

CURRICULUM VITAE
MARGARET E. OLSON, Ph.D.

Contact Information

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Educational Background

2016 – 2019	Postdoctoral Fellow in Chemistry, Scripps Research
2010 – 2015	Ph.D. in Medicinal Chemistry, University of Minnesota
2006 – 2010	B.A. in Biology (<i>cum laude</i>), Illinois Wesleyan University

Professional Appointments

Feb 2019 – Present	Assistant Professor of Medicinal Chemistry (Tenure-Track), Roosevelt University, College of Science, Health & Pharmacy <ul style="list-style-type: none">Building an independent research program focused on combating antimicrobial drug resistance
Jan 2016 – Jan 2019	Postdoctoral Fellow in Chemistry, The Scripps Research Institute, Department of Chemistry (Advisor: Professor Kim D. Janda) <ul style="list-style-type: none">Hapten design and adjuvant optimization for methamphetamine and cocaine vaccines.Strategies for the irreversible inhibition of Botulinum Neurotoxin A.
Jun 2010 – Aug 2015	Graduate Fellow in Medicinal Chemistry, University of Minnesota, Department of Medicinal Chemistry (Advisor: Professor Daniel A. Harki) <ul style="list-style-type: none">High-throughput screening and chemical synthesis for the discovery of APOBEC3 DNA cytosine deaminase inhibitors.
Jun 2009 – Jul 2009	Undergraduate Research in Medicinal Chemistry, Chulabhorn Research Institute, Bangkok, Thailand (Advisor: Professor Poonsakdi Ploypradith) <ul style="list-style-type: none">Optimized the synthesis of 4,4-disubstituted-2-arylchromans via <i>ortho</i>-quinone methide precursors
Jan 2008 – Apr 2009	Undergraduate Research in Organic Chemistry, Illinois Wesleyan University, Department of Chemistry (Advisor: Professor Ram S. Mohan) <ul style="list-style-type: none">Iron (III) tosylate catalyzed deprotection of aromatic acetals in water

Awards & Honors

2022	Faculty of the Year Award, P1 Year – Class of 2024, Roosevelt University, College of Science, Health, and Pharmacy
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2014 – 2015	Abul-Hajj/Hanna Exceptional Graduate Student Award in Medicinal Chemistry, University of Minnesota, Department of Medicinal Chemistry
2014	Best Abstract, 5 th Annual Masonic Cancer Center Research Symposium, University of Minnesota, Masonic Cancer Center
2012	Women Chemists Committee / Eli Lilly & Company Travel Award, American Chemical Society
2010	National Science Foundation – Research Experience for Undergraduates Chemistry Leadership Group Travel Award
2010	Phi Beta Delta, Epsilon Chi Chapter (International Studies Honor Society), Illinois Wesleyan University
2008 – 2010	Beta Beta Beta (Biological Honor Society), Illinois Wesleyan University

Grant Support

COMPLETED

**Summer Research Grant
Roosevelt University**

**06/01/24-08/31/24
Role: PI**

Drug Repurposing to Improve Chemotherapeutic Response in Ovarian Cancer

Following a high-throughput screen of FDA-approved therapeutics for their ability to sensitive drug resistant OvCa cells to carboplatin, the putative protease inhibitor Aloxistatin was identified as a lead. Previous reports of Aloxistatin pharmacology are multifaceted; therefore, its mechanism of OvCa sensitization to carboplatin is convoluted. To annotate this mechanism, a protein pulldown probe based on the HTS hit Aloxistatin was sought to identify a novel target for ovarian cancer drug discovery. Work during this funding period completed the synthesis of an Aloxistatin pulldown probe and a rigosertib pulldown probe. Preliminary cellular assays to confirm probe activity were initiated. Two RU PharmD candidates were trained during this period.

**HHMI Inclusive Excellence Mini Grant
Roosevelt University**

**06/01/24-08/31/24
Role: PI**

Improving LpxC Inhibition with Bifunctional Small Molecules

This research project aims to redesign LpxC inhibitors with electrophilic warheads in place of canonically hydrophobic side chains to improve the pharmacokinetic properties and safety profile of current clinical candidates. Unfortunately, a previously reported fluorescence-based assay for LpxC inhibition failed to reproduce in our laboratory. During this grant period, one RU undergraduate pursued troubleshooting of the assay, first determining that the original assay did not meet the sensitivity requirements of our fluorometer. A more sensitive fluorophore for detecting primary amines was then explored.

**HHMI Inclusive Excellence Mini Grant
Roosevelt University**

**01/01/24-05/31/24
Role: PI**

Drug Repurposing to Improve Chemotherapeutic Response in Ovarian Cancer

Following a high-throughput screen of FDA-approved therapeutics for their ability to sensitive drug resistant OvCa cells to carboplatin, the putative protease inhibitor Aloxistatin was identified as a lead. Previous reports of Aloxistatin pharmacology are multifaceted; therefore, its mechanism of OvCa sensitization to carboplatin is convoluted. To annotate this mechanism, a protein pulldown probe based on the HTS hit Aloxistatin was sought to identify a novel target for ovarian cancer drug discovery. Work during this funding period continued the synthesis of an Aloxistatin pulldown probe. Two RU undergraduates were trained during this period, each receiving \$500 stipends.

