

Katelyn E. Swindle-Reilly, Ph.D.

Associate Professor

Biomedical Engineering, Chemical & Biomolecular Engineering

The Ohio State University

3010 Fontana Labs, 140 W 19th Ave

614-292-4602

reilly.198@osu.edu

<http://biomaterials.engineering.osu.edu>

EDUCATION

Georgia Institute of Technology, Atlanta, GA

July 2004

B.S. Chemical Engineering

Cooperative Plan Certificate, High Honors

Washington University in St. Louis, Saint Louis, MO

M.S. Chemical Engineering

May 2006

Thesis: *In situ* formation of hydrogels that are capable of exerting osmotic pressure as vitreous substitutes

Advisor: Nathan Ravi, MD, PhD, MBA

Washington University in St. Louis, Saint Louis, MO

Ph.D. Energy, Environmental, and Chemical Engineering

August 2008

Dissertation: Design of *in situ* gelling biomimetic vitreous substitutes

Advisor: Nathan Ravi, MD, PhD, MBA

ACADEMIC EXPERIENCE

The Ohio State University, Columbus, OH

2016-present

Associate Professor, Biomedical Engineering (BME), May 2023-present

Associate Professor, Chemical and Biomolecular Engineering (CBE), May 2023-present

Assistant Professor, BME, CBE, Sep 2016-May 2023

Courtesy Appointment, Ophthalmology and Visual Sciences, Aug 2016-present

Visiting Assistant Professor, Biomedical Engineering, Feb-Aug 2016

The University of Texas at San Antonio, San Antonio, TX

2013-2015

Adjunct Assistant Professor, Biomedical Engineering

Saint Louis University, St. Louis, MO

2008-2010

Postdoctoral Researcher, Biomedical Engineering

Advisors: Rebecca Kuntz Willits, PhD; Cheryl A. Miller, PhD

OTHER PROFESSIONAL EXPERIENCE

Vitranu, Inc., Columbus, OH

2020-present

Chief Technology Officer

- Startup company to commercialize ocular drug delivery technologies developed in the Swindle-Reilly lab at Ohio State, including the Tunable Extended Release Capsule (TERC)TM for treatment of age-related macular degeneration

Rochal Industries LLC, San Antonio, TX

2011-2015

Senior Scientist, 2013-2015

Research Associate, 2011-2013

- Project manager for research and development of polymeric biomaterials for wound care, infection control, and soft tissue repair resulting in 6 issued US patents with international protection and 2 pending patent applications
- Simultaneously managed multiple products from initial research through manufacturing and regulatory strategy resulting in FDA approval for 4 medical devices (PreviSenseTM No Sting Barrier Film, PreviSenseTM No Sting Antimicrobial Barrier Film, BIAKÖSTM Antimicrobial Skin & Wound Cleanser, Bioshield Silicone Film)

Department of Veterans Affairs Medical Center, St. Louis, MO

2010-2011

Technical Writing Consultant

AWARDS AND HONORS

International

- Emerging Investigator, Biomaterials Science, Royal Society of Chemistry 2022
- Young Investigator Award, Controlled Release Society Ocular Delivery Focus Group 2022
- Emerging Vision Scientist, National Alliance for Eye and Vision Research (NAEVR) 2021
 - https://www.youtube.com/watch?v=JuDB-mK_DJs&list=PLl2tt50y5JnG8n55YIzusnnT5t6GeBmyG&index=10

National

- Equalize 2022, Washington University in St. Louis, Osage University Partners 2022

Regional

- Ohio I.P. Promise: PITCH X Speaker, InnovateOhio 2021
 - <https://www.youtube.com/watch?v=IxC4i75M0hs>
- VIP Presenter, SHOWOHI/O 2021
- Ohio Lions Eye Research Foundation Lois Hagelberger-Huebner Young Investigator Award 2017
- AFCEA Scholarship 2000-2001

