

Curriculum Vitae
Owen Shea Fenton, PhD

Work Address

The UNC Eshelman School of Pharmacy
Pharmacoengineering and Molecular Pharmaceutics
The University of North Carolina at Chapel Hill

Contact Information

4214 Marsico Hall (Office)
919-966-1126 (Phone)
osfenton@unc.edu (Email)

EDUCATION

- Doctor Of Philosophy (PhD)** **June 2016**
Massachusetts Institute of Technology
"Design, Synthesis, and Biological Evaluation of Diketopiperazine Based Ionizable Lipids for the In Vivo Delivery of Messenger RNA"
- Master of Science (MSc)** **September 2012**
Massachusetts Institute of Technology
"A General Entry to C7-Borono Indole Derivatives"
- Bachelor of Science (BSc)** **May 2010**
College of the Holy Cross
"Using Molecular Engineering as a Strategy Towards the Phosphorylation of Alcohols"
GPA: 3.98/4.00, Class Rank: 1/715

PROFESSIONAL EXPERIENCE

- The University of North Carolina at Chapel Hill (Faculty)** **February 2022 - present**
Tenure Track Assistant Professor
UNC Eshelman School of Pharmacy, Division of Pharmacoengineering and Molecular Pharmaceutics
- The University of North Carolina at Chapel Hill (Faculty)** **December 2021 - February 2022**
Research Track Assistant Professor
UNC Eshelman School of Pharmacy, Division of Pharmacoengineering and Molecular Pharmaceutics
- National University of Singapore (NUS, Faculty)** **September 2020 - December 2021**
Assistant Professor
Department of Chemical and Biomolecular Engineering
- The Massachusetts Institute of Technology (MIT, Postdoc)** **June 2016 - September 2020**
Research Advisor: *Prof. Robert Langer*
Design and synthesis of hydrogel based soft matter for drug delivery research
- The Massachusetts Institute of Technology (MIT, PhD Student)** **September 2012 - June 2016**
Research Advisor: *Prof. Daniel G. Anderson*
Rational design of ionizable lipids for non-viral RNA drug delivery in vivo
- The Massachusetts Institute of Technology (MIT, MSc Student)** **September 2010 - September 2012**
Research Advisor: *Prof. Mohammad Movassaghi*
Concise total synthesis of (+)-asperazine, (+)-pestalazine A, and (+)-iso-pestalazine A
- The University of California Berkeley (Amgen Scholar)** **June 2009 - August 2010**
Research Advisor: *Prof. F. Dean Toste*
Asymmetric Gold Catalyzed Cyclization Chemistry of Allene-Dienes
- The College of the Holy Cross (BSc Student)** **June 2007 - June 2010**
Research Advisors: *Prof. Bianca R. Sculimbrene; Kimberley A. Frederick*
Titanium Catalyzed Phosphorylation; Raman Spectroscopy of Simulated Drug Samples

HONORS

Worthy of Recognition Teaching in DPMP 864 Advanced Drug Delivery	2023
Worthy of Recognition Teaching in DPMP 738 Nanomedicine	2023
Worthy of Recognition Teaching in DPMP 863 Advanced Pharmaceutics II	2023
Worthy of Recognition Teaching in PHCY 512 Pharmaceutics Drug Delivery I	2022
Worthy of Recognition Teaching in DPMP 864 Advanced Drug Delivery	2022
Worthy of Recognition Teaching for PHCY 514 Pharmaceutics II	2022
Worthy of Recognition Teaching in DPMP 738 Nanomedicine	2022
MIT Translational Fellow	2018
Koch Institute Stanley (1958) and Bonnie Klein Fellowship	2016
National Science Foundation Graduate Research Fellowship	2012 - 2015
Phi Beta Kappa Honor Society	2010-present
American Institute of Chemists Award, <i>College of the Holy Cross</i>	2010
Fenwick Scholarship, <i>College of the Holy Cross</i>	2009 - 2010
Barry M. Goldwater Scholar, <i>Barry Goldwater Scholarship and Excellence in Education Program</i>	2009 - 2010
Stanford Presidential Graduate Fellowship (Declined)	2010
Dana Scholar, <i>College of the Holy Cross</i>	2007 - 2010
Dean's List (8/8 Semesters), <i>College of the Holy Cross</i>	2010
Amgen Fellow, <i>University of California, Berkeley</i>	2009
Goldwater Scholar Honorable Mention, <i>Barry Goldwater Scholarship and Excellence in Education Program</i>	2008
Mrs. Kate C. Power Medal, <i>College of the Holy Cross</i>	2008
Jean Dreyfus Boissevain Undergraduate Scholarship, <i>College of the Holy Cross</i>	2008
PolyEd Achievement in Organic Chemistry Award	2008
Poster and Presentation Award, <i>College of the Holy Cross Annual Research Symposium</i>	2008
CRC Press Freshman Chemistry Award	2007
AP Scholar with Distinction	2006