**HHMI Inclusive Excellence Mini Grant
Roosevelt University**

**09/01/23-12/31/23
Role: PI**

Drug Repurposing to Improve Chemotherapeutic Response in Ovarian Cancer

Following a high-throughput screen of FDA-approved therapeutics for their ability to sensitive drug resistant OvCa cells to carboplatin, the putative protease inhibitor Aloxistatin was identified as a lead. Previous reports of Aloxistatin pharmacology are multifaceted; therefore, its mechanism of OvCa sensitization to carboplatin is convoluted. To annotate this mechanism, a protein pulldown probe based on the HTS hit Aloxistatin was sought to identify a novel target for ovarian cancer drug discovery. Work during this funding period began the synthesis of an Aloxistatin pulldown probe. Two RU undergraduates were trained during this period, each receiving \$500 stipends.

HHMI Inclusive Excellence Mini Grant
Roosevelt University

06/01/23-08/31/23
Role: PI

Improving LpxC Inhibition with Bifunctional Small Molecules

This research project aims to redesign LpxC inhibitors with electrophilic warheads in place of canonically hydrophobic side chains to improve the pharmacokinetic properties and safety profile of current clinical candidates. During this grant period, our 3-step synthetic route was optimized and synthetic routes to analogues were developed. Two RU undergraduates and one RU PharmD candidate were mentored via this mechanism. The RU undergraduates each received \$1000 stipends.

HHMI Inclusive Excellence Mini Grant
Roosevelt University

06/01/22-08/31/22
Role: PI

RNA-Binding Chaperone Hfq as a Novel Target for Antibacterial Drug Development

This research project aims to inhibit a conserved pathway in bacterial gene expression to develop a next-generation approach in anti-virulence drug discovery. The Olson Laboratory serves as the first synthetic chemistry-focused research group investigating inhibition of Hfq-regulated gene expression. Through this grant mechanism, two PharmD candidates evaluated a library of 6 linear and 8 cyclic peptides for inhibition of *E. coli* growth and Hfq-mediated gene expression. Most excitingly, the linear peptide YKH was found to significantly slow *E. coli* growth when dosed with sub-therapeutic concentrations of ampicillin.

Summer Research Grant
Roosevelt University

06/01/22-08/31/22
Role: PI

Drug Repurposing to Improve Chemotherapeutic Response in Ovarian Cancer

Following a high-throughput screen of FDA-approved therapeutics for their ability to sensitive drug resistant OvCa cells to carboplatin, this intramural grant funded the purchase of 15 hit molecules for purity/identity validation and secondary, confirmatory assays. From this effort, three small molecules were elevated to lead status and founded our collaborative NIH R15 submission in February 2024.

New Investigator Award
AACP

03/01/21-02/28/22
Role: PI

RNA-Binding Chaperone Hfq as a Novel Target for Antibacterial Drug Development

This research project aims to inhibit a conserved pathway in bacterial gene expression to develop a next-generation approach in anti-virulence drug discovery. The Olson Laboratory serves as the first synthetic chemistry-focused research group investigating inhibition of Hfq-regulated gene expression.

Summer Research Grant
Roosevelt University

06/01/21-08/31/21
Role: PI

Improving LpxC Inhibition with Bifunctional Small Molecules

This research project aims to redesign LpxC inhibitors with electrophilic warheads in place of canonically hydrophobic side chains to improve the pharmacokinetic properties and safety profile of current clinical candidates. During this grant period, our original, cumbersome synthetic route was streamlined from ~7 steps to 3. One RU PharmD candidate was mentored via this mechanism.

Fellowship Support

COMPLETED

F32 DA044692
NIH/NIDA

07/01/17 – 01/15/19
Role: PI

Chemical Strategies to Probe the Mechanism of Liposomal Tucaresol Immunopotential in a Drug of Abuse Vaccine

Vaccines for drugs of abuse have achieved limited clinical utility due to an inability to generate robust and consistent immune responses among broad patient populations. As a result, there is an urgent need to develop new vaccine adjuvants. Liposomal tucaresol offers a new adjuvant platform applicable to all drugs of abuse. By elucidating liposomal tucaresol's mechanism of immunopotential a foundation for the future development of this next generation adjuvant will be accomplished.

F31 CA183246
NIH/NCI

09/01/14 – 08/31/15
Role: PI

Chemical Probes of Endogenous Mutation: Small Molecule APOBEC3B Inhibitors

Breast cancer is the second leading cause of cancer death among women and approximately 1-in-8 women in the United States will develop an invasive form of breast cancer during her lifetime. Recently, the human enzyme APOBEC3B was shown to be an endogenous driver of mutation in breast cancer. Because mutation enables cancer to metastasize and to develop chemotherapeutic resistance, the discovery and optimization of small molecule inhibitors of APOBEC3B may provide a foundation for the future development of state-of-the-art treatments for breast cancer.

Predocctoral Fellowship
ACS Division of Medicinal Chemistry

09/01/13 – 08/31/14
Role: PI

Development of Small Molecule Inhibitors of the Breast Cancer Oncoprotein APOBEC3B

A new paradigm of endogenous mutation, namely enzyme-catalyzed DNA cytosine deamination (C-to-U), has been demonstrated to actively contribute to cancer development. Genome sequencing of many cancers, including breast cancer, displays this APOBEC3B-specific mutation pattern. In this proposal, I will test the innovative hypothesis that small molecule inhibition of A3B in breast cancer cells will decrease the overall DNA mutation rate, which should in turn slow the rate of tumor evolution.

