

CURRICULUM VITAE

Alexandra S. Piotrowski-Daspit, Ph.D.

Assistant Professor
University of Michigan
Department of Biomedical Engineering
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Education and Training

Postdoctoral Fellow, Biomedical Engineering, Yale University	2016 – 2023
Ph.D., Chemical and Biological Engineering, Princeton University (with a Graduate Certificate in Bioengineering)	2011 – 2016
M.A., Chemical and Biological Engineering, Princeton University	2011 – 2013
S.B., Chemical-Biological Engineering and Biology, Massachusetts Institute of Technology (MIT)	2007 – 2011

Research Experience

Assistant Professor, BME & Internal Medicine, University of Michigan 2023 – present
My laboratory is focused on engineering nano-scaled non-viral vehicles for gene delivery to the lungs and other organs, taking advantage of combinatorial polymer vehicle libraries, high-throughput in vivo screening tools, and three-dimensional cell culture models that recapitulate disease physiology. The goal is to elucidate the structure-function relationships that drive the interactions between nanomedicines and the barriers they encounter when administered in vivo at the organism, tissue, and cell levels. Ultimately, this work will contribute to the rational design of delivery vehicles for specific disease targets and aid in the clinical translation of therapeutics. This technology-driven approach will be applicable to the treatment of many hereditary diseases, with an initial focus on cystic fibrosis (CF).

Postdoctoral Fellow, Biomedical Engineering, Yale University 2016 – 2023
Research Mentors: W. Mark Saltzman, Peter M. Glazer, and Marie E. Egan
Designing novel polymers for nucleic acid delivery and high-throughput in vivo screening tools with a focus on developing efficient vehicles for the delivery of peptide nucleic acid (PNA)-based gene editing agents to treat β -thalassemia and cystic fibrosis (CF).

Graduate Student, Chemical & Biological Engineering, Princeton University 2011 – 2016

Research Mentor: Celeste M. Nelson

Thesis: Physical Forces and Collective Cell Migration in Development and Disease

Engineering 3D cell culture models to investigate the physical mechanisms of collective migration in development and cancer.

Undergraduate Researcher, Chemical-Biological Engineering, MIT 2009 – 2011

Research Mentor: Robert Langer

Developing nano-sized siRNA delivery systems for cancer treatment in collaboration with Alnylam Pharmaceuticals.

Undergraduate Researcher, Chemical & Biomolecular Engineering, UC Berkeley 2010

Research Mentor: Douglas Clark

Genetically engineering the binding domains of cellulase enzyme families using directed evolution to improve catalysis of cellulose hydrolysis and biofuel production efficiency.

Research and Development Intern, Novartis Vaccines & Diagnostics 2010

Research Mentor: Siddhartha Jain

Formulating mRNA delivery complexes for mRNA vaccines and performing stability assays to optimize delivery complex viability.

Undergraduate Researcher, Earth, Atmospheric, & Planetary Sciences, MIT 2008 – 2009

Research Mentor: Frederick Frey

Geochemical and geochronological study of the Ninetyeast Ridge.

Publications

Google Scholar: <https://scholar.google.com/citations?user=o2AUNfAAAAAJ&hl=en>

h-index: 20; i10-index: 26

37. JY Liu, EM Plaster, M Fan, D Ahmed, A Roy, P Duran, **PM Panovich**, **AS Piotrowski-Daspit**, CA Aguilar, ML Killian, and C Loebel. Nascent extracellular matrix converts biomaterial cues into cell fate decisions. *Advanced Science*, under review.

36. H Viola, H Carter, K Griffin, R Medina Costa, R McDonald, B Callow, F Gonzalez de Los Santos, **PM Panovich**, S Carey, M Martinez, R Chen, Z Hunter, **AS Piotrowski-Daspit**, G Luker, BB Moore, and L Shea. Antifibrotic monocyte activation by nanoparticles resolves murine pulmonary fibrosis. *Biomaterials*, in revision.

35. **OM Kelly**, AR Hanna, AK Byrne, JA Green, I Viotti Perisse, KD Wells, SA Murray, IA Polejaeva, AF Tarantal, D Issadore, and **AS Piotrowski-Daspit**. Towards clinical translation of nanomedicines: Formulation scale-up and model systems. *Advanced Drug Delivery Reviews*, 234:115862, 2026.

34. **PM Panovich, A Ganesan, AI Markey, ME Stevens, OM Kelly, and AS Piotrowski-Daspit.** Engineered cargo-free nanoparticle decoys for phagocytic modulation of macrophages. *Journal of Controlled Release*, 392:114699, 2026.
33. **AS Piotrowski-Daspit***, AY Lynn*, DA Eaton, LG Bracaglia, **AI Markey**, RD Mortlock, DH Stitelman, ML Martinez, CC Lee, HJ Kliman, PM Glazer, AF Tarantal, and WM Saltzman. Prenatal Intraportal Delivery of Polymeric Nanoparticles to Fetal Rhesus Monkeys (*Macaca mulatta*). *Human Gene Therapy*, 37(5-6):189-198, 2026. (*These authors contributed equally to this work).
32. AS Ricciardi, C Barone, R Putman, E Quijano, A Gupta, R Nguyen, H Mandl, **AS Piotrowski-Daspit**, F Lopez-Giraldez, V Luks, MR Freedman-Weiss, J Farrelly, S Ahle, AY Lynn, PM Glazer, WM Saltzman, DH Stitelman, and ME Egan. Systemic in utero gene editing as a treatment for cystic fibrosis. *Proceedings of the National Academy of Sciences of the U.S.A.*, 122(24):e2418731122, 2025.
31. **PM Panovich, A Ganesan, AR Angadi, and AS Piotrowski-Daspit.** Recent advances in the application of polymeric nanoparticles to the pulmonary delivery of mRNA. *Nanomedicine (London)*, 1-17, 2025.
30. TC Binns, DA Eaton, DV Akiki, E Deschenes, **AS Piotrowski-Daspit**, LG Bracaglia, JE Hendrickson, and WM Saltzman. Cellular determinants influence the red blood cell adsorption efficiency of poly(amine-co-ester) nanoparticles. *Science Advances*, 11(18):eadt8637, 2025.
29. A Gupta, C Barone, E Quijano, **AS Piotrowski-Daspit**, JD Perera, A Ricciardi, H Jamali, A Turchick, W Zao, WM Saltzman Peter M Glazer, and ME Egan. Next generation triplex-forming PNAs for site-specific genome editing of the F508del CFTR mutation. *Journal of Cystic Fibrosis*, 24(1):142-148, 2025.
28. **AS Piotrowski-Daspit*†**, LG Bracaglia*†, DA Eaton, O Richfield, TC Binns, C Albert, J Gould, RD Mortlock, JS Pober, and WM Saltzman‡. Enhancing in vivo cell and tissue targeting by modulation of polymer nanoparticles and macrophage decoys. *Nature Communications*, 15(1):4247, 2024. (*These authors contributed equally to this work, †These authors are co-corresponding authors).
27. A Suberi, MK Grun, T Mao, B Israelow, M Reschke, J Grundler, L Akhtar, T Lee, K Shin, **AS Piotrowski-Daspit**, RJ Homer, A Iwasaki, HW Suh, and WM Saltzman. Polymer nanoparticles deliver mRNA to the lung for mucosal vaccination. *Science Translational Medicine*, 15(709):eabq0603, 2023.
26. O Richfield, **AS Piotrowski-Daspit**, K Shin, and WM Saltzman. Rational Nanoparticle Design: Optimization Using Insights from Experiments and Mathematical Models. *Journal of Controlled Release*, 360:772-783, 2023.
25. SJ Ullrich, NK Yung, TJ Bauer-Pasani, NL Maassel, ME Guerra, M Freedman-Weiss, SL Ahle, AS Ricciardi, M Sauler, WM Saltzman, **AS Piotrowski-Daspit**, and DH Stitelman. *In utero*

delivery of miRNA induces epigenetic alterations and corrects pulmonary pathology in congenital diaphragmatic hernia. *Molecular Therapy Nucleic Acids*, 32:594-602, 2023.