University

- 2022 Buckeye Engineering Women in Executive Leadership (BEWEL) Leadership in Innovation Award, The Ohio State University (OSU) 2023
- 2022 College of Engineering Lumley Interdisciplinary Research Award, OSU 2023
- CCTS Inventor Showcase, The Ohio State University Wexner Medical Center 2023
- 2021 Early Career Innovator of the Year Award, The Ohio State University 2022
 - <https://www.youtube.com/watch?v=ZUSBYiNpJHI&t=1s>
- 2021 College of Engineering Innovators Award, The Ohio State University 2022
- CCTS Inventor Showcase, The Ohio State University Wexner Medical Center 2022
- OSU Campus KEEN Rising Star, Kern Entrepreneurial Engineering Network (KEEN) 2021
- 2018 Finalist, Early Career Innovator of the Year, The Ohio State University 2019
 - https://www.youtube.com/watch?v=f52_Hm7ilOY
- ADVANCE REACH for Commercialization Program, The Ohio State University 2017
- Graduate Student Symposium Award, Washington University in St. Louis (WUSTL) 2006
- The Cherryll Walzel-Frick and F. Alan Frick Graduate Scholar, WUSTL 2004-2005
- President's Undergraduate Research Award, Georgia Institute of Technology 2004
- Omega Chi Epsilon Excellence Award, Georgia Institute of Technology 2004
- President's Scholarship, Georgia Institute of Technology 2000-2004
- Faculty Honors, Deans List, Georgia Institute of Technology 2000-2004
- Women in Engineering Scholarship, Georgia Institute of Technology 2001
- Outstanding Sophomore Engineer, Society of Women Engineers (SWE) 2001

RESEARCH

Publications

Refereed Articles (*Corresponding Author) h index-16, 782 citations

<https://scholar.google.com/citations?user=11uXSw4AAAAJ&hl>

- 25) Gingras AA, Smith C, Zhang X, Niu Y, Jansen PA, Zhao Y, Roberts CJ, **Swindle-Reilly KE***, Herderick ED. Low-Cost 3D Printing of Corneal Stroma Scaffolds for Corneal Tissue Engineering. *Current Eye Research*. Submitted. IF 2.424
- 24) Chacin Ruiz EA, **Swindle-Reilly KE**, Ford Versypt AN. Experimental and Mathematical Approaches for Drug Delivery for the Treatment of Wet Age-Related Macular Degeneration. *Journal of Controlled Release*. Submitted. IF 11.467