T32 GM 8700-14
NIH/NIGMS

09/01/11 – 08/31/13
Role: Trainee

Development of APOBEC3G Inhibitors to Mortalize HIV-1

The cellular protein APOBEC3G (A3G) deaminates cytosine bases in newly synthesized HIV-1 cDNA during reverse transcription. The resulting uracil bases can template the insertion of adenines upon synthesis of the cDNA strand, thus resulting in G-to-A mutations. This proposal hypothesizes that inhibiting A3G will slow HIV-1's high mutation rate to the extent that normal immune clearance mechanisms can overcome viral infection, which could result in a curative therapy

Bighley Fellowship
University of Minnesota, College of Pharmacy

09/01/11 – 08/31/12
Role: PI

Optimization of APOBEC3B Inhibitors for Breast Cancer Therapeutic Development

Genomic mutation fuels cancer development, propagation, and relapse. For years, exogenous agents, such as sunlight and chemicals (e.g., nicotine/DDT), as well as endogenous processes (e.g., DNA replication errors) have been the accepted sources of cancer-causing mutation. However, the origin of much acquired mutation remains unknown. A new source of endogenous mutation, APOBEC3B-catalyzed DNA cytosine deamination (cytosine-to-uracil; C-to-U), has been determined to actively contribute to cancer development. In this proposal, my objective is to test the hypothesis that small molecule inhibition of A3B in breast cancer cells will decrease their overall mutation rate.

Portoghese Fellowship (Academic Merit Award)

09/01/10 – 08/31/11

Publications

26. Albanna HR, Gjoni A, Robinette D, Rodriguez G, Djambov L, Olson ME^{*}, Hart PC^{*}. "Activation of adrenoceptor alpha-2 (ADRA2A) promotes chemosensitization to carboplatin in ovarian cancer cell lines" **Curr. Issues Mol. Biol.** **2023**, *45*, 9566-9578.
25. Olson ME^{*}, Hornick MG, Stefanski A, Albanna HR, Gjoni A, Hall GD, Hart PC, Rajab IM, Potempa LA. "A biofunctional review of C-reactive protein (CRP) as a mediator of inflammatory and immune responses: differentiating how pentameric and modified CRP isoforms affect responses" **Front. Immunol.** **2023**. <https://doi.org/10.3389/fimmu.2023.1264383>.
24. Ferrins, L, Olson ME, Haranahalli K, Grenier-Davies ML, Boudreau MW, Matagne B, Donckele EJ, Borsari C. "YMCC and YSN: An Opportunity for Scientific and Cultural Exchange" **J. Med. Chem.** **2023**, *66*, 11591-11592.
23. Aldrich J, Allen, S, Araujo E, Cyr SK, Bronson J, Bryant-Friedrich A, DiMauro E, Dzierba C, Garner A, Georg GI, Goodwin N, Haranahalli K, Huang R, Leftheris K, May-Dracka TL, Olson ME, Blanco M-J. "Enhancing the Visibility of Women in the ACS Division of Medicinal Chemistry (ACS MEDI)" **J. Med. Chem.** **2023**, *66*, 6, 3651–3655.
22. Ferrins, L, Araujo, E, Boudreau, MW, Grenier-Davies, MC, Haranahalli, K, Journigan, VB, Klug, DM, Olson ME. "Engaging the medicinal chemists of tomorrow" **J. Med. Chem.** **2022**, *65*, 6353-6355.
21. Hornick, MG, Olson ME, Jadhav AL. "SARS-CoV-2 psychiatric sequelae: A review of neuroendocrine mechanisms and therapeutic strategies" **Int. J. Neuropsychopharmacol.** **2022**, *12*, 1-12.
20. Potempa LA, Rajab IM, Olson ME, Hart PC. "C-reactive protein and cancer. Interpreting the differential bioactivities of its pentameric (pCRP) and monomeric, modified (mCRP) isoforms" **Front. Immunol.** **2021**, <https://doi.org/10.3389/fimmu.2021.744129>.
19. Turner LD, Nielsen AL, Lin L, Pellett S, Sugane T, Olson ME, Janda KD. "Exploring warhead reactivity and function for covalent inhibition of Botulinum neurotoxin A" **RSC Med. Chem.** **2021**, *12*, 960-969.
18. Belz T, Olson ME, Giang E, Law M, Janda KD. "Synthesis of substituted-benzaldehyde adjuvants towards the development of a Hepatitis C virus vaccine model" **ACS Med. Chem. Lett.** **2020**, *11*, 2428-2432.
17. Lin L[‡], Olson ME[‡], Sugane T[‡], Turner LD, Tararina MA, Nielsen AL, Kurbanov EK, Pellett S, Johnson EA, Cohen SM, Allen KN, Janda KD. "A catch and anchor approach to combat both toxicity and longevity of Botulinum neurotoxin A" **J. Med. Chem.** **2020**, *63*, 11100–11120.

[‡]Authors contributed equally to this work.