24. M Reschke, **AS Piotrowski-Daspit**, JS Pober, and WM Saltzman: Nucleic acid delivery to the vascular endothelium. *Molecular Pharmaceutics*, 19(12):4466-4486, 2022.

23. **AS Piotrowski-Daspit***, C Barone, CY Lin, Y Deng, D Wu, AS Ricciardi, R Putman, R Nguyen, A Gupta, R Fan, PM Glazer, WM Saltzman, and ME Egan*: *In vivo* correction of cystic fibrosis mediated by PNA nanoparticles. *Science Advances*, 8(40):eabo0522, 2022. (***These authors are co-corresponding authors**).

22. K Shin, HW Suh, J Grundler, JU Pothupitiya, ZM Moscato, M Reschke, LG Bracaglia, **AS Piotrowski-Daspit**, and WM Saltzman: Polyglycerol and poly(ethylene glycol) exhibit different effects on pharmacokinetics and antibody generation when grafted to nanoparticle surfaces. *Biomaterials*, 287:121676, 2022.

21. E Xu, WM Saltzman*, and **AS Piotrowski-Daspit***. (2021) Escaping the Endosome: Assessing Cellular Trafficking Mechanisms of Non-viral Vehicles. *Journal of Controlled Release*, 335:465-480. (***These authors are co-corresponding authors**).

20. Y Wang, Y Jiang, D Wei, P Singh, Y Yu, T Lee, L Zhang, H Mandl, **AS Piotrowski-Daspit**, X Chen, F Li, X Li, Y Cheng, A Josowitz, F Yang, Y Zhao, F Wang, Z Zhao, A Huttner, R Bindra, H Xiao, and WM Saltzman. (2021) Nanoparticle-mediated convection-enhanced delivery of a DNA intercalator to gliomas circumvents temozolomide resistance. *Nature Biomedical Engineering*, 5(9): 1048-1058.

19. MK Grun, A Suberi, K Shin, T Lee, V Gomerding, ZM Moscato, **AS Piotrowski-Daspit***, and WM Saltzman*. (2021) PEGylation of Poly(amine-co-ester) Polyplexes for Tunable Gene Delivery. *Biomaterials*, 272:120780. (***These authors are co-corresponding authors**).

18. SJ Ullrich, M Freedman-Weiss, S Ahle, HK Mandl, **AS Piotrowski-Daspit**, K Roberts, N Yung, N Maassel, T Bauer-Pisani, AS Ricciardi, ME Egan, PM Glazer, WM Saltzman, and DH Stitelman. (2021) Nanoparticles for Delivery of Agents to Fetal Lungs. *Acta Biomaterialia*, 123:346-353.

17. **AS Piotrowski-Daspit**, AC Kauffman, LG Bracaglia, and WM Saltzman. (2020) Polymeric materials for nucleic acid delivery, *Advanced Drug Delivery Reviews*, 156:119-132.

16. LG Bracaglia*, **AS Piotrowski-Daspit***, C Lin, Y Wang, GT Tietjen, WM Saltzman. (2020) High-throughput Quantitative Microscopy-based Half-life Measurements of Intravenously Injected Agents, *Proceedings of the National Academy of Sciences of the U.S.A.*, 117(7):3502-3508. (***These authors contributed equally to this work**).

15. S Oyaghire, E Quijano, **AS Piotrowski-Daspit**, WM Saltzman, PM Glazer. (2019) Poly(lactic-co-glycolic acid) Nanoparticle Delivery of Peptide Nucleic Acids In Vivo. In *Peptide Nucleic Acids: Methods and Protocols* (Methods in Molecular Biology series) (ed. P Nielsen), 2105:261-281.

14. J Cui*, **AS Piotrowski-Daspit***, J Zhang, M Shao, LG Bracaglia, T Utsumi, YE Seo, J DiRito, E Song, C Wu, A Inada, GT Tietjen, JS Pober, Y Iwakiri, WM Saltzman. (2019) Poly(amine-co-ester) nanoparticles for effective Nogo-B knockdown in the liver. *Journal of Controlled Release*, 304:259-267. (***These authors contributed equally to this work**).
13. YE Seo, HW Suh, R Bahal, A Josowitz, J Zhang, E Song, J Cui, S Noorbakhsh, C Jackson, T Bu, **AS Piotrowski-Daspit**, R Bindra, WM Saltzman. (2019) Nanoparticle-mediated intratumoral inhibition of miR-21 for improved survival in glioblastoma. *Biomaterials*, 201:87-98.
12. **AS Piotrowski-Daspit**, PM Glazer, WM Saltzman. (2018) Debugging the genetic code: non-viral *in vivo* delivery of therapeutic genome editing technologies. *Current Opinion in Biomedical Engineering*, 7:24-32.
11. AC Kauffman*, **AS Piotrowski-Daspit***, KH Nakazawa, Y Jiang, A Datye, WM Saltzman. (2018) Tunability of Biodegradable Poly(amine-co-ester) Polymers for Customized Nucleic Acid Delivery and Other Biomedical Applications. *Biomacromolecules*, 19:3861-3873. (***These authors contributed equally to this work**).
10. GT Tietjen, SA Hosgood, NC Kirkiles-Smith, J Cui, **AS Piotrowski-Daspit**, D Deep, E Song, J DiRito, R Al-Lamki, JA Bradley, K Saeb-Parsy, JR Bradley, ML Nicholson, WM Saltzman, JS Pober. (2017) Antibody-targeting Can Increase Nanoparticle Delivery to Endothelial Cells During *ex vivo* Normothermic Machine Perfusion of Human Kidney. *Science Translational Medicine*, 9:eaam6764.
9. **AS Piotrowski-Daspit**, BA Nerger, AE Wolf, CM Nelson. (2017) Dynamics of tissue-induced alignment of fibrous extracellular matrix. *Biophysical Journal*, 113:702-713. (Featured on the Journal Cover).
8. **AS Piotrowski-Daspit**, AK Simi, MF Pang, J Tien, CM Nelson. (2017) A 3D culture model to study how fluid pressure and flow affect the behavior of aggregates of epithelial cells. In *Mammary Gland Development (Methods in Molecular Biology series)* (eds. F Martin & T Stein), 1501:245-257.
7. **AS Piotrowski-Daspit**, J Tien, CM Nelson. (2016) Interstitial fluid pressure regulates collective invasion via Snail, vimentin, and E-cadherin in engineered human breast tumors. *Integrative Biology*, 8:319-331.
6. **AS Piotrowski-Daspit** and CM Nelson. (2016) Engineering three-dimensional epithelial tissues embedded within extracellular matrix. *JoVE*, 113:e54283.
5. N Gjorevski*, **AS Piotrowski***, VD Varner, CM Nelson. (2015) Dynamic tensile forces drive collective cell migration through three-dimensional extracellular matrices. *Scientific Reports*, 5:11458. (***These authors contributed equally to this work**).
4. AK Simi*, **AS Piotrowski***, CM Nelson. (2014) Mechanotransduction, metastasis and genomic instability. In *Genomic Instability and Cancer Metastasis: Mechanisms, Emerging*

Themes, and Novel Therapeutic Strategies (eds. C Maxwell & C Roskelley), 20:139-158. (*These authors contributed equally to this work).