- 23) Gu X, Allyn MM, **Swindle-Reilly KE**, Palmer AF. ZIF-8 Metal Organic Framework Nanoparticle Loaded with Tense Quaternary State Polymerized Bovine Hemoglobin: Potential Red Blood Cell Substitute with Antioxidant Properties. *Nanoscale*. 15:8832-8844, 2023. IF 8.307
 - 22) Luo RH, Tram NK, Parekh AM, Puri R, Reilly MA, **Swindle-Reilly KE***. The Roles of Vitreous Biomechanics in Ocular Disease, Biomolecule Transport, and Pharmacokinetics. *Current Eye Research*. 48(2):195-207, 2023. IF 2.424
 - 21) Ita ME, Kaletunc GZ, **Swindle-Reilly KE***. Designing A Biomedical Engineering Course to Develop Entrepreneurial Mindset in Students. *Biomedical Engineering Education*. doi.org/10.1007/s43683-022-00101-3, 2023.
 - 20) Che J, DePalma TJ, Sivakumar H, Mezache LS, Tallman MM, Venere M, **Swindle-Reilly KE**, Veeraraghavan R, Skardal A. α CT1 Peptide Sensitizes Glioma Cells to Temozolomide in a Glioblastoma Organoid Platform. *Biotechnology and Bioengineering*. 120(4):1108-1119, 2023. IF 4.542
 - 19) Allyn MM, Rincon-Benavides MA, Chandler HL, Higueta-Castro N, Palmer AF, **Swindle-Reilly KE***. Heme-Albumin as a Potential Novel Protein Therapeutic for Sustained Treatment of Age-Related Macular Degeneration. *Biomaterials Science*, 10:7004-7014, 2022. IF 7.590, **Emerging Investigators Collection**
 - 18) Maxwell CM, Soltisz AM, Rich WW, Choi A, Reilly MA, **Swindle-Reilly KE***. Tunable Alginate Hydrogels as Injectable Drug Delivery Vehicles for Optic Neuropathy. *Journal of Biomedical Materials Research: Part A*. 110(10):1621-1635, 2022. IF 4.396
 - 17) Allyn MM, Luo RH, Hellwarth EB, **Swindle-Reilly KE***. Considerations for Polymers used in Ocular Drug Delivery. *Frontiers in Medicine*. 8:787644, 2022. IF 5.091
 - 16) Tram NK, McLean R, **Swindle-Reilly KE***. Glutathione Improves the Antioxidant Activity of Vitamin C in Human Lens and Retinal Epithelial Cells: Implications for Vitreous Substitutes. *Current Eye Research*. 46(4):470-481, 2021. IF 2.424
 - 15) Tram NK, Maxwell CJ, **Swindle-Reilly KE***. Macro- and Microscale Properties of the Vitreous Humor to Inform Substitute Design and Intravitreal Biotransport. *Current Eye Research*. 46(4):429-444, 2021. IF 2.424
 - 14) Jiang P, Choi A, **Swindle-Reilly KE***. Controlled release of anti-VEGF by redox-responsive polydopamine nanoparticles. *Nanoscale*. 12:17298-17311, 2020. IF 8.307
 - 13) Jiang P, Jacobs KM, Ohr MP, **Swindle-Reilly KE***. Chitosan-Polycaprolactone Core-Shell Microparticles for Sustained Delivery of Bevacizumab. *Molecular Pharmaceutics*. 17(7):2570-2584, 2020. IF 4.939
 - 12) Jiang P, Chaparro FJ, Cuddington CT, Palmer AF, Ohr MP, Lannutti JJ, **Swindle-Reilly KE***. Injectable Biodegradable Bi-layered Capsule for Sustained Delivery of Bevacizumab in Wet Age-related Macular Degeneration. *Journal of Controlled Release*. 320:442-456, 2020. IF 11.467, **Cover**
 - 11) Tram NK, Jiang P, Torres-Flores TC, Jacobs KM, Chandler HL, **Swindle-Reilly KE***. A Hydrogel Vitreous Substitute that Releases Antioxidant. *Macromolecular Bioscience*. 1900305, 2020. IF 5.859
 - 10) Tram NK, Jiang P, Jacobs KM, Ruzga MN, Allen MG, Prieto RP, Carus SA, Reilly MA, **Swindle-Reilly KE***. The Accommodative Tissues May Biomechanically Drive Corneal Morphogenesis. *Journal of Biomechanics*. 100:109582, 2020. IF 2.789
 - 9) Tram NK, **Swindle-Reilly KE***. Rheological Properties and Age-related Changes of the Human Vitreous Humor. *Frontiers in Bioengineering and Biotechnology*. 6:199, doi:10.3389/fbioe.2018.00199, 2018. IF 5.890
 - 8) Wang Q, Huang H, Niu Y, Zhang Z, Jiang P, **Swindle-Reilly KE**, Zhao Y. Microscale cell stretcher to generate spatially uniform equi-biaxial strain using an elastomeric membrane with a contoured thickness profile. *Sensors and Actuators B: Chemical*. 273:1600-1609, 2018. IF 9.221
 - 7) Salamone JC, Salamone AB, **Swindle-Reilly K**, Leung KX-C, McMahon, RE. Grand challenge in Biomaterials-wound healing. *Regenerative Biomaterials*. 3(2):127-128, 2016. IF 6.353
- Prior to Ohio State
- 6) **Swindle-Reilly KE***, Paranjape CS, Miller CA. Electrospun poly(caprolactone)-elastin scaffolds for peripheral nerve regeneration. *Progress in Biomaterials*. 3:20, 2014. IF 4.878