BIBLIOGRAPHY - REFEREED PAPERS (H-INDEX 23; i10-index 32; Citations 4188)

1. Narasipura, E.A.; Fenton, O.S.* "Advances in Non-Viral mRNA Delivery to the Spleen," *Submitted and Under Review at Biomaterials Science*.
2. Hendy, D.A.; Ma, Y.; Dixon, T.A.; Carlock, M.A.; Ross, T.M.; Bachelder, E.A.; Ainslie, K.M.; Fenton, O.S.* "Polymeric cGAMP Microparticles Affect the Immunogenicity of a Broadly Active Influenza mRNA Lipid Nanoparticle Vaccine," *Submitted and Under Review at Journal of Controlled Release*.
3. Clift, C.L.*; Blaser, M.C.*; Gerrits, W.; Turner, M.E.; Snoawane, A.R.; Pham, T.; Andresen, Fenton, O.S.; Grolman, J.M.; Buffolo, F.; Schoen, F.J.; Hjortnaes, J.; Muehlschlegel, J.D.; Mooney, D.J.; Aikawa, M.; Singh, S.A.; Langer, R.; Aikawa, A. "Integration of Cellular and Extracellular Vesicle Proteomics to Assess 3B Bioprinted Model of CAVD," *Submitted and Under Review at Science Advances*.
4. Bochenek, M.A.; Walters, B.; Zhang, J.; Fenton, O.S.; Facklam, A.; Kronekova, Z.; Pelach, M.; Engquist, E.N.; Leite, N.C.; Morgart, A.; Lacik, I.; Langer, R.; Anderson, D.G.*. "Enhancing the Functionality of Immunoisolated Human SC-Beta Cell Clusters through Prior Resizing," *Small*, **2024**, *1*, 2307464.
5. VanKeulen-Miller, R.; Fenton, O.S.* "Messenger RNA Therapy for Female Reproductive Health," *ACS Molecular Pharmaceutics*, **2024**, *accepted and online*.
6. Ralvenius, W.T.; Andresen, J.L.; Huston, M.M.; Menchaca, S.; Penney, J.; Bonner, J.M.; Fenton, O.S.*; Langer, R.*; Tsai, L.H.* "Lipid nanoparticle-mediated delivery of anti-PU.1 siRNA via localized intracisternal administration reduces neuroinflammation," *Advanced Materials*, **2023**, *1*, 2309225.
7. Neill, B.; Retamales R.A.; Fenton, O.S.* "Advances in Non-Viral mRNA Delivery Technologies and their Application as Vaccines for Melanoma Therapy," *ACS Applied Bio Materials*, **2024**, *accepted and online*.