16. Rajab IM, Majerczyk D, Olson ME, Addams JMB, Choe ML, Nelson MS, Potempa LA. "C-reactive protein in gallbladder diseases – diagnostic and therapeutic insights" **Biophys. Rep.** **2020**, *6*, 49-67.
15. Olson ME, Sugane T, Zhou B, Janda KD. "Consequence of hapten stereochemistry: An efficacious methamphetamine vaccine" **J. Am. Chem. Soc.** **2019**, *141*, 14089-14092.
14. Lin L, Olson ME, Eubanks LM, Janda KD. "Strategies to counteract Botulinum neurotoxin A: Nature's deadliest biotoxin" **Acc. Chem. Res.** **2019**, *52*, 2322-2331.
13. Olson ME, Eubanks LM, Janda KD. "Chemical interventions for the opioid crisis: Key advances and remaining challenges" **J. Am. Chem. Soc.** **2019**, *141*, 1798-1806.
12. Banks ML, Olson ME, Janda KD. "Immunopharmacotherapies for treating opioid use disorder" **Trends Pharmacol. Sci.** **2018**, *39*, 908-911.
11. Kimishima A, Olson ME, Natori Y, Janda KD. "Efficient syntheses of cocaine vaccines and their in vivo evaluation" **ACS Med. Chem. Lett.** **2018**, *9*, 411-416.

^{*}ACS Editors' Choice

^{*}Featured on the Front Cover of *ACS Med. Chem. Lett.*

10. Kimishima A, Olson ME, Janda KD. "Investigations into the efficacy of multi-component cocaine vaccines" **Bioorg. Med. Chem. Lett.** **2018**, *28*, 2779-2783.
9. Olson ME, Janda KD. "Vaccines to combat the opioid crisis" **EMBO Rep.** **2018**, *19*, 5-9.
*Commentary: First in Human: Opioid epidemic spurs renewed research into drug misuse vaccines – S&P Global Market Intelligence; <https://www.spglobal.com/marketintelligence/en/news-insights/trending/Oq51o6WadKoQNnKNExCgYQ2>
8. Olson ME, Harris RS, Harki DA. "APOBEC enzymes as targets for virus and cancer therapy" **Cell Chem. Biol.** **2018**, *25*, 36-49.
7. Breunig SL, Olson ME, Harki DA. "Rapid, Microwave Accelerated Synthesis of [1,2,4] Triazolo[3,4-b][1,3,4]oxadiazoles from 4-Acylamino-1,2,4-Triazoles" **Tetrahedron Lett.** **2016**, *57*, 4056-4060.
6. Olson ME, Abate-Pella D, Perkins AL, Li M, Carpenter MA, Rathore A, Harris RS, Harki DA. "Oxidative reactivities of 2-furylquinolines: Ubiquitous scaffolds in common high-throughput screening libraries" **J. Med. Chem.** **2015**, *58*, 7419-7430.
*Commentary: False Positives Are Always Waiting – In the Pipeline (Derek Lowe)
<http://blogs.sciencemag.org/pipeline/archives/2015/09/16/10569>
5. Brand LJ, Olson ME, Ravindranathan P, Guo H, Kempema AM, Andrews TE, Chen X, Raj GV, Harki DA, Dehm SM. "EPI-001 is a selective peroxisome proliferator-activated receptor-gamma modulator with inhibitory effects on androgen receptor expression and activity in prostate cancer" **Oncotarget** **2015**, *6*, 3811-3824.
4. Olson ME, Li M, Harris RS, Harki DA "Small molecule APOBEC3G DNA cytosine deaminase inhibitors based on a 4-amino-1,2,4-triazole-3-thiol scaffold" **ChemMedChem** **2013**, *8*, 112-117.
*Featured on the Back Cover of *ChemMedChem*
3. Struntz NB, Hu T, White BR, Olson ME, Harki DA "Inhibition of guanosine monophosphate synthetase by the substrate enantiomer L-XMP" **ChemBioChem** **2012**, *13*, 2517-2520.
2. Olson ME, Carolan JP, Chiodo MV, Lazzara PR, Mohan RS "Iron (III) tosylate-catalyzed deprotection of aromatic acetals in water" **Tetrahedron Lett.** **2010**, *51*, 3969-3971.
1. Bothwell JM, Angeles VV, Carolan JP, Olson ME, Mohan RS "A mild and chemoselective method for the deprotection of tert-butylidimethylsilyl (TBDMS) ethers using iron (III) tosylate as a catalyst" **Tetrahedron Lett.** **2010**, *51*, 1056-1058.

Presentations - Invited Seminar

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16. American Association of Colleges of Pharmacy (Aurora, CO) Oral Presentation: "Chemistry Section NIA Symposium: Investigation of Novel Strategies for Overcoming Bacterial Virulence" M.E. Olson. July 2023.
 15. Roosevelt University HSI-STEM Institute (Chicago, IL) Oral Presentation: "Pharmacy from a Chemist's Perspective" ME Olson. June 2023.
 14. Illinois Wesleyan University Pre-Health Seminar Series (Bloomington, IL) Oral Presentation: "Exploring Health Careers: Pharmacy" ME Olson. March 2023.
 13. 264th American Chemical Society National Meeting & Exposition (Chicago, IL) Oral Presentation WCC-3743420: "Investigation of novel strategies for overcoming bacterial virulence" M.E. Olson. August 2022.
 12. American Association of Colleges of Pharmacy (Grapevine, TX) Oral Presentation: "ARM Yourself for NIA Success: Understanding the Applicant-Reviewer-Mentor (ARM) Triad" A. Coop, J.M. Rimoldi, M.E. Olson. July 2022.
 11. Illinois Wesleyan University, National Science Colloquium (Bloomington, IL – Remote). Oral Presentation: "From Overcoming Antibiotic Resistance to Vaccines for Methamphetamine: Vignettes in Today's Medicinal Chemistry Landscape" M.E. Olson. October 2021.