3. **AS Piotrowski**, VD Varner, N Gjorevski, CM Nelson. (2014) Three-dimensional traction force microscopy of engineered epithelial tissues. In *Tissue Morphogenesis (Methods in Molecular Biology series)* (ed. CM Nelson) (Springer, New York), 1189:191-207.

2. FA Frey, MS Pringle, P Meloney, S Huang, **AS Piotrowski**. (2011) Diverse mantle sources for Ninetyeast Ridge magmatism: Geochemical constraints from basaltic glasses. *Earth and Planetary Science Letters*, 303:215-224.

1. OV Levchenko, WW Sager, FA Frey, MS Pringle, KS Krishna, D Gopala Rao, E Gauntlett, E Mervine, YG Marinova, **AS Piotrowski**, et al. (2010) New geological-geophysical data on the structure of the Ninetyeast ridge. *Doklady Earth Sciences*, 434:1208-1213.

Teaching Experience

Instructor, University of Michigan

BME 419/519: Quantitative Physiology 2024 – present
Quantitative Physiology provides learning opportunities for senior undergraduate and graduate students to understand and develop competencies in a quantitative, research oriented, systems approach to physiology. Systems examined include cellular; musculoskeletal; cardiovascular; respiratory; endocrine; gastrointestinal; and renal. Mathematical models and engineering analyses are used to describe system performance where applicable.

BME 500: Biomedical Engineering Seminar Series 2023 – 2025
This is the research seminar series for the Department of Biomedical Engineering, and is a requirement for all graduate students in the program.

Teaching Transcript Certificate, McGraw Center for Teaching and Learning, Princeton University 2016

Certificate in pedagogical training as a demonstration of commitment to effective teaching.

Graduate Student Fellow, McGraw Center for Teaching and Learning, Princeton University 2015

Organized workshops for students on effective teaching and learning.

Assistant in Instruction, Princeton University

MOL 215: Quantitative Principles in Cell and Molecular Biology 2013, 2014
Mentored students in an educational laboratory setting, held office hours, graded lab reports, designed and graded exams.

CBE 440: The Physical Basis of Human Disease 2014
Gave a lecture on the tumor microenvironment, led in-class discussions and demonstrations, held office hours, graded problem sets and a final project.

MAE 305: Mathematics in Engineering 1 2013
Held office hours for students, graded problem sets and exams.

CBE 245: Introduction to Chemical Engineering Principles 2012
Taught precepts and held office hours for students, graded problem sets and exams.

Teaching Assistant, MIT

18.01: Single-Variable Calculus 2008 – 2011
Held recitations and office hours for students, graded problem sets and exams.

18.02: Multi-Variable Calculus 2008 – 2011
Held recitations and office hours for students, graded problem sets and exams.

Teaching and Laboratory Assistant, MIT

7.02: Experimental Biology and Communication 2010
Mentored students in an educational laboratory setting, held office hours, graded written work.

Mentoring Experience

University of Michigan DYNAMIC NANOmedicines Lab Members

MSE Graduate Student Nicole Kormos, University of Michigan 2025 – present
Awards/Honors: NSF GRFP (2026)

BME Undergraduate Student Varshini Kashyap, University of Michigan 2024 – present

BME Undergraduate Student Aditi Ganesan, University of Michigan 2024 – present
Awards/Honors: UM Summer Undergraduate Research in Engineering (SURE) Program (2025), NSF GRFP (2026)

BME Graduate Student Peyton Panovich, University of Michigan 2023 – present
Awards/Honors: NSF Graduate Research Fellowship Program Honorable Mention (2024), UM Rackham Conference Travel Grant (2024, 2025), NextProf Pathfinder (2024), GAANN Fellowship (2025)

BME Graduate Student Owen Kelly, University of Michigan 2023 – present
Awards/Honors: UM BME Department Chair's Award for Excellence (2023), UM Rackham Conference Travel Grant (2024, 2025)

BME Graduate Student Arianna Markey, University of Michigan 2023 – present
Awards/Honors: Cystic Fibrosis Foundation Student Traineeship Award (2024), Rackham Merit Fellowship (2026)

Research Lab Specialist Associate Miriam Stevens, University of Michigan 2024 – 2025

Awards/Honors: UM Endowment for Basic Sciences (EBS) Research Staff Award (2025),
NSF GRFP (2026)

Current Status: Graduate Student (Ph.D.), University of Virginia

BME Rotation Student Maria Jennings, University of Michigan	2024
ChemE Graduate Student Alaa Mwafy, University of Michigan	2023 – 2024
UROP Student Karen Reynoso, University of Michigan	2023
Current Status: Pre-Nursing Student, Henry Ford College	

University of Michigan Advising/Dissertation Committees

Pharmaceutical Sciences Graduate Student (Ph.D.) Bhanuz Dechayont	2026 – present
BME Graduate Student (Ph.D.) Ningyuan Ye	2026 – present
BME Graduate Student (Ph.D.) Sayre Tillery (Committee Chair)	2026 – present
Chemical Biology Graduate Student (Ph.D.) Kate Desrochers	2025 – present
Cellular & Molecular Biology Graduate Student (Ph.D.) Rachel Dziekan	2025 – present
BME Graduate Student (Ph.D.) Joshua Liu (Committee Chair)	2025 – present
BME Graduate Student (Ph.D.) Shivanie Kodikalla (Committee Chair)	2025 – present
BME Graduate Student (Ph.D.) Yinying Yang (Committee Chair)	2024 – present
BME Graduate Student (Ph.D.) Brooke Smiley	2024 – present
BME Graduate Student (Ph.D.) John-Paul Pham	2024 – present
BME Graduate Student (Ph.D.) Sydney Wheeler	2024 – present
Pharmaceutical Sciences Graduate Student (Ph.D.) Shurong Zhou	2024 – 2025
ChemE Graduate Student (Ph.D.) Haolong Huang	2024 – 2025
BME Graduate Student (Masters) Qihan Xu	2026
BME Graduate Student (Masters) Cole Weber	2026
BME Graduate Student (Masters) Amogh Angadi	2024
BME Graduate Student (Masters) Leon Wagner	2024

External Advising/Dissertation Committees

Chemical and Biological Engineering Graduate Student Valerie Lallo
Villanova University 2024 – present

Yale University (during Postdoctoral Training)

M.D./Ph.D. Student Anna Lynn, Yale University 2023 – 2025

M.D./Ph.D. Student Alexandra Suberi, Yale University 2021 – 2023
Current Status: Resident, University of Pennsylvania School of Medicine

Graduate Student Melanie Reschke, Yale University 2021 – 2022
Current Status: Scientific Developer, Emerald Cloud Lab

Postgraduate Associate David Eaton, Yale University 2020 – 2022
Current Status: Resident, Yale School of Medicine

Graduate Student Molly Grun, Yale University 2019 – 2021
Current Status: Senior Scientist, Detect

Exchange Student Carina Graham, UCL/Yale University 2020 – 2021
Current Status: Ph.D. Student, University College London

Senior Thesis Student Emily Xu, Yale University 2019 – 2021
Current Status: M.D. Student, University of Pennsylvania