8. Ma, Y.; **Fenton, O.S.*** "A Unified Strategy to Improve Lipid Nanoparticle Mediated mRNA Delivery," *Journal of the American Chemical Society*, **2023**, *145*, 36, 19800.
9. Sun, B.; Wu, W.; Narasipura, E.A.; Ma, Y.; Yu, C.; **Fenton, O.S.***; Song, H*. "Engineering Nanoparticle Toolkits for mRNA Delivery," *Advanced Drug Delivery Reviews*, **2023**, *1*, 115042.
10. Narasipura, E.A.; VanKeulen-Miller, R.; Ma, Y.; **Fenton, O.S.*** "Ongoing Clinical Trials of Non-Viral siRNA Therapeutics," *Bioconjugate Chemistry*, **2023**, *34*, 7, 1177.
Selected For Feature in Early Career Innovators in Bioconjugate Chemistry Online Virtual Issue.
11. Ma, Y.; **Fenton, O.S.*** "A Mechanism and Efficacy Driven on the Impact of on Lipid Nanoparticle Mediated mRNA Delivery," *Journal of the American Chemical Society*, **2023**, *145*, 11375.
12. Mei, K.C.*; Stiepel, R.T.; Bonacquisti, E.; Jasiewicz, N.E.; Chaudhari, A.P.; Tiwade, P.B.; Bachelder, E.M.; Ainslie, K.M.; **Fenton, O.S.**; Nguyen, J.* "Preferential Immune-Modulation of Macrophages over Dendritic Cells by Single-Tailed Heterocyclic Carboxamide Lipids," *Biomaterials Science*, **2023**, *9*, 2100670.
13. Ma, Y.; **Fenton, O.S.*** "Tannic Acid Lipid Nanoparticles Can Deliver Messenger RNA Payloads and Improve Their Endosomal Escape," *Advanced Therapeutics*, **2023**, *6*, 2200305.
14. Müller, F.; **Fenton, O.S.*** "Additive Manufacturing Approaches toward the Fabrication of Biomaterials," *Advanced Materials Interfaces*, **2022**, *9*, 2100670.
15. Andresen, J.L.; **Fenton, O.S.*** "Nucleic Acid Delivery and Nanoparticle Design for COVID Vaccines," *MRS Bulletin*, **2021**, *46*, 832.
16. Saunders, N.; Paolini, M.S.; **Fenton, O.S.**; Poul, L.; Devalliere, J.; Mpambani, F.; Darmon, A.; Bergere, M.; Jibaul, O.; Germain, M.; Langer, R.* "A Nanoprimer to Improve the Systemic Delivery of siRNA and mRNA," *Nano Letters*, **2020**, *20*, 4264.
17. **Fenton, O.S.**; Paolini, M.; Andresen, J.L.; Müller, F.J.; Langer, R.* "Outlooks on Three-Dimensional Printing for Ocular Biomaterials Research," *Journal of Ocular Pharmacology and Therapeutics*, **2020**, *1*, 1.
18. **Fenton, O.S.**; Tibbitt, M.W.; Appel, E.A.; Jhunjhunwala, S.; Webber, M.J.; Langer, R.* "Injectable Polymer-Nanoparticle Hydrogels for Local Immune Cell Recruitment", *Biomacromolecules*, **2019**, *20*, 4430.
Selected for Cover Feature.
19. Paolini, M.; **Fenton, O.S.**; Bhattacharya, C.; Andresen, J.L.; Langer, R.* "Polymers for Extended-Release Administration," *Biomedical Microdevices*, **2019**, *21*, 45.
20. **Fenton, O.S.**; Andresen, J.L.; Paolini, M.; Langer, R.* "B-Aminoacrylate Synthetic Hydrogels: Easily Accessible and Operationally Simple Biomaterials Networks," *Angewandte Chemie*, **2018**, *57*, 16026.
21. Kaczmarek, J.C.; Kauffman, K.J.; **Fenton, O.S.**; Patel, A.K.; Sadtler, K.; Heartlein, M.W.; DeRosa, F.; Anderson, D.G.* "Optimization of a Degradable Polymer-Lipid Nanoparticle for Potent Systemic Delivery of mRNA to the Lung Endothelium and Immune Cells," *Nano Letters*, **2018**, *18*, 6449.
22. **Fenton, O.S.**; Kauffman, K.J.; McClellan, R.L.; Kaczmarek, J.C.; Zeng, M.D.; Andresen, J.L.; Rhym, L.H.; Heartlein, M.W.; DeRosa, F.; Anderson, D.G.* "Customizable Lipid Nanoparticle Materials for the Delivery of siRNAs and mRNAs," *Angewandte Chemie*, **2018**, *41*, 13582.
23. Aijaz, A.; Li, M.; Khong, D.; Smith, D.; LeBlon, C.; **Fenton, O.S.**; Olabisi, R.M.; Libutti, S.; Tischfield, J.; Maus, M.V.; Deans, R.; Barcia, R.; Anderson, D.G.; Ritz, J.; Preti, R.; Parekkadan, B. "Biomanufacturing for clinically advanced cell therapies," *Nature Biomedical Engineering*, **2018**, *2*, 362.
24. Palmiero, U.C.; Kaczmarek, J.C.; **Fenton, O.S.**; Anderson, D.G.* "Poly(B-amino ester)-*co*-poly(caprolactone)

Terpolymers as Nonviral Vectors for mRNA Delivery In Vitro and In Vivo," *Advanced Healthcare Materials*, **2018**, 7, 1800249.

25. Van der Valk, D.C.; Van der Ven, C.F.T.; Blaser, M.C.*; Grolman, J.M.; Wu, P.; **Fenton, O.S.**; Lee, L.H.; Tibbitt, M.W.; Andresen, J.L.; Wen, J.R.; Ha, A.H.J.; Van Mil, A.; Bouten, C.V.C.; Body, S.C.; Mooney, D.J.; Sluijter, J.P.G.; Aikawa, M.; Hjortnaes, J.; Langer, R.; Aikawa, E.* "Engineering a 3D-Bioprinted Model of Human Heart Valve Disease Using Nanoindentation-Based Biomechanics," *Nanomaterials*, **2018**, 8, 296.

26. **Fenton, O.S.**; Kauffman, K.J.; Kaczmarek, J.C.; McClellan, R.L.; Jhunjunwala, S.; Tibbitt, M.W.; Zeng, M.D.; Appel, E.A.; Dorkin, J.R.; Mir, F.; Yang, J.H.; Oberli, M.A.; Heartlein, M.W.; DeRosa, F.; Langer, R.; Anderson, D.G.* "Synthesis and Biological Evaluation of Ionizable Lipid Materials for the In Vivo Delivery of Messenger RNA to B Lymphocytes," *Advanced Materials*, **2017**, 29, 1606944.