10. Worcester Polytechnic Institute, Department of Chemistry & Biochemistry (Worcester, MA). Oral Presentation: "*Bioorganic Chemistry at the Interface of Immunology and Infectious Disease: Recent Advances in Addiction Vaccines and Botulinum Neurotoxin*" M.E. Olson. November 2018.
9. Union College, Department of Chemistry (Schenectady, NY). Oral Presentation: "*Medicinal Chemistry at the Interface of Immunology and Infectious Disease: Next-Generation Addiction Vaccines and Botulinum Neurotoxin Inhibitors*" M.E. Olson. October 2018.
8. 55th Interagency Botulism Research Coordinating Committee Meeting (Chicago, IL). Oral Presentation: "*Strategies for the irreversible inhibition of BoNT/A*" M.E. Olson, T. Sugane, L. Lin, S. Pellett, M. Tararina, E.A. Johnson, K. Allen, K.D. Janda. October 2018.
7. University of Nebraska Medical Center, Department of Pharmaceutical Sciences (Omaha, NE). Oral Presentation: "*Medicinal Chemistry at the Interface of Immunology and Infectious Disease: Next-Generation Addiction Vaccines and Botulinum Neurotoxin Inhibitors*" M.E. Olson. October 2018.
6. University of Minnesota National Institutes of Health Chemistry Biology Interface Training Grant Symposium (Minneapolis, MN). Oral Presentation: "*Chemically-driven characterization of liposomal tucaresol immunopotential*" M.E. Olson, K.D. Janda. May 2018.
5. 248th American Chemical Society National Meeting & Exposition (San Francisco, CA). Oral Presentation MEDI-309: "*Development of small molecule inhibitors of the breast cancer oncoprotein APOBEC3B*" M.E. Olson. August 2014.
4. Abul-Hajj/Hanna Exceptional Graduate Student Award in Medicinal Chemistry (Minneapolis, MN). Oral Presentation: "*Small molecule inhibitors of APOBEC3-catalyzed endogenous mutation*" M.E. Olson. May 2014.
3. 52nd MIKI Meeting-in-Miniature (Chicago, IL). Oral Presentation: "*Discovery of first-in-class inhibitors of APOBEC3 DNA cytosine deaminases*" M.E. Olson, M. Li, A.L. Perkins, M.A. Carpenter, A. Rathore, D. Abate-Pella, R.S. Harris, and D.A. Harki. April 2014.
2. Chemistry Biology Colloquium Series (Minneapolis, MN). Oral Presentation: "*Harnessing endogenous mutation by inhibiting the APOBEC3 enzymes*" M.E. Olson. October 2013.1.
1. Inaugural NIH Regional Career Development Conference at the Chemistry-Biology Interface (Urbana, IL). Oral Presentation: "*Small molecule inhibition of the APOBEC3 enzymes: A drug discovery strategy to reduce endogenous mutation*" M.E. Olson. June 2013.

Presentations - Poster

22. American Association of Colleges of Pharmacy (Aurora, CO) Poster Presentation: "Chemistry Section NIA Symposium: Investigation of Novel Strategies for Overcoming Bacterial Virulence" M.E. Olson. July 2023.
21. 54th Interagency Botulism Research Coordinating Committee Meeting (San Francisco, CA). Poster Presentation: "*Bifunctional strategies for the irreversible inhibition of BoNT/A*" M.E. Olson, L. Lin, L.M. Eubanks, K.D. Janda. October 2017.
20. 250th American Chemical Society National Meeting & Exposition (Boston, MA). Poster Presentation MEDI-126: "*Covalent chemical probes of APOBEC3 DNA cytosine deaminases*" M.E. Olson, A.L. Perkins, M. Li, R.S. Harris, D.A. Harki. August 2015.
19. University of Minnesota National Institutes of Health Chemistry Biology Training Grant Symposium (Minneapolis, MN). Poster Presentation: "*Small molecule inhibitors of APOBEC3 DNA cytosine deaminases as leads for HIV-1 and cancer therapy*" M.E. Olson, A.L. Perkins, M. Li, R.S. Harris, and D.A. Harki. May 2015.
18. 53rd MIKI Meeting-in-Miniature (Lawrence, KS). Poster Presentation: "*Small molecule inhibitors of APOBEC3 DNA cytosine deaminases as leads for HIV-1 and cancer therapy*" M.E. Olson, A.L. Perkins, M. Li, R.S. Harris, and D.A. Harki. April 2015.

17. 5th Annual Masonic Cancer Center Research Symposium (Minneapolis, MN). Poster Presentation: "*Development of small molecule inhibitors of the breast cancer oncoprotein APOBEC3B*" M.E. Olson. October 2014.
16. Structural Biology Related to HIV/AIDS - 2014 (Bethesda, MD). Poster Presentation: "*Small molecule probes of APOBEC3-catalyzed mutation*" M.E. Olson, A.L. Perkins, M. Li, R.S. Harris, and D.A. Harki. June 2014.
15. Gordon Research Conference: Bioorganic Chemistry (Andover, NH). Poster Presentation: "*Small molecule probes of APOBEC3-catalyzed endogenous mutation*" M.E. Olson, A.L. Perkins, D. Abate Pella, M. Li, M.A. Carpenter, A. Rathore, R.S. Harris, and D.A. Harki. June 2014.
14. University of Minnesota National Institutes of Health Chemistry Biology Training Grant Symposium (Minneapolis, MN). Poster Presentation: "*Discovery of an APOBEC3G inhibitor from a decomposed high-throughput screening hit*" M.E. Olson, A.L. Perkins, D. Abate Pella, M. Li, M.A. Carpenter, A. Rathore, R.S. Harris, and D.A. Harki. May 2014.
13. 247th American Chemical Society National Meeting & Exposition (Dallas, TX). Poster Presentation MEDI-336: "*Discovery of an APOBEC3G inhibitor from a decomposed high-throughput screening hit*" M.E. Olson, A.L. Perkins, D. Abate Pella, M. Li, M.A. Carpenter, A. Rathore, R.S. Harris, and D.A. Harki. March 2014.
12. 'Wisc-e-Sota' 1st Joint UMN-UW Virology Training Grant Symposium (La Crosse, WI). Poster Presentation: "*Small molecule inhibitors and probes of APOBEC3-catalyzed DNA cytosine deamination*" M.E. Olson, A.L. Perkins, D. Abate Pella, M. Li, R.S. Harris, and D.A. Harki. September 2012.
11. Inaugural NIH Regional Career Development Conference at the Chemistry-Biology Interface (Urbana, IL). Poster Presentation: "*Small molecule inhibitors and probes of APOBEC3-catalyzed DNA cytosine deamination*" M.E. Olson, A.L. Perkins, D. Abate Pella, M. Li, R.S. Harris, and D.A. Harki. June 2013.
10. 2013 Institute for Molecular Virology Symposium (Minneapolis, MN). Poster Presentation: "*Small molecule inhibitors and probes of APOBEC3-catalyzed DNA cytosine deamination*" M.E. Olson, A.L. Perkins, D. Abate Pella, M. Li, R.S. Harris, and D.A. Harki. May 2013.
9. University of Minnesota National Institutes of Health Chemistry Biology Training Grant Symposium (Minneapolis, MN). Poster Presentation: "*Small molecule inhibitors and probes of APOBEC3-catalyzed DNA cytosine deamination*" M.E. Olson, A.L. Perkins, D. Abate Pella, M. Li, R.S. Harris, and D.A. Harki. May 2013.
8. 51st MIKI Meeting-in-Miniature (Minneapolis, MN). Poster Presentation: "*Small molecule inhibitors and probes of APOBEC3-catalyzed DNA cytosine deamination*" M.E. Olson, A.L. Perkins, D. Abate Pella, M. Li, R.S. Harris, and D.A. Harki. April 2013.
7. 244th American Chemical Society National Meeting & Exposition (Philadelphia, PA). Poster Presentation MEDI-136: "*Development of 1,2,4-triazole-3-thiol based inhibitors of APOBEC3G cytosine deaminase*" M.E. Olson, M. Li, R.S. Harris, D.A. Harki. August 2012.
6. AAPS Student Chapter and the College of Pharmacy Research Office Pharmacy Research Day (Minneapolis, MN). Poster Presentation: "*Small molecule APOBEC3G cytosine deaminase inhibitors based on the 1,2,4-triazole-3-thiol scaffold*" M.E. Olson, M. Li, R.S. Harris, and D.A. Harki. May 2012.
5. University of Minnesota National Institutes of Health Chemistry Biology Training Grant Symposium (Minneapolis, MN). Poster Presentation: "*Small molecule APOBEC3G cytosine deaminase inhibitors based on the 1,2,4-triazole-3-thiol scaffold*" M.E. Olson, M. Li, R.S. Harris, and D.A. Harki. May 2012.
4. 2012 Institute for Molecular Virology Symposium (Minneapolis, MN). Poster Presentation: "*Small molecule APOBEC3G cytosine deaminase inhibitors based on the 1,2,4-triazole-3-thiol scaffold*" M.E. Olson, M. Li, R.S. Harris, and D.A. Harki. May 2012.
3. 50th MIKI Meeting-in-Miniature (Iowa City, IA). Poster Presentation: "*Design and synthesis of APOBEC3G inhibitors to mortalize HIV-1*" M.E. Olson, M. Li, R.S. Harris, and D.A. Harki. April 2012.

2. 239th American Chemical Society National Meeting & Exposition (San Francisco, CA). Poster Presentation CHED-938: "*Investigations into the synthesis of 4,4-disubstituted-2-arylchromans via ortho-quinone methide precursors*" M.E. Olson, P. Ploypradith. March 2010.
1. Illinois Wesleyan University, John Wesley Powell Research Conference 2008 (Bloomington, IL). Poster Presentation: "*Iron (III) tosylate catalyzed deprotection of acetals*" M.E. Olson, J.P. Carolan, M.P. Devore, K.K. Tasche, and R.S. Mohan. April 2008.

On-going Service

2024 – Present	Chair, Admissions Committee, Roosevelt University Pharmacy
2024 – Present	Faculty Representative, Administrative Council, Roosevelt University Pharmacy
2024 – Present	Member, Library Committee, Roosevelt University College of Science, Health & Pharmacy
2024 – Present	Member, Pharmacology Faculty Search Committee, Roosevelt University Pharmacy
2023 – Present	Member, Pharmaceutical Sciences Research Fellow/Visiting Instructor Search Committee, Roosevelt University Pharmacy
2019 – Present	Member, Integrated Sequence Committee, Roosevelt University, College of Pharmacy

Completed Service

2024	Member, Biomedical Sciences Faculty Search Committee, Roosevelt University College of Science, Health & Pharmacy
2024	Member, Internal Medicine Faculty Search Committee, Roosevelt University Pharmacy
2023 – 2024	Past Chair, Younger Medicinal Chemists Committee (YMCC), ACS MEDI
2023 – 2024	Member, National Meeting Programming Committee, AACP Chemistry Section
2022 – 2024	Chair Elect, Admissions Committee, Roosevelt University Pharmacy
2022 – 2024	Member, Planning & Budget Committee, Roosevelt University
2022 – 2023	Chair, Younger Medicinal Chemists Committee (YMCC), ACS MEDI
2020 – 2022	Member, Younger Medicinal Chemists Committee (YMCC), ACS MEDI
2021 – 2022	Voting Member, Assessment Committee, Roosevelt University
2021 – 2024	Past Chair, Curriculum Committee, Roosevelt University Pharmacy
2020 – 2022	College Representative, Undergraduate Council, Roosevelt University
2019 – 2023	Member, Student Organization Faculty Advisor Committee (SOFAC), Roosevelt University Pharmacy
2019 – 2023	Faculty Mentor, Industrial Pharmacists Organization, Roosevelt University Pharmacy
2021	American Association of Colleges of Pharmacy (AACP) Faculty Delegate, Roosevelt University Pharmacy
2021	Member, Internal Medicine Faculty Search Committee, Roosevelt University Pharmacy
2021	Member, Ambulatory Care Faculty Search Committee, Roosevelt University Pharmacy
2019 – 2021	Member, Assessment Committee, Roosevelt University Pharmacy
2019 – 2021	Chair, Curriculum Committee, Roosevelt University Pharmacy
2019 – 2020	Curriculum Liaison, Self-Study Committee, Roosevelt University Pharmacy
2019	Chair, Pharmacology Faculty Search Committee, Roosevelt University Pharmacy
2019	Member, Internal Medicine Faculty Search Committee, Roosevelt University Pharmacy

2019	Member, Ambulatory Care Faculty Search Committee, Roosevelt University Pharmacy
2017 – 2018	Public Relations Officer, Network for Women in Science, Scripps Research Institute
2017	Reviewer, Society of Fellows Travel Awards, Scripps Research Institute
2016 – 2017	Reviewer, Summer High School Student Research Education Program, Scripps Research
2016 – 2017	Chemistry Demonstrations, Science Saturdays for Middle and High School Students, Scripps Research, Department of Chemistry
2014	Organizer & Seminar Host (Prof. Michael Pollastri), Student Selected Seminar, University of Minnesota, Department of Medicinal Chemistry
2012 – 2013	Member, Recruitment Committee, University of Minnesota, Department of Medicinal Chemistry
2012 – 2013	Co-Chair & Speaker Host (Prof. Floyd Romesberg), Chemistry Biology Interface Training Grant Symposium, University of Minnesota
2012 – 2013	Organizer & Keynote Host (Prof. Marvin Miller), Medicinal Chemistry Meeting-in-Miniature (MIKI Meeting), University of Minnesota
2011 – 2012	Organizer & Speaker Host (Prof. Kim Janda), Chemistry Biology Interface Training Grant Symposium, University of Minnesota
2011 – 2012	Secretary, American Association of Pharmaceutical Scientists, University of Minnesota Student Chapter, College of Pharmacy
2010 – 2012	Member, Website Revision Committee, University of Minnesota, Department of Medicinal Chemistry

Editorial Experience

2024	Doctoral Thesis Examiner, University of KwaZulu-Natal, South Africa
2023	Technical Reviewer, <i>Celebrating Chemistry</i> (Children's Magazine), "The Healing Power of Chemistry"
2022	Review Editor, Microbial Vaccines, <i>Frontiers in Cellular and Infection Microbiology</i>
2022 – 2023	Topic Editor of "Recent Pharmacological Innovation for the Opioid Crisis", <i>Frontiers in Pharmacology</i>
2021	Grant Reviewer for AACP New Investigator Awards
2013 – Present	Peer Reviewer for <i>Chemical Communications</i> , <i>Frontiers in Cellular & Infection Microbiology</i> , <i>Journal of Medicinal Chemistry</i> , <i>PLoS One</i> , <i>Bioorganic & Medicinal Chemistry</i> , <i>RSC Advances</i> , <i>RSC Medicinal Chemistry</i>

Professional Societies

2019 – Present	Member, American Association of Colleges of Pharmacy
2008 – Present	Member, American Chemical Society

Teaching Experience

Spring 2019-2024

PHAR 531: Musculoskeletal Disorders, Immune System, and Pulmonary Disorders
(Course Coordinator: 2023, 2024)