Postgraduate Associate Douglas Wu, Yale University 2019 – 2020
Current Status: M.D./Ph.D. Student, Case Western School of Medicine

Postgraduate Associate Chun-Yu Lin, Yale University 2018 – 2019
Current Status: Ph.D. Student, University of Toronto

Senior Thesis Student Kay Nakazawa, Yale University 2017 – 2018
Current Status: Masters Student, San Francisco Conservatory of Music

Princeton University (during Graduate Training)

Graduate Student Brian Nerger, Princeton University 2016
Current Status: Postdoctoral Fellow, Harvard University

Graduate Student Abraham Wolf, Princeton University 2016

Senior Thesis Student Sahana Jayaraman, Princeton University 2015 – 2016
Current Status: M.D./Ph.D. Student, Johns Hopkins University School of Medicine

Molecular Biophysics REU Student Virginia Lane, Princeton University 2014

Current Status: Ph.D. Student, Carnegie Mellon University

Served as Resident Graduate Student, Rockefeller College, Princeton University 2012 – 2016
Mentored undergraduate students living in the Rockefeller College and organized activities; developed a peer academic advising program and a “Women in Science” discussion series.

Honors and Awards

Biomedical Engineering Society (BMES) Young Pioneer in Drug Delivery	2025
Selected for the AAMC Early-Career Faculty Leadership Development Seminar	2025
Faculty Starter Grant in Drug Delivery, PhRMA Foundation PhRMA Foundation Profile	2024
EDGE in Tech Athena Early Career Award, UC Berkeley/CITRIS/Banatao Institute	2024
College of Engineering DEI Faculty Grant, University of Michigan	2023 – 2024
Janeway Society Member, Yale School of Medicine	2022
NIH K99/R00 Pathway to Independence Award, NHLBI	2021 – 2026
Cystic Fibrosis Foundation Postdoc-to-Faculty Transition Award	2021 – 2026
Top 10 Junior Investigator Abstract in Basic Science, NACFC 2020 Annual Conference	2020
Cystic Fibrosis Foundation Postdoctoral Research Fellowship Award	2020 – 2021
ASGCT Meritorious Abstract Travel Award, ASGCT 2019 Annual Meeting	2019
NIH NRSA F32 Postdoctoral Fellowship, NHLBI	2018 – 2020
NIH NRSA T32 Postdoctoral Fellowship, DHHS	2016 – 2018
Best Presentation in Development and Aging Session, AIChE 2015 Annual Meeting	2015
Wu Prize for Excellence in Engineering, Princeton University	2015
Charlotte Elizabeth Procter Honoric Fellowship, Princeton University	2015 – 2016
Graduate School Teaching Award, Princeton University	2015
William R. Schowalter Travel Fund Award, Princeton University	2013, 2014, 2015, 2016

Peter and Sharon Fiekowsky Teaching Award, MIT	2011
Burchard Scholar in the Humanities, Arts, and Social Sciences, MIT	2010
Peter and Sharon Fiekowsky Award for Community Service, MIT	2009

Active Grants

Cystic Fibrosis Foundation Postdoc-to-Faculty Transition Award: PIOTRO21F5

06/2021 – 05/2027 \$352,146.00 (NCE)

PI: Piotrowski-Daspit

Title: Developing Biodegradable Polymeric Nucleic Acid Delivery Vehicles and High-throughput Platforms for the Treatment of Cystic Fibrosis

Role: PI

National Institutes of Health/NHLBI K99/R00 Pathway to Independence Award: R00 HL151806

07/2023 – 06/2027 \$856,198.00 (NCE)

PI: Piotrowski-Daspit

Title: Developing Gene Editing Therapeutics, Biodegradable Polymeric Delivery Vehicles, and High-throughput Platforms for the Treatment of Cystic Fibrosis

Role: PI

Emily's Entourage Research Grant

01/2024 – 06/2026 \$220,000.00 (NCE)

PI: Piotrowski-Daspit

Title: Multi-organ targeted non-viral nucleic acid delivery for CF nonsense mutations

Role: PI

Cystic Fibrosis Foundation PTAC Collaborative Research Grant HASTIN23G0-COLLAB

12/2023 – 11/2026 \$3,254,400.00

PI: Hastings

Title: Discovery and Development of RNA Therapeutics for Cystic Fibrosis

Role: Co-PI

PhRMA Foundation Faculty Starter Grant in Drug Delivery

07/2024 – 06/2026 \$100,000.00 (NCE)

PI: Piotrowski-Daspit

Title: Antibody-Mediated Targeting Strategies to Augment Polymeric Nanoparticle Delivery to Target Tissues In Vivo

Role: PI

Cystic Fibrosis Foundation Program Development Award PIOTRO24R2

08/2024 – 07/2026 \$500,000.00

PI: Piotrowski-Daspit

Title: CYFI-UM: Cystic Fibrosis Research Center Program Development at the University of Michigan

Role: PI

Bold Challenges Accelerate Award, UM Office of the Vice President for Research

11/2025 – 02/2027 \$65,532.00

PI: Piotrowski-Daspi

Title: Accelerating Genetic Therapies for Cystic Fibrosis at U-M: Building an Interdisciplinary Center for Translational Impact

Role: PI

Editorial Services to Scholarly Publications

Section Editor (with Irene de Lázaro), *Current Stem Cell Reports* 2023 – 2024
“Stem Cells and Nanotechnologies” for Volume 10 (2024)

Ad hoc Referee for the following journals: 2022 – present
Journal of Controlled Release
Nature Communications
Nanomedicine
Cell Biomaterials
Expert Opinion on Drug Delivery

Professional Activities, Service, and Leadership

Drug Delivery Track Chair, Biomedical Engineering Society Annual Meeting 2026

Abstract reviewer for the following professional meetings: 2024 – present
American Society for Gene and Cell Therapy Annual Meeting
North American Cystic Fibrosis Conference
Biomedical Engineering Society Annual Meeting

Session Chair, Biomedical Engineering Society (BMES) Annual Meeting 2024

Session Chair, North American Cystic Fibrosis Conference (NACFC) 2023-2026

Session Moderator, Cystic Fibrosis Foundation (CFF) Research Conference 2023, 2024, 2025

Session Moderator, Ohio Valley Cystic Fibrosis Consortium Annual Meeting 2024, 2026

Judge, NACFC Junior Investigator Best Abstract in Basic Science (JIBS) Competition 2025

Lead Organizer, Cystic Fibrosis Research Center at the University of Michigan 2023 – present
University of Michigan

Cystic Fibrosis Foundation Review Committee Member 2024 – present
Research and Research Training (RRT)/Path to a Cure (PTAC) Review Committee