27. Oberli, M.A.; Reichmuth, A.; Dorkin, J.R.; Mitchell, M.J.; **Fenton, O.S.**; Anderson, D.G.; Langer, R.; Blankschtein, D.* "Lipid Nanoparticle Assisted mRNA Delivery for Potent Cancer Immunotherapy," *Nano Letters*, **2017**, 17, 1326.

28. **Fenton, O.S.**; Kauffman, K.J.; McClellan, R.L.; Appel, E.A.; Dorkin, J.R.; Tibbitt, M.W.; Heartlein, M.W.; DeRosa, F.; Langer, R.; Anderson, D.G.* "Bioinspired Alkenyl Amino Alcohol Ionizable Lipid Materials for Highly Potent In Vivo mRNA Delivery," *Advanced Materials*, **2016**, 28, 2939-2943.

29. Loach, R.P.; **Fenton, O.S.**; Movassaghi, M.* "Concise Total Synthesis of (+)-Asperazine, (+)-Pestalazine A, and (+)-iso-Pestalazine A. Structure Revision of (+)-Pestalazine A," *Journal of the American Chemical Society*, **2016**, 138, 1057.

30. Kaczmarek, J.C.; Patel, A.K.; Kauffman, K.J.; **Fenton, O.S.**; Webber, M.J.; Heartlein, M.W.; DeRosa, F.; Anderson, D.G.* "Polymer-Lipid Nanoparticles for Systemic Delivery of mRNA to the Lungs," *Angewandte Chemie*, **2016**, 55, 13808.

31. Fischer, K.M.; Morgan, K.Y.; Hearon, K.; Sklaviadis, D.; Tochka, Z.L.; **Fenton, O.S.**; Anderson, D.G.; Langer, R.; Freed, L.E.* "Poly(limonene Thioether) Scaffold for Tissue Engineering," *Advanced Healthcare Materials*, **2016**, 5, 813.

32. Kauffman, K.J.; Dorkin, J.R.; Yang, J.H.; Heartlein, M.W.; DeRosa, F.; Mir, F.F.; **Fenton, O.S.**; Anderson, D.G.* "Optimization of Lipid Nanoparticle Formulations for mRNA Delivery in Vivo with Fractional Factorial and Definitive Screening Designs," *Nano Letters*, **2015**, 15, 7300.

33. Appel, E.A.; Tibbitt, M.W.; Greer, J.M.; **Fenton, O.S.**; Kreuels, K.; Anderson, D.G.; Langer, R.* "Exploiting Electrostatic Interactions in Polymer-Nanoparticle Hydrogels," *ACS Macro Letters*, **2015**, 4, 848.

34. Whitehead, K.A.; Dorkin, J.R.; Vegas, A.J.; Chang, P.H.; Veiseh, O.; Matthews, J.; **Fenton, O.S.**; Zhang, Y.L.; Olejnik, K.T.; Yesilyurt, V.; Chen, D.L.; Barros, S.; Klevanov, B.; Novobrantseva, T.; Langer, R.; Anderson, D.G.* "Degradable Lipid Nanoparticles with Predictable in Vivo siRNA Delivery Activity," *Nature Communications*, **2014**, 5, 4277.

35. Loach, R.P.; **Fenton, O.S.**; Amaike, K.; Seigel, D.S.; Ozkal, E.; Movassaghi, M.* "C7-Derivatization of C3-Alkylindoles Including Tryptophans and Tryptamines," *Journal of Organic Chemistry*, **2014**, 79, 11254-11263.

36. **Fenton, O.S.**; Allen, E.E.; Pedretty, K.P.; Till, S.D.; Todaro, J.E.; Sculimbrene, B.R.* "Catalytic Lewis Acid Phosphorylation with Pyrophosphates," *Tetrahedron*, **2012**, 68, 9023.

37. **Fenton, O.S.**; Sculimbrene, B.R.* "A Wet-Lab Approach to Stereochemistry Using P-31 NMR Spectroscopy," *Journal of Chemical Education*, **2011**, 88, 662.

38. **Fenton, O.S.**; Tonge, L.A.; Moot, T.H.; Frederick, K.A.* "Quantitative Analysis of Simulated Illicit Street-Drug Samples Using Raman Spectroscopy and Partial Least Squares Regression," *Spectroscopy Letters*, **2011**, 44, 229.

39. Brady, P.B.; Morris, E.M.; **Fenton, O.S.**; Sculimbrene, B.R.* "Efficient Catalyst Turnover in the Phosphitylation

of Alcohols with Phosphoramidites," *Tetrahedron Letters*, **2009**, *50*, 975.