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- 5) **Swindle-Reilly KE**, Papke JB, Kutosky HP, Throm A, Hammer JA, Harkins AB, Willits RK. The impact of laminin on 3D neurite extension in collagen gels. *Journal of Neural Engineering*. 9:046007, 2012. IF 5.379
- 4) **Swindle-Reilly KE**, Shah M, Hamilton PD, Eskin T, Kaushal S, Ravi N. Rabbit study of an *in situ* forming hydrogel vitreous substitute. *Investigative Ophthalmology and Visual Science*. 50:4840-4846, 2009. IF 4.925
- 3) **Swindle KE**, Hamilton PD, Ravi N. In situ formation of hydrogels as vitreous substitutes: viscoelastic comparison to porcine vitreous. *Journal of Biomedical Materials Research*. 87A(3):656-665, 2008. IF 4.396
- 2) **Swindle KE**, Ravi N. Recent Advances in Polymeric Vitreous Substitutes. *Expert Review of Ophthalmology*. 2(2):255-265, 2007. IF 1.490
- 1) Ravi N, Wan KT, **Swindle K**, Hamilton PD, Duan G. Development of techniques to compare mechanical properties of reversible hydrogels with spherical, square columnar and ocular lens geometry. *Polymer*. 47:4203-4209, 2006. IF 4.432

Book Chapters

- 3) **Swindle-Reilly KE***, Reilly MA, Ravi N. Current concepts in the design of hydrogels as vitreous substitutes. *In Biomaterials and regenerative medicine in ophthalmology*, 2nd edition. Chirila TV, Harkin D, eds. Ch 5. Woodhead Publishing Limited, 2016.

Prior to Ohio State

- 2) Reilly MA, **Swindle-Reilly KE**, Ravi N. Hydrogels for intraocular lenses and other ophthalmic prostheses. *In Biomedical hydrogels: Biochemistry, manufacture and medical applications*. Rimmer S, ed. Ch 7. Woodhead Publishing Limited, 2011.
- 1) **Swindle-Reilly KE**, Ravi N. Designing hydrogels as vitreous substitutes in ophthalmic surgery. *In Biomaterials and regenerative medicine in ophthalmology*. Chirila TV, ed. Ch 13. Woodhead Publishing Limited, 2010.

Patents and Patent Applications

- 28) Salamone JC, Salamone AB, **Reilly KE**, Suggs LJ, Chung E, Leung KX-C. Composition and Kits for Pseudoplastic Microgel Matrices. US Patent 11,590,259, Granted Feb. 28, 2023.
- 27) Palmer AF, **Reilly KE**, Allyn M. Therapeutic Protein Cocktail for Ocular Applications. US Patent Application 63/447,767, Filed Feb. 23, 2023.
- 26) **Swindle-Reilly KE**, Walter D. Intraarticular injection Compositions for Treating Joint Conditions. US Patent Application 63/432,726, Filed Dec. 15, 2022.
- 25) Palmer AF, **Reilly KE**, Allyn M. Compositions and Methods for the Treatment of Ocular Diseases and Injuries. US Patent Application PCT/US2022/079971, Filed Nov. 16, 2022.
- 24) Palmer AF, **Reilly KE**, Allyn M. Compositions and Methods for the Treatment of Ocular Diseases and Injuries. US Patent Application 63/413,438, Filed Oct. 5, 2022.
- 23) Skardal A, **Swindle-Reilly KE**, Veeraraghavan R. Sustained Adjunct Therapy to Improve Chemotherapy Efficacy in Glioblastoma with CVU-T as exemplary model. US Patent Application 63/366,199, Filed Jun. 10, 2022.
- 22) **Reilly KE**, Reilly MA, Tram NK. Antioxidant-releasing vitreous substitutes and uses thereof. US Patent Application 17/428,617, Filed Apr. 21, 2022.
International: KR AU JP CN WO CA EP
- 21) Jiang P, **Reilly KE**, Ohr MP, Lannutti J. Drug delivery compositions for ocular administration of therapeutics and methods of use thereof. US Patent Application 17/428,616, Filed Apr. 21, 2022.
International: EP CA KR AU WO JP CN
- 20) Skardal A, **Swindle-Reilly KE**, Veeraraghavan R. Sustained Adjunct Therapy to Improve Chemotherapy Efficacy in Glioblastoma. US Patent Application 63/268,025, Filed Feb. 15, 2022.
- 19) Palmer AF, **Reilly KE**. Compositions and Methods for the Treatment of Ocular Diseases and Injuries. US Patent Application 63/280,095, Filed Nov. 16, 2021.