Ad hoc referee for NextProf Nexus Applications	2025, 2026
Ad hoc referee for Emily's Entourage Translational Grant Program	2025
Ad hoc referee for National Institutes of Health (NIH) Therapeutic Approaches to Genetic Diseases (TAG) Study Section	2025
Ad hoc referee for the Italian Cystic Fibrosis Research Foundation	2025
Ad hoc referee for UM Michigan Materials Research Institute (MMRI)	2024 – 2025
Ad hoc referee for the Cystic Fibrosis Foundation CFF Pioneer Award Review Panel	2023
Ad hoc referee for National Institutes of Health (NIH) NIGMS K99/R00 Special Emphasis Panel	2023
UM BME Department 2025 Culture & Community Committee Co-Chair	2025 – present
UM BME Department 2025 Strategic Planning Working Group Lead: People	2024 – 2025
UM BME Department Seminar Series Organizer	2023 – 2025
UM BME Department Biochemical Curricular Committee	2023 – present
Co-Founder of Xanadu Bio, Inc.	2021 – present
Consultant for Xanadu Bio, Inc.	2021 – 2024
Consultant for TruCode Gene Repair, Inc.	2017 – 2018
Career Services Graduate Student Advisory Board Member Princeton University	2015 – 2016
Chemical and Biological Engineering Graduate Class Representative Princeton University	2013 – 2016
Lead Organizer, Chemical & Biological Engineering Graduate Student Symposium Princeton University	2014
Lead Organizer, Workshop on the <i>Mechanobiology of Somitogenesis</i> Lorentz International Center for Workshops in the Sciences, The Netherlands	2014
Vice President, MIT AIChE Student Chapter MIT	2010 – 2011

Professional Societies

American Institute of Chemical Engineers (AIChE)

American Society of Gene and Cell Therapy (ASGCT)

Biomedical Engineering Society (BMES)

Controlled Release Society (CRS)

Somatic Cell Genome Editing Consortium (SCGE)

Invited Talks

34. **AS Piotrowski-Daspit.** (2026). Cell-Specific Delivery for Cystic Fibrosis Genetic Therapies. *Cystic Fibrosis Foundation Therapeutics Laboratory Seminar Series* (September).

33. **AS Piotrowski-Daspit.** (2026) Engineered nanoparticle conjugates for targeting airway epithelial cells in physiologically relevant human model systems. *Cystic Fibrosis Foundation Research Conference* (June).

32. **AS Piotrowski-Daspit.** (2026) Genetic Therapies for Cystic Fibrosis: The Delivery Perspective. *Cincinnati Children's/University of Cincinnati Cystic Fibrosis Research Seminar Series* (May).

31. **OM Kelly, AS Piotrowski-Daspit.** (2025) Engineered Peptide-nanoparticle Conjugates for Targeting Airway Epithelial Cells. *Pulmonary & Critical Care Research Conference*, University of Michigan Medical School (November).

30. **AS Piotrowski-Daspit.** (2025) Surface Functionalized Polymeric Nanoparticles for Cell-Specific Delivery of Genetic Therapies. *North American Cystic Fibrosis Conference (NACFC)* (October).

29. **AS Piotrowski-Daspit.** (2025) Polymeric nanoparticles for nucleic acid delivery: strategies for overcoming physiological barriers. *BMES 2025 Young Pioneer Special Session at the Biomedical Engineering Society (BMES) Annual Meeting* (October).

28. M Hastings, RO Niederer, **AS Piotrowski-Daspit.** (2025) Targeting Nucleic Acid Therapies to Recover CFTR Function in Cystic Fibrosis. *Cystic Fibrosis Foundation Research Conference* (June).

27. **AS Piotrowski-Daspit.** (2025) Overcoming Barriers in the Lung and GI Tract: Advances in Gene Delivery, Stem Cells, and Therapeutic Targeting. *American Society for Gene and Cell Therapy (ASGCT) Annual Meeting* (May).

26. **AS Piotrowski-Daspit** and AH Morris. (2024). Building Inclusive Communities: DEI Strategies in Engineering. *University of Michigan College of Engineering DEI Lecture Series*, University of Michigan (October).
25. **AS Piotrowski-Daspit**. (2024). Polymeric vehicles for nucleic acid delivery. *Pharmaceutical Sciences Department Seminar*, University of Michigan (September).
24. **AS Piotrowski-Daspit**. (2024). Rational drug delivery design to overcome physiological barriers. *Pharmacology and Physiology Department Seminar*, University of Rochester Medical Center (June).
23. **AS Piotrowski-Daspit**. (2024) RNA: the delivery perspective. *RNA Innovation Seminar Series*, University of Michigan Center for RNA Biomedicine (June).
22. **AS Piotrowski-Daspit**. (2023) Polymeric Nanoparticle Strategies to Overcome Barriers for Systemic CF Gene Therapy. *North American Cystic Fibrosis Conference (NACFC)* (November).
21. **AS Piotrowski-Daspit**. (2023) Designing polymeric nanoparticles for nucleic acid delivery. *3M Industry Seminar* (September).
20. **AS Piotrowski-Daspit**. (2023) Polymeric nanoparticle strategies to restore CFTR function. *American Society for Gene and Cell Therapy (ASGCT) Annual Meeting* (May).
19. **AS Piotrowski-Daspit**. (2023) Nanoparticle-mediated therapeutic nucleic acid delivery for in vivo multi-organ CF treatment. *Pediatric Pulmonary Conference*, University of Michigan Medical School (May).
18. **AS Piotrowski-Daspit**. (2023) Delivery Vehicles for CF genetic therapies. *Ohio Valley CF Consortium Conference* (May).
17. **AS Piotrowski-Daspit**, LG Bracaglia, ME Egan, PM Glazer, WM Saltzman. (2022) Optimizing polymeric vehicles for multi-organ *in vivo* delivery. *Cystic Fibrosis Foundation Research Conference* (June).
16. **AS Piotrowski-Daspit**, LG Bracaglia, ME Egan, PM Glazer, WM Saltzman. (2022) Designing polymeric nanoparticles for systemic delivery *in vivo* to enhance therapeutic effects in key tissues. *Pulmonary Research Conference*, Indiana University School of Medicine (June).
15. **AS Piotrowski-Daspit**, ME Egan, PM Glazer, WM Saltzman. (2022) Designing polymeric nanoparticles for systemic delivery *in vivo* to enhance therapeutic effects in key tissues. *Pulmonary and Critical Care Division Research Conference*, University of Michigan Medical School (May).
14. **AS Piotrowski-Daspit**, ME Egan, PM Glazer, WM Saltzman. (2022) Designing polymeric nanoparticles for systemic delivery *in vivo* to enhance therapeutic effects in key tissues. *BME Department Seminar*, University of Michigan (March).

13. **AS Piotrowski-Daspit**, ME Egan, PM Glazer, WM Saltzman. (2022) Designing polymeric nanoparticles for systemic delivery *in vivo* to enhance therapeutic effects in key tissues. *Bioengineering Department Seminar*, University of Illinois at Urbana-Champaign (February).
12. **AS Piotrowski-Daspit**, ME Egan, PM Glazer, WM Saltzman. (2022) Designing polymeric nanoparticles for systemic delivery *in vivo* to enhance therapeutic effects in key tissues. *BEAM Department Seminar*, Virginia Tech (March).
11. **AS Piotrowski-Daspit**, ME Egan, PM Glazer, WM Saltzman. (2022) Designing polymeric nanoparticles for systemic delivery *in vivo* to enhance therapeutic effects in key tissues. *MSE Department Seminar*, University of Illinois at Urbana-Champaign (February).
10. **AS Piotrowski-Daspit**, ME Egan, PM Glazer, WM Saltzman. (2022) Designing polymeric nanoparticles for systemic delivery *in vivo* to enhance therapeutic effects in key tissues. *Pediatrics Department Seminar*, Yale School of Medicine (February).
9. **AS Piotrowski-Daspit**, ME Egan, PM Glazer, WM Saltzman. (2022) Designing polymeric nanoparticles for systemic delivery *in vivo* to enhance therapeutic effects in key tissues. *BME Department Seminar*, Rutgers University (February).
8. **AS Piotrowski-Daspit**, ME Egan, PM Glazer, WM Saltzman. (2022) Designing polymeric nanoparticles for systemic delivery *in vivo* to enhance therapeutic effects in key tissues. *BME Department Seminar*, Wake Forest University (February).
7. **AS Piotrowski-Daspit**, ME Egan, PM Glazer, WM Saltzman. (2021) Tunable polymeric vehicles for therapeutic delivery to the lung. *NIH NHLBI Workshop: How Can We Use Bioengineering Approaches to (Re)Build a Lung* (December).
6. **AS Piotrowski-Daspit**, ME Egan, PM Glazer, WM Saltzman. (2021) Designing polymeric nanoparticles for systemic delivery *in vivo* to enhance therapeutic effects in key tissues. *CBE Department Seminar*, Drexel University (December).
5. **AS Piotrowski-Daspit**, ME Egan, PM Glazer, WM Saltzman. (2021) Designing nanoparticles for systemic delivery *in vivo* to enhance therapeutic effects in key tissues. *BME Department Seminar*, Boston University (February).
4. **AS Piotrowski-Daspit**, ME Egan, PM Glazer, WM Saltzman. (2020) Nanoparticle-mediated Therapeutic Nucleic Acid Delivery to the Lungs. *BME Department Seminar*, Yale University (October).
3. **AS Piotrowski-Daspit**, ME Egan, PM Glazer, WM Saltzman. (2020) Systemic Delivery of PNA Nanoparticles to Correct F508del CFTR *In Vivo*. *Oligonucleotide Therapeutics Society Annual Meeting* (September).
2. **AS Piotrowski-Daspit**, ME Egan, PM Glazer, WM Saltzman. (2018) Polymeric Vehicles for Nucleic Acid Delivery: Peptide Nucleic Acid-mediated Genome Editing. *Cystic Fibrosis Foundation Research Conference* (June).

1. **AS Piotrowski**, J Tien, CM Nelson. (2015) Interstitial fluid pressure regulates collective invasion via mesenchymal and epithelial genes in an engineered human breast tumor model. *BioEngineering Colloquium*, Princeton University (May).

Abstracts at Scholarly Meetings

59. **AI Markey, M Stevens, PM Panovich, OM Kelly, A Ganesan, AS Piotrowski-Daspit**. (2026) Quantitative Analysis of Systemic Polymeric Nanoparticle Delivery for Cystic Fibrosis Applications in Animal Models. *Ohio Valley CF Consortium Conference*: Columbus, OH.

58. **A Ganesan, PM Panovich, AS Piotrowski-Daspit**. (2026) Cargo-free nanoparticle decoys modulate macrophage phagocytosis in wildtype and cystic fibrosis models. *Ohio Valley CF Consortium Conference*: Columbus, OH.

57. **OM Kelly, V Kashyap, V Ponnusamy, AI Markey, PM Panovich, A Ganesan, N Walker, J Khater, M Stevens, P Hsu, J Spence, AS Piotrowski-Daspit**. (2026) Engineered peptide-nanoparticle conjugates for targeting airway epithelial cells. *Ohio Valley CF Consortium Conference*: Columbus, OH. [Podium Presentation]

56. **PM Panovich, A Ganesan, AI Markey, OM Kelly, AS Piotrowski-Daspit**. (2026) Esomeprazole and Cargo-Free Nanoparticle "Decoys" Modulate Phagocytic Clearance of Polymer Nanoparticles for Improved Therapeutic Delivery to the Lung. *Ohio Valley CF Consortium Conference*: Columbus, OH. [Podium Presentation]

55. **OM Kelly, V Kashyap, E Akin, PM Tessier, BM Bordeau, AS Piotrowski-Daspit**. (2025) Antibody/peptide-nanoparticle conjugates for specific cell-type targeting of genetic therapies. *North American Cystic Fibrosis Conference (NACFC)*: Seattle, WA. [Podium Presentation]

54. **PM Panovich, A Ganesan, M Stevens, AS Piotrowski-Daspit**. (2025) Esomeprazole and cargo-free nanoparticle "decoys" modulate phagocytic clearance of polymeric nanoparticles for improved therapeutic delivery to the lung and gastrointestinal tract. *North American Cystic Fibrosis Conference (NACFC)*: Seattle, WA.

53. **A Ganesan, PM Panovich, AS Piotrowski-Daspit**. (2025) Macrophage Polarization Affects Phagocytic Clearance of Polymeric Nanoparticles. *Biomedical Engineering Society (BMES) Annual Meeting*: San Diego, CA.

52. **PM Panovich, A Ganesan, M Stevens, AS Piotrowski-Daspit**. (2025) Esomeprazole and cargo-free nanoparticle "decoys" modulate phagocytic clearance of polymeric nanoparticles. *Biomedical Engineering Society (BMES) Annual Meeting*: San Diego, CA. [Podium Presentation]

51. **OM Kelly, V Kashyap, AS Piotrowski-Daspit**. (2025) Antibody/peptide-nanoparticle conjugates for specific cell-type targeting of genetic therapies. *Biomedical Engineering Society (BMES) Annual Meeting*: San Diego, CA.

50. YC Liu, EM Plaster, A Roy, ML Tan, P Duran, **PM Panovich**, **AS Piotrowski-Daspit**, CA Aguilar, M.L. Killian, and C Loebel. (2025) Synergy of Nascent Matrix and Hydrogel Cues in Guiding Cell Fate. *Biomaterials International*: Seattle, WA. [Podium Presentation]
49. **PM Panovich**, **A Ganesan**, **M Stevens**, **AS Piotrowski-Daspit**. (2025) Cargo-free nanoparticle and esomeprazole decoys prevent phagocytic clearance of therapeutic polymeric nanoparticles. *Ohio Valley CF Consortium Conference*: Columbus, OH.
48. **OM Kelly**, **V Kashyap**, E Akin, P Tessier, B Bordeau, **AS Piotrowski-Daspit**. (2025) Antibody/peptide-nanoparticle conjugates for specific cell-type targeting. *Ohio Valley CF Consortium Conference*: Columbus, OH.
47. **AI Markey**, **M Stevens**, **AS Piotrowski-Daspit**. (2025) Quantitative Microscopy Analysis of Polymeric Nanoparticle Delivery for Cystic Fibrosis Applications in Animal Models. *Ohio Valley CF Consortium Conference*: Columbus, OH.
46. **A Ganesan**, **PM Panovich**, **AS Piotrowski-Daspit**. (2025) Polarization of Macrophages affects Phagocytic Clearance of Polymeric Nanoparticles. *Ohio Valley CF Consortium Conference*: Columbus, OH.
45. **PM Panovich**, **AS Piotrowski-Daspit**. (2024) Engineered Decoy Pretreatment Prevents Phagocytic Clearance of Therapeutic Nanoparticles. *Biomedical Engineering Society (BMES) Annual Meeting*: Baltimore, MD.
44. **OM Kelly**, **AS Piotrowski-Daspit**. (2024) Antibody/nanobody-nanoparticle conjugates for specific cell-type targeting of nucleic acid therapeutics. *Biomedical Engineering Society (BMES) Annual Meeting*: Baltimore, MD.
43. **AS Piotrowski-Daspit**, AY Lynn, DA Eaton, LG Bracaglia, R Mortlock, **AI Markey**, PM Glazer, AF Tarantal, WM Saltzman. (2024) In Utero Gene Delivery in Fetal Rhesus Monkeys Mediated by Polymeric Nanoparticles. *Biomedical Engineering Society (BMES) Annual Meeting*: Baltimore, MD.
42. **AS Piotrowski-Daspit**, AY Lynn, DA Eaton, LG Bracaglia, R Mortlock, AF Tarantal, PM Glazer, WM Saltzman. (2024) Polymeric Nanoparticles for In Utero Gene Delivery in Non-Human Primates. *North American Cystic Fibrosis Conference (NACFC)*: Boston, MA. [Podium Presentation]
41. **OM Kelly**, **AS Piotrowski-Daspit**. (2024) Antibody-nanoparticle conjugates for specific cell-type targeting of nucleic acid therapeutics. *Ohio Valley CF Consortium Conference*: Columbus, OH.
40. **PM Panovich**, **AS Piotrowski-Daspit**. (2024) Engineered Decoy Pretreatment Avoids Phagocytic Clearance of Polymeric Nanoparticles. *Ohio Valley CF Consortium Conference*: Columbus, OH.

39. **AS Piotrowski-Daspit**, AS Suberi, LG Bracaglia, L Akhtar, HW Suh, M Ene, ME Egan, PM Glazer, WM Saltzman. (2023) Gene Editing in the Lung Using Polymeric Vehicles. *American Society of Gene and Cell Therapy (ASGCT) Annual Meeting*: Los Angeles, CA.
38. DA Eaton, AY Lynn, M Ene, HW Suh, B Boles, **AS Piotrowski-Daspit**, E Quijano, DH Stitelman, PM Glazer, WM Saltzman. (2023) Non-Viral Method for Delivering mRNA to the Lung in a Mouse Model. *American Society of Gene and Cell Therapy (ASGCT) Annual Meeting*: Los Angeles, CA.
37. AY Lynn, **AS Piotrowski-Daspit**, LG Bracaglia, DA Eaton, RD Mortlock, AF Tarantal, PM Glazer, WM Saltzman. (2023) Polymeric Nanoparticles for *In Utero* Gene Delivery in the Fetal Rhesus Monkey. *American Society of Gene and Cell Therapy (ASGCT) Annual Meeting*: Los Angeles, CA.
36. **AS Piotrowski-Daspit**, LG Bracaglia, C Barone, R Nguyen, PM Glazer, ME Egan, WM Saltzman. (2021) *In Vivo* Nanoparticle-mediated Therapeutic Nucleic Acid Delivery for CF Treatment. *North American Cystic Fibrosis Conference (NACFC)*: Virtual. [Podium Presentation]
35. **AS Piotrowski-Daspit**, LG Bracaglia, DA Eaton, TC Binns, WM Saltzman. (2021) Assessing the *in vivo* Tropism of Tunable Polymeric Vehicles Using High-throughput Tools. *Biomedical Engineering Society (BMES) Annual Meeting*: Orlando, FL. [Podium Presentation]
34. LG Bracaglia, **AS Piotrowski-Daspit**, DA Eaton, TC Binns, JS Pober, WM Saltzman. (2021) Tailoring a Novel Polymeric NP Chemical Composition for Nucleic Acid Delivery to Endothelial Cells. *Biomedical Engineering Society (BMES) Annual Meeting*: Virtual.
33. **AS Piotrowski-Daspit**, C Barone, CY Lin, Y Deng, D Wu, AS Ricciardi, R Putman, R Nguyen, A Gupta, R Fan, PM Glazer, WM Saltzman, ME Egan. (2020) Systemic Delivery of PNA nanoparticles to correct F508del CFTR *in vivo*. *North American Cystic Fibrosis Conference (NACFC)*: Virtual. [Selected as a Top 10 Abstract in Basic Science]
32. **AS Piotrowski-Daspit**, LG Bracaglia, CY Lin, ZM Moscato, Y Wang, GT Tietjen, WM Saltzman. (2020) High-throughput Quantitative Microscopy-based Half-life Measurements of Intravenously Injected Agents. *Biomedical Engineering Society (BMES) Annual Meeting*: Virtual.
31. MK Grun, **AS Piotrowski-Daspit**, A Suberi, V Gomerding, ZM Moscato, WM Saltzman. (2020) PEGylation of Poly(amine-co-ester) Polyplexes for Versatile Delivery of Nucleic Acids *In Vitro* and *In Vivo*. *Biomedical Engineering Society (BMES) Annual Meeting*: Virtual.
30. **AS Piotrowski-Daspit**, LG Bracaglia, CY Lin, ZM Moscato, Y Wang, GT Tietjen, WM Saltzman. (2020) High-throughput Quantitative Microscopy-based Half-life Measurements of Intravenously Injected Agents. *Controlled Release Society (CRS) Annual Meeting*: Virtual. [Podium Presentation]
29. **AS Piotrowski-Daspit**, C Barone, AC Kauffman, CY Lin, R Nguyen, AS Ricciardi, A Gupta, PM Glazer, WM Saltzman, ME Egan. (2019) Gene Editing of the F508del Cystic Fibrosis

Mutation *In Vitro* and *In Vivo* Mediated by PNA Nanoparticles. *North American Cystic Fibrosis Conference (NACFC)*: Nashville, TN. [Podium Presentation]

28. **AS Piotrowski-Daspit**, C Barone, CY Lin, H Jamali, R Nguyen, AS Ricciardi, A Gupta, PM Glazer, WM Saltzman, ME Egan. (2019) Gene Editing of Class I CFTR Mutations Mediated by PNA Nanoparticles. *North American Cystic Fibrosis Conference (NACFC)*: Nashville, TN.

27. C Barone, H Jamali, **AS Piotrowski-Daspit**, R Nguyen, PM Glazer, WM Saltzman, ME Egan. (2019) Expansion of the Nasal and Tracheal Epithelial Cells from a Single Mouse Generates Multiple ALI Monolayers. *North American Cystic Fibrosis Conference (NACFC)*: Nashville, TN.

26. CY Lin, **AS Piotrowski-Daspit**, AC Kauffman, WM Saltzman. (2019) Biodistribution of Biodegradable Poly(amine-co-ester) Nanoparticles after Intravenous Injection in Adult Mice. *Biomedical Engineering Society (BMES) Annual Meeting*: Philadelphia, PA.

25. **AS Piotrowski-Daspit**, AC Kauffman, CY Lin, Y Liu, PM Glazer, WM Saltzman (2019). Gene Correction of β -thalassemia *ex vivo* and *in vivo* Mediated by PNA Nanoparticles. *Somatic Cell Gene Editing (SCGE) Consortium June Meeting*: Bethesda, MD. [Podium Presentation]

24. **AS Piotrowski-Daspit**, C Barone, AC Kauffman, CY Lin, R Nguyen, A Gupta, PM Glazer, WM Saltzman, ME Egan. (2019) Gene Editing of Cystic Fibrosis Mutations *in vitro* and *in vivo* Mediated by PNA Nanoparticles. *American Society of Gene and Cell Therapy (ASGCT) Annual Meeting*: Washington, DC. [Podium Presentation]

23. **AS Piotrowski-Daspit**, AC Kauffman, CY Lin, PM Glazer, WM Saltzman. (2019) Gene Correction of β -thalassemia *ex vivo* and *in vivo* Mediated by PNA Nanoparticles. *American Society of Gene and Cell Therapy (ASGCT) Annual Meeting*: Washington, DC. [Podium Presentation]

22. H Jamali, A Gupta, C Barone, AS Ricciardi, E Quijano, **AS Piotrowski-Daspit**, WM Saltzman, PM Glazer, ME Egan. (2018) Correction of CFTR Mutations Using Peptide Nucleic Acids Delivered in Polymeric Nanoparticles *In Vitro*. *North American Cystic Fibrosis Conference (NACFC)*: Denver, CO.

21. **AS Piotrowski-Daspit**, AC Kauffman, KH Nakazawa, Y Jiang, WM Saltzman. (2018) Versatile Biodegradable Poly(amine-co-ester) Polymers for Customized Nucleic Acid Delivery. *Controlled Release Society (CRS) Annual Meeting*: New York, NY.

20. **AS Piotrowski-Daspit**, AC Goodfriend, PM Glazer, WM Saltzman. (2018) Poly(amine-co-ester) Nanoparticles for the Delivery of Peptide Nucleic Acid Gene Editing Agents to Correct β -thalassemia. *American Society of Gene and Cell Therapy (ASGCT) Annual Meeting*: Chicago, IL.

19. AP Kourouklis, AK Simi, **AS Piotrowski-Daspit**, J Tien, CM Nelson. (2018) The relationship between interstitial fluid pressure, collective invasion, and YAP activation in engineered human

breast tumors. *American Association for Cancer Research (AACR) Annual Meeting*: Chicago, IL.

18. BA Nerger, **AS Piotrowski-Daspit**, AE Wolf, S Sundaresan, CM Nelson. (2017) Quantifying tissue-induced collagen fiber alignment in 3D microfabricated tissues. *American Institute of Chemical Engineers (AIChE) Annual Meeting*: Minneapolis, MN.

17. BA Nerger, **AS Piotrowski-Daspit**, AE Wolf, S Sundaresan, CM Nelson. (2017) Quantifying the dynamics of tissue-induced alignment of collagen fibers. *American Society for Cell Biology (ASCB) Annual Meeting*: Philadelphia, PA.

16. BA Nerger, **AS Piotrowski-Daspit**, CM Nelson. (2016) Cell-Induced Alignment of Fibrous Extracellular Matrix in 3D Microfabricated Tissues. *Biomedical Engineering Society (BMES) Annual Meeting*: Minneapolis, MN.

15. **AS Piotrowski-Daspit**, J Tien, CM Nelson. (2016) Interstitial fluid pressure alters cell motility and collective invasion via EMT marker expression in an engineered model of a human breast tumor. *American Association for Cancer Research (AACR) Annual Meeting*: New Orleans, LA.

14. **AS Piotrowski**, VD Varner, CM Nelson. (2015) Mechanical force dynamics during 3D collective migration. *American Society for Cell Biology (ASCB) Annual Meeting*: San Diego, CA.

13. **AS Piotrowski-Daspit**, N Gjorevski, VD Varner, MJ Siedlik, CM Nelson. (2015) Dynamic tensile forces drive collective migration through three-dimensional extracellular matrices. *American Institute of Chemical Engineers (AIChE) Annual Meeting*: Salt Lake City, UT. [Podium Presentation]

12. **AS Piotrowski-Daspit**, J Tien, CM Nelson. (2015) Interstitial Fluid Pressure (IFP) Drives Collective Invasion via Expression of Epithelial-Mesenchymal Transition (EMT) Markers in an Engineered Model of a Human Breast Tumor. *Biomedical Engineering Society (BMES) Annual Meeting*: Tampa, FA.

11. **AS Piotrowski**, J Tien, CM Nelson. (2015) Interstitial fluid pressure regulates collective invasion via Snail1, vimentin, and E-cadherin in an engineered human breast tumor model. *Cold Spring Harbor Laboratory Meeting Biology of Cancer: Microenvironment, Metastasis, and Therapeutics*: Cold Spring Harbor, NY.

10. **AS Piotrowski**, N Gjorevski, VD Varner, CM Nelson. (2015) Dynamic tensile forces drive collective migration through three-dimensional extracellular matrices. *Society for Developmental Biology (SDB) Mid-Atlantic Regional Meeting*: Princeton, NJ.

9. **AS Piotrowski**, N Gjorevski, VD Varner, CM Nelson. (2014) Dynamic tensile forces drive collective migration through three-dimensional extracellular matrices. *American Society for Cell Biology (ASCB) Annual Meeting*: Philadelphia, PA.

8. **AS Piotrowski**, N Gjorevski, VD Varner, CM Nelson. (2014) Dynamic tensile forces drive collective migration through three-dimensional extracellular matrices. *CBE Department 2014 Graduate Student Symposium*: Princeton, NJ. [Podium Presentation]
7. **AS Piotrowski**, N Gjorevski, VD Varner, CM Nelson. (2014) Dynamic tensile forces drive collective migration through three-dimensional extracellular matrices. Workshop on the *Mechanobiology of Somitogenesis*: Leiden, The Netherlands. [Podium Presentation]
6. V Lane, **AS Piotrowski**, J Tien, CM Nelson. (2014) Interstitial fluid pressure influences gene expression and the invasive phenotype of engineered breast tumors. *National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE) Conference*: New Orleans, LA.
5. **AS Piotrowski**, J Tien, CM Nelson. (2013) Engineering the host and tumor microenvironment. Synthetic tools for understanding biological phenomena and Multi-scale materials in the study and treatment of cancer joint symposium, *Materials Research Society (MRS) Fall National Meeting*: Boston, MA.
4. **AS Piotrowski**, J Tien, CM Nelson. (2013) Interstitial fluid pressure modulates gene expression in engineered models of breast tumors. *American Institute of Chemical Engineers (AIChE) Annual Meeting*: San Francisco, CA. [Podium Presentation]
3. **AS Piotrowski**, J Tien, CM Nelson. (2013) Interstitial fluid pressure modulates gene expression in engineered breast tumors. *Biomedical Engineering Society (BMES) Annual Meeting*: Seattle, WA.
2. MJ Siedlik, N Gjorevski, **AS Piotrowski**, VD Varner, CM Nelson. (2013) Tensile forces drive collective cell migration through three-dimensional extracellular matrices. *Biomedical Engineering Society (BMES) Annual Meeting*: Seattle, WA.
1. **AS Piotrowski**, J Tien, CM Nelson. (2013) Modulation of the invasive phenotype of engineered breast tumors by the physical and cellular microenvironment. *Biophysical Society (BPS) Annual Meeting*: Philadelphia, PA.

Patent Applications

Compositions and Methods for In Utero Delivery, U.S. Patent Application 16/603,152 (filed 04/04/2017) W. Mark Saltzman, Peter M. Glazer, Adele S. Ricciardi, David H. Stitelman, James Farrelly, Anthony Bianchi, **Alexandra S. Piotrowski-Daspit**, Amy Kauffman

Poly(amine-co-ester) Nanoparticle Vaccines, U.S. Patent Application 63/287,410 (filed 12/08/2021) Akiko Iwasaki, Tianyang Mao, Benjamin Goldman-Israelow, W. Mark Saltzman, Alexandra Suberi, Melanie Reschke, **Alexandra S. Piotrowski-Daspit**, Hee Won Suh

Surface Conjugation to Poly(amine-co-ester) Nanoparticles for Targeting to Cells and Tissues, U.S. Patent Application 63/292,200 (filed 12/21/2021) **Alexandra S. Piotrowski-Daspit**, Claire Albert, W. Mark Saltzman

Methods and Compositions to Increase Selective Delivery of Nanoparticles to Tissues, U.S. Patent Application 63/357,410 (filed 07/14/2022) **Alexandra S. Piotrowski-Daspit**, Laura G. Bracaglia, Jordan Pober, W. Mark Saltzman

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