40. Noonan, K.Y.; Tonge, L.A.; **Fenton, O.S.**; Damiano, D.B.; Frederick, K.A.* "Rapid Classification of Simulated Street Drug Mixtures Using Raman Spectroscopy and Principal Component Analysis," *App. Spec.*, **2009**, *63*, 742.

BIBLIOGRAPHY - ORAL PRESENTATIONS

1. **Fenton, O.S.** "Strategies and Materials for Nanoparticle Mediated RNA Delivery," Marsico Lung Institute, University of North Carolina at Chapel Hill, Chapel Hill, NC. November 2023. Virtual. Invited Seminar.

2. **Fenton, O.S.** "Strategies and Materials for Nanoparticle Mediated RNA Delivery," UNC Carolina Cancer Nanotechnology Program, University of North Carolina at Chapel Hill, Chapel Hill, NC. November 2023. In-person. Invited Seminar.

3. **Fenton, O.S.** "Strategies and Materials for Nanoparticle Mediated RNA Delivery," Primary Ciliary Dyskinesia Group Seminar Series, University of North Carolina at Chapel Hill, Chapel Hill, NC. November 2023. Virtual. Invited Seminar.

4. **Fenton, O.S.** "Development and Evaluation of Non-Viral RNA Delivery Platforms," 2nd In Vivo Engineering of Therapeutic Cells Summit Conference, Boston, MA. July 2023. In-person. Invited Seminar (Paid Travel and Accommodations).

5. **Fenton, O.S.** "Development and Evaluation of Non-Viral RNA Delivery Platforms," UNC RNA Discovery Center, University of North Carolina at Chapel Hill, Chapel Hill, NC. May 2023. In-person. Invited Seminar.

6. **Fenton, O.S.** "Development and Evaluation of Non-Viral RNA Delivery Platforms," Triangle RNA Meeting, Duke University, May 2023. In-person. Invited Seminar.

7. **Fenton, O.S.** "Development and Evaluation of Non-Viral RNA Delivery Platforms," Lineberger Faculty Lunch Seminar, University of North Carolina at Chapel Hill, Chapel Hill, NC. May 2023. In-person. Invited Seminar.

8. **Fenton, O.S.** "mRNA Delivery Can Be Improved Using Synthetic Liposomes," UNC Animal Services Core, University of North Carolina at Chapel Hill, Chapel Hill, NC. December 2022. In-person. Invited Seminar.

9. **Fenton, O.S.** "Rational Engineering of Advanced Drug Delivery Systems," Pathway to Independence Lecture Series for the Carolina Cancer Nanotechnology Training Program, University of North Carolina at Chapel Hill, Chapel Hill, NC. November 2022. Hybrid. Invited Seminar.

10. **Fenton, O.S.** "Development and Evaluation of Non-Viral RNA Delivery Platforms," Globalization of Pharmaceuticals Education Network (GPEN) International Conference, University of Minnesota, Minneapolis, MN. October 2022. In-person. Invited Seminar.

11. **Fenton, O.S.** "Development and Evaluation of Non-Viral RNA Delivery Platforms," RNA Center and Immunology Retreat, University of North Carolina at Chapel Hill, Chapel Hill, NC. September 2022. In-person. Invited Seminar.

12. **Fenton, O.S.** "Rational Engineering of Advanced Drug Delivery Systems," Invited Seminar, National University of Singapore Hospital Infectious Disease Translational Research Program, November 2021. Virtual. Invited Seminar.

13. **Fenton, O.S.** "Rational Engineering of Advanced Drug Delivery Systems," Invited Seminar, National University of Singapore Hospital Clinician-Scientist Academy, Singapore, Singapore, July 2021. Virtual. Invited Seminar.

14. **Fenton, O.S.** "Molecular Engineering Approaches Towards Advanced Drug Delivery," Invited Seminar, National University of Singapore Mechanobiology Institute, Singapore, Singapore, June 2021. Virtual. Invited Seminar.

15. **Fenton, O.S.** "Molecular Engineering For Advanced Drug Delivery," College of the Holy Cross, Worcester, MA.

March 2021. Virtual. Invited Seminar.

16. **Fenton, O.S.** "Non-Viral Nanomaterials for RNA Delivery," Invited Seminar, Massachusetts Institute of Technology Koch Institute for Integrative Cancer Research, Cambridge MA. November 2020. Virtual. Invited Seminar.

17. **Fenton, O.S.** "Molecular Engineering Approaches Toward Platform Immuno-Biomaterials," AIChE Annual Meeting, Orlando, FL. November 2019. In-person. Seminar.