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- 18) Salamone JC, Salamone AB, **Reilly KE**, Suggs LJ, Chung E, Leung KX-C. Composition and Kits for Pseudoplastic Microgel Matrices. US Patent Application 17/348,468, Filed Oct. 7, 2021.
International: CA KR PT CN ES BR DK WO EP JP MX AU HK
 - 17) Jiang P, **Reilly KE**, Ohr M. Methods and compositions for sustained release microparticles for ocular drug delivery. US Patent Application 17/046,639, Filed May 20, 2021.
International: BR JP CA EP WO CN AU KR
 - 16) Salamone JC, Salamone AB, Leung KXC, **Reilly KE**. Compositions and kits for treating pruritus and methods of using the same. US Patent 10,688,159, Granted Jun. 23, 2020.
International: EP AU WO MX JP BR CA
 - 15) Jiang P, **Reilly KE**. Redox-Responsive Nanoparticle Compositions for Ocular Delivery of Therapeutics. US Patent Application 63/042,086, Filed Jun. 22, 2020.
 - 14) **Reilly KE**, Reilly MA, Tram NK. Antioxidant-Releasing Vitreous Substitutes and Uses Thereof. US Patent Application PCT/US2020/017525, Filed Feb. 10, 2020.
International: KR AU JP CN WO CA EP
 - 13) Jiang P, Lannutti J, Ohr MP, **Reilly KE**. Drug Delivery Compositions for Ocular Administration of Therapeutics and Methods of Use Thereof. US Patent Application PCT/US2020/017523, Filed Feb. 10, 2020.
International: EP CA KR AU WO JP CN
 - 12) **Reilly KE**, Reilly MA, Tram NK. Biomimetic Vitreous Substitute with Ocular Drug Delivery. US Patent Application 62/944,679, Filed Dec. 6, 2019.
 - 11) **Reilly KE**, Reilly MA, Tram NK. Methods and Compositions for an Anti-Oxidant-Releasing Hydrogel Vitreous Substitute. US Patent Application 62/926,267, Filed Oct. 25, 2019.
 - 10) Ohr MP, Jiang P, **Reilly KE**. Methods and Compositions for Sustained Release Microparticles for Ocular Drug Delivery. US Patent Application PCT/US2019/027105, Filed Apr. 10, 2019.
International: BR JP CA EP WO CN AU KR
 - 9) Salamone JC, Leung KXC, Salamone AB, **Reilly KE**. Compositions and kits for enzymatic debridement and methods of using the same. US Patent 10,238,719, Granted Mar. 26, 2019.
 - 8) **Reilly KE**, Reilly MA, Tram NK. Methods and Compositions for an Anti-Oxidant-Releasing Hydrogel Vitreous Substitute. US Patent Application 62/803,419, Filed Feb. 8, 2019.
 - 7) Jiang P, Lannutti J, Ohr MP, **Reilly KE**. Methods and Compositions for Injectable, Sustained Release Biodegradable Bi-layered Capsule for Delivery of Protein Therapeutics. US Patent Application 62/803,388, Filed Feb. 8, 2019.
International: EP CA KR AU WO JP CN
 - 6) Ohr MP, Jiang P, **Reilly KE**. Methods and Compositions for Sustained Release Microparticles for Ocular Drug Delivery. US Patent Application 62/656,199, Filed Apr. 11, 2018.
 - 5) Salamone JC, **Reilly KE**, Nixon RT, Salamone AB, Chen-Leung X. Composition and Kits for Inhibition of Pathogenic Microbial Infection and Methods of Using the Same. US Patent Application 15/693,806, Filed Sep. 1, 2017.
International: CA MX PT DK BR JP ES WO AU EP
 - 4) Salamone JC, Chen-Leung X, Salamone AB, **Reilly KE**. Compositions for Enzymatic Debridement. US Patent 9,592,280, Granted Mar. 14, 2017.
International: SG WO MX AU BR CA EP JP CN KR IL CO PH
 - 3) Salamone JC, **Reilly KE**, Nixon RT, Salamone AB, Chen-Leung X. Composition and Kits for Inhibition of Pathogenic Microbial Infection and Methods of Using the Same. US Patent Application 14/504,079, Filed Apr. 7, 2016.
- Prior to Ohio State
- 2) Salamone JC, **Reilly KE**, Salamone AB, Chen X. Non-Self-Adherent Coating Materials. US Patent 8,877,882, Granted Nov. 4, 2014.
International: EP PT KR BR DK CA AU JP CN ES WO
 - 1) Salamone JC, Chen KX, Salamone AB, **Reilly KE**. Delivery of Biologically-Active Agents from Volatile, Hydrophobic Solvents. US Patent 8,852,648, Granted Oct. 7, 2014.