- Teaching Load: 7 Hours

- Material Taught: Medicinal Chemistry of Pulmonary Agents, Corticosteroids, Non-Opioid Analgesics, Opioid Analgesics, Colchicine, Xanthine Oxidase Inhibitors Uricosurics, Bisphosphonates, Immunosuppressants, DMARDs and Antihistamines

PHAR 532: Endocrine Systems (**Course Coordinator: 2020 – 2024**)

- Teaching Load: 5 Hours
- Material Taught: Medicinal Chemistry of Thyroid and Anti-Thyroid Medications, Hormonal Steroid Agents, and Diabetes Agents

PHAR 634: Neurologic Disorders

- Teaching Load: 4 Hours
- Material Taught: Medicinal Chemistry of Neuromuscular Blocking Agents, Anticonvulsants, and Migraine Medications

PHAR 635: Psychiatric and Behavioral Conditions (2019, 2021, 2022, 2024)

- Teaching Load: 4 Hours
- Material Taught: Medicinal Chemistry of Antidepressants, Anxiolytics and Antipsychotics

Summer 2019-2024

PHAR 636: Hematologic and Oncologic Disorders

- Teaching Load: 11 Hours
- Material Taught: Medicinal Chemistry of Alkylating Agents, Organoplatinum Complexes, Antimetabolites, Antitumor Antibiotics, Topoisomerase Inhibitors, Antimitotic Agents, Kinase Inhibitors and Hormonal Agents

Fall 2019-2021

PHAR 601: Self-Care & Non-Rx Therapeutics

- Teaching Load: 1 Hour
- Material Taught: Pharmacology of Internal Analgesics

PHAR 630: Renal Systems and Genitourinary Systems (*2019 Only*)

- Teaching Load: 2 Hours
- Material Taught: Medicinal Chemistry of Erectile Dysfunction, Benign Prostatic Hyperplasia, and Urinary Incontinence

PHAR 631: Cardiovascular Systems (**Course Coordinator – 2019**)

- Teaching Load: 6 Hours
- Material Taught: Antihypertensives, Dyslipidemia, Inhibitors of Cholesterol Biosynthesis, Antiarrhythmic Agents, Antianginal Medications, Antithrombotics, and Antiplatelet Medications

Winter 2019 - 2023

PHAR 530: Principles of Drug Action (**Course Coordinator – 2019**)

- Teaching Load: 19 Hours
- Material Taught: Pharmacokinetics, Pharmacodynamics, Chemical Classification of Drugs, Drug Properties (pH/pKa, Solubility, Lipophilicity), Drug Receptor Interactions, Stereochemistry, Isomers, Pharmacophores, Structure-Activity Relationships, Isosteres, Phase I Metabolic Reactions, Phase II Metabolic Reactions, Medicinal Chemistry of Cholinergic Agents and Adrenergic Agents

PHAR 633: Infectious Diseases

- Teaching Load: 7 Hours
- Material Taught: Cell Wall Inhibitors, Protein Synthesis Inhibitors, Antivirals, Antiretrovirals, Antifungals

Mentorship Experience

2021 – Present	NAPLEX Mentor, Roosevelt University, College of Pharmacy
2020 – Present	Fellowship Mentor, Roosevelt University, College of Pharmacy
2019 – Present	Academic Team Mentor, Roosevelt University, College of Pharmacy
2010 – 2011	Teaching Assistant, University of Minnesota, College of Pharmacy Courses: Principles of Medicinal Chemistry, Immune System & Infectious Disease

Mentored Research Students	Role as Mentee	Current Position
Zakira Farooqui	Master's Candidate	RU Biotech Graduate Student
Rodrigo Estrada	PharmD Candidate	Roosevelt University P2
Riley Geoghegan	PharmD Candidate	Roosevelt University P2
Zayd Hatahet-Donovan	PharmD Candidate	Roosevelt University P2
Jose Neito	PharmD Candidate	Roosevelt University P2
Erick Yuquilima	PharmD Candidate	Roosevelt University P2
Katrina Cronin	Summer Research Intensive UG	Roosevelt University UG
Griffin Hall	PharmD Candidate	Roosevelt University P4
Juan Zavala	PharmD Candidate	Roosevelt University P4
Muhammad Owais Arshad	HHMI Undergraduate Researcher	Roosevelt University – P1 Deferred
Eneo Karamani	HHMI Undergraduate Researcher	Roosevelt University P1
Massara Alessa	PharmD Candidate	PGY1 Residency
Bijal Patel	PharmD Candidate	PGY1 Residency
Izabela Rozborska	PharmD Candidate	PGY1 Residency
Anna Tanzif	PharmD Candidate	PGY1 Residency
Paulina Sobus	PharmD Candidate	PGY1 Residency
Angelina Consalvo	Undergraduate Honors Thesis	PhD Candidate
Mustafa Almayyah	PharmD Candidate	Pharmacy Manager
Devan Herrera	PharmD Candidate	Pharmacist
Syed Farooqui	PharmD Candidate	Pharmacy Manager
Alex Serrano	PharmD Candidate	Pharmacist
Parth Shah	PharmD Candidate	Medical Device Specialist
Raniah Kareem	PharmD Candidate	Pharmacy Manager
Lynee Massey	SURF Student	PhD Candidate
Lucy Lin	PhD Candidate	Patent Technical Writer
Stephanie Breunig	Undergraduate Researcher	Postdoctoral Research Associate
Eva Skellie	Undergraduate Researcher	Industrial Scientist