18. **Fenton, O.S.** "Developing Platform Biomaterials: From Messenger RNA Delivery to User-Friendly Synthetic Hydrogels," AIChE Annual Meeting, Pittsburgh, PA. October 2018. In-person. Seminar.

19. **Fenton, O.S.** "Scalable and Tunable Synthetic Hydrogels for Use in Biomaterials Applications," AIChE Annual Meeting, Pittsburgh, PA. October 2018. In-person. Seminar.

20. **Fenton, O.S.** "Design, Synthesis, and Biological Evaluation of Novel Lipid Nanoparticle Materials for the In Vivo Delivery of Messenger RNA," AIChE Annual Meeting, San Francisco, CA. November 2016. Seminar.

BIBLIOGRAPHY - REFEREED ABSTRACTS AND POSTER PRESENTATIONS

1. **Fenton, O.S.** "Investigating the role of hypoxia on the efficacy and mechanism of mRNA Lipid Nanoparticles," American Chemical Society General Meeting, New Orleans, LA. Invited Oral Presentation. October 2023. In-person. Accepted.

2. **Fenton, O.S.** "Tannic Acid Lipid Nanoparticles Can Deliver mRNA Payloads and Improve Their Endosomal Escape," Controlled Release Society Annual International Conference, Las Vegas, NV. Poster Presentation. July 2023. In-person.

3. **Fenton, O.S.** "Polymeric Nanoparticle Delivery Platforms for Efficacious and Well Tolerated mRNA Therapy," RNA Therapeutics: From Concept to Clinic Conference, Worcester, MA. June 2023. In-person.

4. **Fenton, O.S.** "Molecular Engineering Approaches Toward Platform Immuno-Biomaterials," AIChE Annual Meeting, Orlando, FL. Poster. November 2019. In-person.

5. **Fenton, O.S.** "Unifying Engineering and Synthesis to Create Platform Biomaterials," AIChE Annual Meeting, Pittsburgh, PA. Poster. October 2018. In-person.

6. **Fenton, O.S.**, Sculimbrene, B.R. "Exploring stereochemistry in a teaching laboratory using ^{31}P NMR spectroscopy," ACS National Meeting, San Francisco, CA. Poster. March 2010. In-person.

7. **Fenton, O.S.**, Sculimbrene, B.R. "Development of catalytic phosphorylation reactions," San Francisco, CA. Poster. March 2010. In-person.

8. **Fenton, O.S.**, Gonzalez, A.; Toste, F.D. "Asymmetric Gold-Catalyzed [4+2] Cycloadditions of Allene-Dienes," Amgen Scholars Research Symposium, Berkeley, CA. Poster. August 2009. In-person.

9. **Fenton, O.S.**, Morris, E.M.; Sculimbrene, B.R. "Development of a Catalytic Reaction for the Phosphorylation of Alcohols," ACS National Meeting, Salt Lake City UT. Poster. August 2009. In-person.

10. **Fenton, O.S.**, Frederick, K.A. "Quantitative Measurements of Illicit Drugs Using Raman Spectroscopy and Chemometrics," ACS National Meeting, Boston, MA. Poster. August 2007. In-person.

BIBLIOGRAPHY - MEDIA FEATURES

1. **Fenton, O.S.**; Manteghi, S. "Nanoparticle-Delivered mRNA Could Offer Potential Therapy for Alzheimer's, Neuroinflammation," Invited Video Podcast with RegenMedGlobal. January 2024. (International).

2. **Fenton, O.S.** "Nanoparticle-Delivered RNA Reduces Neuroinflammation in Lab Tests," MIT News Story, Cambridge, MA. December 2023. (Local).

3. **Fenton, O.S.** "Owen Fenton Receives NIH Award To Help Fund Research To Treat Skin Cancer," Invited Faculty Feature, University of North Carolina at Chapel Hill, Chapel Hill, NC. August 2023. (Local).
4. **Fenton, O.S.** "Attracting Expertise: A Win for Carolina, a Win for Research," Invited Faculty Feature, University of North Carolina at Chapel Hill, Chapel Hill, NC. August 2023. (Local).
5. **Fenton, O.S.;** Kashuba, A. "Unscripted," Invited Interview with Dean Angela Kashuba for publication on CarolinaPharmacy.org, University of North Carolina at Chapel Hill, Chapel Hill, NC. August 2023. (Local).
6. **Fenton, O.S.** "Faculty Feature, Campaign for Carolina," Invited Interview and Story for UNC Book and Magazine Article, University of North Carolina at Chapel Hill, Chapel Hill, NC. September 2022. (Local).
7. **Fenton, O.S.;** Alexander, D. "Researcher Spotlight: Owen Fenton," Invited Interview at the University of North Carolina at Chapel Hill, Chapel Hill, NC. August 2022. <https://pharmacy.unc.edu/2022/08/researcher-spotlight-owen-fenton/>. (Local).
8. **Fenton, O.S.;** Van Zutphen, G. "RNA Based Vaccines for Covid19," Invited Public Radio Expert Interview on MoneyFM. Virtual Radio Interview. March 2021. <https://www.moneyfm893.sg/guest/owen-shea-fenton-national-university-of-singapore/> (International)
9. **Fenton, O.S.;** Y. Tay, A. "A Closer Look at Pharmacokinetics," Invited Expert Opinion Interview. Virtual Radio Interview. March 2021. <https://www.technologynetworks.com/drug-discovery/articles/a-closer-look-at-pharmacokinetics-346007> (International)