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International: JP CA AU EP MX NZ BR WO HK

Theses/Dissertations

- 2) **Swindle KE**. Design of in situ gelling biomimetic vitreous substitutes. Washington University in St. Louis, Energy, Environmental, and Chemical Engineering, 2008.
- 1) **Swindle KE**. In Situ Formation of Hydrogels that are Capable of Exerting Osmotic Pressure as Vitreous Substitutes. Washington University in St. Louis, Department of Chemical Engineering, 2006.

Conference Proceedings

- 4) **Swindle-Reilly KE**, Miller CA. Electrospun scaffolds for peripheral nerve regeneration. *AICHE Annual Meeting. Biomaterial Scaffolds for Tissue Engineering*, 2009.
- 3) **Swindle-Reilly KE**, Hamilton PD, Ravi N. Optimized design of thiolated hydrogel vitreous substitutes that form in situ. *PMSE Preprint*. 101:1232-1233, 2009.
- 2) **Swindle KE**, Hamilton PD, Shui YB, Beebe DC, Ravi N. Characterization of copolymeric hydrogel vitreous substitutes that gel in situ. *PMSE Preprint*. 96:609-610, 2007.
- 1) **Swindle KE**, Hamilton PD, Ravi N. Advancements in the development of artificial vitreous humor utilizing polyacrylamide copolymers with disulfide crosslinkers. *Polymer Preprint*. 47(1):59-60, 2006.

Conference Presentations

- 66) Heisler-Taylor T, Hamadmad S, Martini D, Jeng Y, **Swindle-Reilly KE**, Hill K, Phelps M, Cebulla CM. MIF targeted neuroprotection through human serum albumin nanoparticle drug delivery. *ARVO Annual Meeting*, New Orleans, LA, April 2023. Poster
- 65) Allyn MA, Palmer AF, Tamiya S, **Swindle-Reilly KE**. Treatment of Oxidative Stress in Primary Retinal Cells by Heme-Albumin as a Novel Therapeutic Approach for Age-Related Macular Degeneration. *ARVO Annual Meeting*, New Orleans, LA, April 2023. Oral
- 64) Hamed H, Puri R, Liu J, Cho H, Hansford DJ, Chandler HL, **Swindle-Reilly KE**. Lens epithelial cell response to polymer mechanical properties and micropatterns. *Ophthalmic Biomaterials. Society for Biomaterials Annual Meeting*, San Diego, CA, Apr 2023. Poster
- 63) Puri R, Hamed H, Allyn MM, Green S, **Swindle-Reilly KE**. Investigation of Polymer Substrates to Prevent Posterior Capsular Opacification. *Emerging Researchers National Conference in STEM*, Washington, DC, Feb 2023. Poster
- 62) Chacin Ruiz EA, **Swindle-Reilly KE**, Ford Versypt A. Mathematical Modeling of Drug Release from Bi-Layered Polymer Capsules in the Eye *AICHE Annual Meeting*, Phoenix, AZ, Nov 2022. Poster
- 61) **Swindle-Reilly KE**. Engineering Ocular Polymeric Biomaterials and Drug Delivery Systems. *BMES Annual Meeting*, San Antonio, TX, Oct 2022. Oral
- 60) Maxwell CJ, Hellwarth EB, Soltisz AM, Rich WW, Chandler HL, Reilly MA, **Swindle-Reilly KE**, Therapeutic Delivery from Tunable Hydrogels for Ocular Injuries. *BMES Annual Meeting*, San Antonio, TX, Oct 2022. Poster
- 59) **Swindle-Reilly KE**, Jiang P, Chaparro FJ, Cuddington CT, Palmer AF, Lannutti JJ, Ohr MP. Injectable Capsule for Tunable Extended Therapeutic Delivery. *Controlled Release Society Annual Meeting & Expo*, Montreal, Canada, Jul 2022. Oral
- 58) Allyn MM, Palmer AF, **Swindle-Reilly KE**. Controlled Release of Novel Protein Therapeutics for Treatment of Age-Related Macular Degeneration. *Controlled Release Society Annual Meeting & Expo*, Montreal, Canada, Jul 2022. Poster
- 57) **Swindle-Reilly KE**, Ita ME, Kaletunc GZ. Developing a Biomaterials Course with Entrepreneurial Minded Learning. *Biomaterials Education. Society for Biomaterials Annual Meeting*, Baltimore, MD, Apr 2022. Oral
- 56) DePalma TJ, Che J, Mezache LS, Veeraraghavan R, **Swindle-Reilly KE**, Skardal A. Sensitizing Glioma Stem Cells to Temozolomide in Hyaluronan Hydrogel-Based Glioblastoma Organoids. *Biophysical Society Annual Meeting*, San Francisco, CA, Feb 2022. Poster
- 55) Luo R, Khan FN, Winter JO, **Swindle-Reilly KE**. Microfluidic Synthesis of Polydopamine Nanoparticles for Ocular Drug Delivery. *Controlled Release Society*, Virtual, Jul 2021. Poster

- 54) **Swindle-Reilly KE**, Maxwell CJ, Soltisz AM, Choi A, Rich W, Reilly MA. Injectable Alginate Hydrogels for Traumatic Optic Neuropathy. *IOVS*, 62(8):2682, *ARVO Annual Meeting*, Virtual, May 2021. Oral
- 53) Rich W, Chen Z, Mackessy D, Brandt T, Valenzuela D, Kumar B, **Swindle-Reilly KE**, Reilly MA. Effects of ascorbic acid on mechanical and optical properties of cultured porcine lenses. *IOVS*, 62(8):2070, *ARVO Annual Meeting*, Virtual, May 2021. Poster
- 52) Allyn MM, Choi AS, Palmer AF, **Swindle-Reilly KE**. Therapeutic Delivery by Polydopamine Nanoparticles for Treatment of Ocular Inflammation and Angiogenesis. *Society for Biomaterials Annual Meeting*, Virtual, Apr 2021. Poster
- 51) Carpenter SL, **Swindle-Reilly KE**, Ford Versypt AN. Modeling Controlled Release Drug Delivery through Core-Shell Microparticles Using Finite Differences for Spatially Dependent Diffusivity. *AICHE Annual Student Conference*, Virtual, Nov 2020. Poster
- 50) Carpenter SL, **Swindle-Reilly KE**, Ford Versypt AN. Modeling Controlled Release Drug Delivery through Core-Shell Microparticles Using Finite Differences for Spatially Dependent Diffusivity. *Undergraduate Research Conference at the Interface of Mathematics and Biology, National Institute for Mathematical and Biological Synthesis*, Virtual, Oct 2020. Poster
- 49) **Swindle-Reilly KE**, Jiang P, Choi A. Controlled Release of Anti-VEGF by Redox-responsive Polydopamine Nanoparticles. *BMES Annual Meeting*, Virtual, Oct 2020. Oral
- 48) Tram NK, McLean RM, **Swindle-Reilly KE**. Antioxidant Activity and Improved Stability Of Vitamin C In Hydrogel Vitreous Substitutes. *Summer Biomechanics, Bioengineering, and Biotransport Conference (SB3C2020)*, Virtual, Jun 2020. Poster
- 47) Rich WW, Kumar B, Mackessy DJ, Croarkin S, Valenzuela D, Jamora B, **Swindle-Reilly KE**, Reilly MA. Effects of Ascorbic Acid on Cataract Formation in in vitro Porcine Lenses. *IOVS*, 61(7):1031, *ARVO Annual Meeting*, Virtual, May 2020. Poster
- 46) **Swindle-Reilly KE**, McLean RM, Jiang P, Torres-Flores T, Jacobs KM, Chandler HL, Tram NK. Methods to Improve Vitamin C Stability in Hydrogel Vitreous Substitutes to Prevent Cataract. *IOVS*, 61(7):3726, *ARVO Annual Meeting*, Virtual, May 2020. Poster
- 45) **Swindle-Reilly KE**, McLean RM, Jiang P, Torres-Flores T, Jacobs KM, Chandler HL, Tram NK. Methods to Improve Vitamin C Stability in Hydrogel Vitreous Substitutes to Prevent Cataract. *E-ARVO*. The Ohio State University, May 2020. Oral
- 44) Tram NK, Jiang P, Torres-Flores TC, Jacobs KM, Chandler HL, **Swindle-Reilly KE**. A Hydrogel Vitreous Substitute that Releases Antioxidant. *Biomaterials Day*. Case Western Reserve University, Oct 2019. Poster
- 43) **Swindle-Reilly KE**. Using Polymer Design and Processing Principles to Restore Vision. *OSU Materials Week*. Biofabrication, May 2019. Oral
- 42) Jiang P, Lannutti JJ, Ohr MP, **Swindle-Reilly KE**. Bi-layered Capsule for Sustained Release of Bevacizumab to Treat Wet Age-Related Macular Degeneration. *ARVO Annual Meeting*, May 2019. Poster
- 41) Soltisz AM, Ruzga MN, Reilly MA, **Swindle-Reilly KE**. Spatial Variations in Optic Nerve Mechanical Properties. *IOVS*, 60(9):4317, *ARVO Annual Meeting*, May 2019. Poster
- 40) Jiang P, Lannutti JJ, Ohr MP, **Swindle-Reilly KE**. Injectable Biodegradable Bi-layered Capsule for Sustainable Delivery of Protein Therapeutics. *Society for Biomaterials Annual Meeting*. Ophthalmic Biomaterials, Apr 2019. Oral
- 39) Soltisz AM, Thobe SM, Ruzga MN, Reilly MA, **Swindle-Reilly KE**. Evaluation of Semi-Interpenetrating Network for Treating Traumatic Optic Neuropathy. *Society for Biomaterials Annual Meeting*. Ophthalmic Biomaterials, Apr 2019. Poster
- 38) Tram NK, Jacobs KM, **Swindle-Reilly KE**. An antioxidant-releasing hydrogel vitreous substitute. *Society for Biomaterials Annual Meeting*. Ophthalmic Biomaterials, Apr 2019. Oral

- 37) **Swindle-Reilly KE**, Allen MG, Prieto R, Carus S, Chandler HL. Influence of Polymer Properties on Lens Epithelial Cell Response. *BMES Annual Meeting*. Biomaterials - Other, Poster P-TH-156, Abstract 1488, Oct 2018. Poster
- 36) Jiang P, Chaparro FJ, Jacobs KM, Ruzga MN, Zhao Y, Ohr MP, Lannutti JJ, **Swindle-Reilly KE**. Developing a Bilayer Capsule for Sustainable Delivery of Protein Therapeutics. *OSU CBE Graduate Research Symposium*. Poster A.4, Sep 2018. Poster
- 35) Tram NK, **Swindle-Reilly KE**. Rheological Properties of the Human Vitreous Humor. *World Congress of Biomechanics*. Biomechanics of ocular pathologies 1 - Poster P1038, Jul 2018. Poster
- 34) **Swindle-Reilly KE**. Design of Polymers to Advance Treatments of Eye Diseases. *OSU Materials Week*. Bio-emergent Materials, May 2018. Oral
- 33) Jiang P, **Swindle-Reilly KE**. Sustained Drug Delivery Device for Treating Wet Age-related Macular Degeneration. *OSU Materials Week*. Poster W-40, May 2018. Poster
- 32) **Swindle-Reilly KE**, