caroline, Sabatino, David, Sajjadi, Zohreh, serial No. PCT/CA2008/001162 Canada, USA, PCT filed June 18, 2008.

Refereed book chapters, conference proceedings, and other contributions

5. Sun, J.; Proulx, C.; Zuckermann, R. N. Precision sequence control in bioinspired peptoid polymers. In *Sequence-Controlled Polymers: Synthesis, Self-Assembly, and Properties*, Jean-François Lutz,

Makoto Ouchi, Tara Meyer and Mitsuo Sawamoto (Eds.) ACS Symposium Series; American Chemical Society: Washington, DC., 2014, 1170, pp. 25-53.

4. Proulx, C.; Lubell, W. D. "*O*-(3,4-Dihydro-4-oxo-1,2,3-benzotriazin-3-yl)-*N,N,N',N'*-tetramethyluronium tetrafluoroborate" *Encyclopedia of Reagents for Organic Synthesis*, 2012. A. B. Charette, D. Crich, P. L. Fuchs, G. A. Molander (Eds); John Wiley & Sons Ltd.: Chichester, 2nd Ed.; (I.D.: RN01543).
3. Proulx, C.; Lubell, W. D. "*O*-(6-Chloro-1H-benzotriazol-1-yl)-*N,N,N',N'*-tetramethyluronium tetrafluoroborate" *Encyclopedia of Reagents for Organic Synthesis*, 2012. A. B. Charette, D. Crich, P. L. Fuchs, G. A. Molander (Eds); John Wiley & Sons Ltd.: Chichester, 2nd Ed.; (I.D.: RN01544).
2. Proulx, C.; Lubell, W. D. Synthesis of [Azaphenylglycine^4]- and [Aza-1-phenyl-2,3-triazole-3-alanine^4]Growth Hormone Releasing Peptide-6 and Comparison of their Conformations with [AzaPhe^4]GHRP-6. In *Peptides: Building Bridges. Proceedings of the 22nd American Peptide Symposium*, Lebl, M., Ed. Prompt Scientific Publishing: San Diego, CA, 2011; pp 80-81.
1. Proulx, C.; Lubell, W. D. Solid-Phase Synthesis of Aza-Proline Analogs of GHRP-6. In *Peptides: Breaking Away. Proceedings of the 21st American Peptide Symposium*, Lebl, M., Ed. Prompt Scientific Publishing: San Diego, CA, 2009; pp 56-57.

Invited Lectures/Oral Presentations

3. Appalachian State University (November 2019).
2. Boulder Peptide Symposium (September 2019).
1. Seton Hall University (April 2019).

Oral Presentations

11. Proulx, C. "Aerobic oxidation of N-aryl peptides for catalyst-free oxime ligations", Appalachian State University, Boone, NC, November 1st, 2019.
10. Proulx, C. "New strategies for Ketoxime peptide ligations", Boulder Peptide Symposium 2019, Boulder, CO, September 23-26, 2019.
9. Proulx, C. "Oxime ligation via in situ oxidation of N-phenylglycinyl peptides", Seton Hall University, South Orange, NJ, April 9th, 2019.
8. Proulx, C. "*In situ* oxidation of *N*-phenylglycinyl peptides for oxime bond formation at neutral pH", American Peptide Symposium 2019, Monterey, CA, June 22-27, 2019.
7. Guthrie, Q. A. E; Proulx, C.* "Aerobic oxidation of *N*-phenylglycinyl peptides for catalyst-free oxime ligations", American Chemical Society (ACS) meeting, Orlando, Florida, March 31–April 4, 2019.
6. Proulx, C.; Yoo, S.; Connolly, M. D.; Zuckermann, R. N. "Molecular Engineering of the Peptoid Nanosheet Hydrophobic Core", Canadian Society for Chemistry (CSC) meeting, Ottawa, Ontario, June 13–17, 2015.
5. Proulx, C.; Yoo, S.; Connolly, M. D.; Zuckermann, R. N. "Influence of Backbone Flexibility on the Two-dimensional Assembly of Peptoid Nanosheets", American Chemical Society (ACS) meeting, San Francisco, California, August 10-14, 2014.
4. Proulx, C.; Yoo, S., Zuckermann, R. N. "Improvements in the Solid-Phase Synthesis of Peptoids Incorporating Weak Nucleophile Submonomers", Canadian Society for Chemistry (CSC) meeting, Vancouver, British Columbia, June 1–5, 2014.
3. Zhang, J.; Proulx, C.; Lubell, W. D. "Multi-component Diversity-Oriented Synthesis of Aza-lysine-peptide Mimics", Canadian Society for Chemistry (CSC) meeting, Vancouver, British Columbia, June 1–5, 2014.
2. Proulx, C.; Lubell, W. D. "Tuning the selectivity of GHRP-6 towards the CD36 vs GHS-R1a receptor by exploiting the reactivity of semicarbazones and aza-propargyl glycine in combinatorial azapeptide synthesis", Canadian Society for Chemistry (CSC) meeting, Montréal, Québec, June 5–9, 2011.
1. Proulx, C.; Lubell, W. D. "Copper-catalyzed *N*-arylation of a semicarbazone building block for the parallel synthesis of aryl-azaglycine containing azapeptides", Canadian Society for Chemistry (CSC) meeting, Toronto, Ontario, May 29 – June 2, 2010.

Poster Presentations

10. Guthrie, Q. A.; Proulx, C.; "Oxime ligation *via in situ* oxidation of *N*-phenylglycinyl peptides", poster presented as part of the Chemistry and Biology of Peptides Gordon Research Conference (GRC), Ventura, California, February 11-16, 2018.
9. Proulx, C.; Su, J. K.; Yoo, S.; Olivier, G. K.; Garcia, R. L.; Connolly, M. D.; Mannige, R. V.; Haxton, T. K.; Whitelam, S.; Zuckermann, R. N. "Molecular Engineering of the Peptoid Nanosheet Hydrophobic Core", poster presented as part of the Annual User Meeting, Berkeley, California, August 25-26, 2014.

8. Proulx, C.; Lubell, W. D. “In search of azapeptide analogs of GHRP-6 with selective affinity for the CD36 vs GHS-R1a receptor: exploiting the reactivity of semicarbazones and aza-propargyl glycine in combinatorial azapeptide synthesis”, poster presented as part of the American Peptide Symposium (APS), San Diego, California, June 25–30, 2011.
7. Proulx, C.; Lubell, W. D. “Synthesis of substituted imidazolinones via a cationic gold(I)-mediated intramolecular cyclization”, poster presented as part of the Canadian Society for Chemistry (CSC) meeting, Montréal, Québec, June 5–9, 2011.
6. Proulx, C.; Lubell, W. D. “Teaching haemoglobin to third graders”, poster presented as part of the Canadian Society for Chemistry (CSC) meeting, Montréal, Québec, June 5–9 2011.
5. Proulx, C.; Lubell, W. D. “Copper-catalyzed *N*-arylation of semicarbazones for the synthesis of aza-arylglycine containing aza-peptides”, poster presented as part of the American Chemical Society (ACS) meeting, San Francisco, California, March 21–25, 2010.
4. Proulx, C.; Lubell, W. D. “Cu(I)-catalyzed *N*-arylation of semicarbazones for the synthesis of aryl-aza glycine containing azapeptides”, poster presented as part of the Ontario Minisymposium in Synthetic and Bioorganic Chemistry (QOMSBOC) meeting, Québec, Québec, Oct 30–Nov 1, 2009.
3. Proulx, C.; Boeglin, D.; Chemtob, S.; Ong, H.; Lubell, W. D. “Aza-peptide analogs of GHRP-6 with selective receptor affinity for CD36 versus GHS-R1a”, poster presented as part of the American Peptide Symposium (APS) meeting, Bloomington, Indiana, June 7–12, 2009. *Poster presentation among the semi-finalists of the Young Investigator poster competition. Travel grant, valued at 100$.*
2. Proulx, C.; Boeglin, D.; Chemtob, S.; Ong, H.; Lubell, W. D. “Elucidation of structural and conformational requirements for GHRP-6 binding to the GHSR-1a and CD36 receptors using aza-peptides”, poster presented as part of the Québec-Ontario Minisymposium on Bio-Organic and Synthetic Chemistry (QOMSBOC) meeting, Toronto, Ontario, November 2008.
1. Proulx, C.; Boeglin, D.; Chemtob, S.; Ong, H.; Lubell, W. D. “Aza-peptide analogs of GHRP-6 with selective receptor affinity for CD36 versus GHS-R1a”, poster presented as part of the American Chemical Society (ACS) meeting, Philadelphia, Pennsylvania, August 17–21, 2008.

Conference discussion leader / session chair

2. American Peptide Symposium, Nanomaterials and Peptide Assemblies session, Monterey, CA (June 2019)
1. GRC on Chemistry and Biology of Peptides, Advances in Peptide and Protein Synthesis session. Ventura, CA (Feb 2018).

TEACHING EXPERIENCE

Courses taught at NCSU

CH 721 – Physical Organic Chemistry (entry-level graduate course)
- Fall 2019 (24 students)
- Fall 2018 (22 students)
- Fall 2017 (24 students)
- Fall 2016 (34 students)

CH 223 – Organic Chemistry II (undergraduate course)
- Spring 2020 (200 students)
- Spring 2019 (206 students)
- Spring 2018 (126 students)

CH610G – Introduction to Graduate Studies, co-taught with Prof. Denis Fourches
- Fall 2019 (30 students)
- Fall 2018 (32 students)
- Fall 2017 (37 students)

CH 601/801 – Chemistry Seminar Program (seminar course for all enrolled graduate students)
- Fall 2019 (105 students)
- Spring 2019 (91 students)
- Fall 2018 (103 students)
- Spring 2018 (107 students)
- Fall 2017 (114 students)
- Spring 2017 (100 students)

Students mentored at NCSU

Graduate Students

Current

Quibria Guthrie (10/16 – present, oxime Ligations), B.Sc. University of Wisconsin, Milwaukee.
Carolynn Davern (06/18 – present, peptoids), B.Sc. North Carolina Wesleyan College.
Hailey Young (10/18 – present, *N*-arylpeptide synthesis and oxime Ligations), B.Sc. UNC Wilmington.
Maxwell Bowles (10/19 – present, azapeptides), B.Sc. Southern Utah University.
Ellen Warner (10/20 – present, oxime and hydrazone ligations), B.Sc. Davidson College.

Past Graduates

Evan Willis (M.Sc. 2020)
Michael McMechen (M.Sc. 2018, now at Alcami corporation)
W. Tyler Price (graduate student 10/16 – 01/19)

Undergraduate and High School Students

Current

Briley Humphrey (B. Sc. in progress, NCSU, Chemistry, 08/19 – present)
Adam Rosfi (B. Sc. in progress, NCSU, Chemistry, 08/19 – present)

Past

Preston Gourville (B.Sc. 2020 NCSU, Chemistry, Goodnight Scholar, 10/17 – 04/20)
Brandon Lowe (B. Sc. in progress, Saint Vincent College, NSF REU student, 05/19 – 08/19)
Sophia Cornish (High School student, ACS project SEED program, 05/19 – 08/19)
Landon Brazda (B.Sc. in progress, NCSU, Biomedical Engineering, 10/18 – 04/19)
Jazmine Lumpan (B.Sc. St. Edward's U, Biochemistry), NSF REU student, 05/18 – 08/18)
Carolynn Davern (B.Sc. 2018, NC Wesleyan College, Chemistry, NSF REU student, 05/17 – 08/17)

Training of Undergraduate and Postbaccalaureate Students prior to NCSU

Falko Noe (B. A. Biochemistry and Molecular Biology, UC Berkeley 2015, Zuckermann lab 09/14 – 05/15)
Dillon Flood (B. Sc. Chemistry, UC Berkeley 2016, Zuckermann lab 05/14 – 05/16)
Stan Yoo (B. Sc. Chemistry, UC Berkeley 2013, Zuckermann lab 09/13 – 08/14)
Anna Tomberg (B. Sc. McGill University, Lubell lab summer 2011)
Émilie Canuel (B. Sc. Université de Montréal, Lubell lab summer 2011)

Teaching Assistant Experience (prior to NCSU)

Fall 2009-2011	Teaching assistant, organic chemistry laboratory for 1st year chemistry B. Sc. students.
Winter 2009	Teaching assistant, organic chemistry laboratory for 2nd year B. Sc. biochemistry students.

SERVICE

Professional Service on Campus

2016 – present	Graduate Students Advisory Committee
2018 – present	METRIC Magnetic Resonance User Committee
2018 – present	Faculty Advisory Committee for the College of Sciences
2017 – 2019	Instructor, Introduction to Graduate Studies (CH610G)
2017 – 2019	NSF-REU Mentor (3 summers)
2019	Department of Chemistry Lecturer Search Committee
2019	Goodnight Scholars Online Application Reviewer
2019	Department of Chemistry Faculty Search Committee

Professional Service off Campus

2016 – present	Reviewer, *Chemical Society Reviews*, *Science*, *Organic Letters*, *Journal of Organic Chemistry, Journal of Medicinal Chemistry*, *Chemical Science*, *Chemical Communications*, *Peptide Science*, *ChemBioChem*.
2019 – present	Fondation Lucien Piché scholarship program reviewing committee.
2020 – present	Proposal Review Board, the Molecular Foundry (Biological Nanostructures Facility)
2020 – present	Co-organizer, online peptoid symposia series 2020/2021.

2020	Guest Editor, Frontiers Chemistry, Special issue on "*Polyamide backbone modification in peptide and protein science*".
2018	External Reviewer, Natural Sciences and Engineering Research Council of Canada (NSERC).

RESEARCH SUPPORT

Faculty Research and Professional Development Fund, College of Sciences (2018-2019 / $3,000)
"Rapid Expansion of Chemical Space in Peptidomimetics: Using Aza-amino Acids as Backbone Metal Chelation Sites to Modulate Dihedral Angles in Short Peptides".

OUTREACH

2020	Zoom classes for public school students in North Carolina.
October 2011	Teaching haemoglobin to third graders, "Molecules of Life" project (MLP), http://moleculesoflife.ca.