WORKSHOPS ATTENDED

1. Cultivating Mentors Workshop, University of North Carolina at Chapel Hill, Chapel Hill, NC. June 2023. Attendee. In-person.
2. Biological and Biomedical Sciences Program Mentor Workshop Training Program, University of North Carolina at Chapel Hill, Chapel Hill, NC. April 2023. Attendee. In-person.

TEACHING ACTIVITIES

Year	Course Number and Name	No. Lectures	Enrollment	Type	Evaluation
2023	DPMP 864 Nanomedicine	2	5	Graduate	5/5 avg. 4
2023	DPMP 738 Nanomedicine	2	9	Graduate	5/5 avg. 4
2023	DPMP 863 Advanced Pharmaceutics II	1	5	Graduate	5/5 avg. 4
2022	PHCY 512 Pharmaceutics Drug Delivery I	5	137	Professional	5/5 avg. 3
2022	DPMP 864 Advanced Drug Delivery	2	12	Graduate	5/5 avg. 5
2022	PHCY 514 Pharmaceutics II	2	145	Professional	5/5 avg. 4
2022	DPMP 738 Nanomedicine	1	10	Graduate	4.5/5 avg. 4.25
2022	PHRS 802 Drug Dev and Prof Dev	1	10	Graduate	N/A
2022	NC STATE 590 Spec. Topics BME	1	15	UGrad	N/A
2021	CN4203R Polymer Engineering	5	20	UGrad	N/A
2021	CN3102 Chemical Engineering Process Lab II	5	80	UGrad	N/A
2021	CN3101A Chemical Engineering Process Lab I	5	80	UGrad	N/A
2021	EG3611A Industrial Attachment Program	5	5	UGrad	N/A
2021	CN3102 Chemical Engineering Process Lab II	5	80	UGrad	N/A

STUDENT AND TRAINEE ADVISING

Name	Previous Degree	Position	Dates	Topic
Vincent Fung	PhD (NUS)	Postdoc	2/1 - Present	Therapeutic RNA Delivery
Yutian Ma	PhD (U. Melbourne)	Postdoc	1/22 - Present	Therapeutic RNA Delivery
Rachel Vankeulen	BEng (Minnesota State)	PhD Student	1/23 - Present	Therapeutic RNA Delivery
Palas Tiwade	BEng (IIT Dhanbad)	PhD Student	1/22 - Present	Therapeutic RNA Delivery
Eshan Narasipura	BSc (U. Utah)	PhD Student	9/22 - Present	Therapeutic RNA Delivery
Adriana Retamales	HS (Greensboro)	UGrad Student	2/22 - Present	Therapeutics RNA Delivery
Caroline Stockwell	BEng (U. Rochester)	PhD Rotation	10/23 - 12/1	Nanoparticle Drug Delivery
Stephen Szpak	BEng (URI)	PhD Rotation	9/23 - 10/23	Nanoparticle Drug Delivery
Bevin Neill	BEng (NC State)	Technician	6/22 - 8/23	Therapeutic RNA Delivery
Hanna Morrill	HS (Andover)	UGrad Student	6/22 - 6/23	Therapeutic RNA Delivery
Grace Williamson	BEng (U. Iowa)	PhD Rotation	11/22 - 1/22	Nanoparticle Drug Delivery
Harry Silva	BSc (Boston College)	PhD Rotation	1/23 - 4/23	Nanoparticle Drug Delivery

ADVISING AS A MEMBER OF DISSERTATION COMMITTEES

Student Name	My Role	Faculty Laboratory	Topic	Anticipated Grad. Date
Sarah Nagy	DAC Member	Dr. Mark Schoenfisch	NO Materials	2026
Grace Williamson	SAC Member	Dr. Kristy Ainslie	AceDex Vaccines	2026
Marshall Fritz	DAC Member	Dr. Samuel Lai	B Cell Engineering	2024
Dylan Hendy	DAC Member	Dr. Kristy Ainslie	AceDex Universal Flu	2024
Zhongbo Li	DAC Member	Dr. Samuel Lai	PEG Antibodies	2024
Jacob Ramsey	DAC Member	Dr. Sasha Kabanov	Poly(Oxazoline) Delivery	2023
Sami Picciotti	DAC Member	Dr. Mark Schoenfisch	NO Release for Wounds	2025

GRANTS

Active Support - Total Value Raised = \$1,211,122

1. NIH R21 Trailblazer Award

Title: "Optimization of Tannic Acid Lipid Nanoparticles for a Therapeutic mRNA Vaccine Against Melanoma"

Role: Principal Investigator

Other Personnel: Dr. Stergios Moschos (Co-Investigator)

Total Value: \$601,122

Impact Score: 40

Status: Awarded (August 1, 2023 - July 31, 2026)

2. TraCS K12 Junior Faculty Career Development Program

Title: "Strategies and Materials for Translational Non-Viral mRNA Therapy"

Role: Fellow

Total Value: \$300,000

Status: Active (July 1, 2023 - June 30, 2026)

3. UNC Lineberger Developmental Funding Program Tier 2 Stimulus Award

Title: "Novel Tumor Antigen-Specific RNA-Nanoparticle Vaccines In Reconstituted Immune Systems"

Role: Principal Investigator

Other Personnel: Prof. Dr. Paul Armistead (Co-I), Prof. Dr. Stergios Moschos (Collaborator)

Total Value: \$150,000

Status: Active (June 6, 2023 - June 5, 2025)

4. Sponsored Research Agreement with BASF

Title: "Lipid Formulations for Delivery to Plant Soil"

Role: Principal Investigator

Total Value: \$160,000

Status: Active (June 15, 2023 - June 14, 2024)

PROFESSIONAL AFFILIATIONS

1. UNC Pharmacology	2023-Present
2. Biological and Biomedical Sciences Program Faculty	2022-Present
3. UNC T32 Carolina Cancer Nanotechnology Training Program Mentor	2022-Present
4. UNC RNA Discovery Center Member	2022-Present
5. UNC Lineberger Comprehensive Cancer Center Member (Molecular Therapeutics Program)	2022-Present

PROFESSIONAL MEMBERSHIPS

1. Controlled Release Society	2022-Present
2. American Association of Pharmaceutical Scientists	2022-Present

SERVICE TO PROFESSIONAL GRANT REVIEW

1. Invited Ad-Hoc Reviewer for NIH INN Study Section	February 2024
2. Invited Ad-Hoc Reviewer for NSF BMAT/DMR Panel	October 2023

SERVICE TO PROFESSIONAL GROUPS

1. NanoDDS Co-Organizer (19th International)	February 2022-September 2022
2. Journal Referee: Nature Communications, Journal of the American Chemical Society, Trends in Pharmacological Sciences, Macromolecules, Regenerative Engineering and Translational Medicine, Bioengineering and Translational Medicine, Scientific Reports, Inorganic and Nano-Metal Chemistry, ACS Materials Letters, Bioconjugate Chemistry, ACS Materials Letters, American Association of Pharmaceutical Scientists Journal, Current Opinion in Biotechnology Journal, Aggregate, ACS Applied Bio Materials, Journal of Biomedical Materials Research Part A, ACS Medicinal Chemistry Letters, iScience, Theranostics, Science Advances	

SERVICE TO UNC ESOP

1. UNC Biological and Biomedical Sciences Program PhD Selection Committee	August 2023-present
2. UNC PharmD Candidates' Day MMI Interviewer	November 2023
3. UNC Research and Scholarship in Pharmacy (RASP) Committee	January 2022-August 2023
4. UNC PharmD Candidates' Day MMI Interviewer	March 2023
5. UNC Research Retreat Committee - Keynote Speaker Lead	August 2022 - January 2023
6. UNC PharmD Candidates' Day MMI Interviewer	December 2021

SERVICE TO UNC DPMP

1. Faculty Search Committee	October 2023-present
2. DPMP PhD Student Interviewing Committee	December 2023
3. National Science Foundation Graduate Research Fellowship Workshop	August 2023
4. Research Specialist Search Committee	May 2023-December 2023
5. Executive Assistant Search Committee	September 2022 - October 2022
6. Administrative Assistant Search Committee	September 2022 - October 2022
7. National Science Foundation Graduate Research Fellowship Workshop	August 2022

8. Carolina Nanotechnology Committee

March 2022

SERVICE TO THE GREATER NORTH CAROLINA COMMUNITY

- | | |
|---|----------------|
| 1. Waccamaw Siouan STEM Day | September 2023 |
| 2. Scroggs STEAM Night | April 2023 |
| 3. Culbreth STEAM Day | March 2023 |
| 4. ESOP UNC Science Expo Outreach Event | April 2022 |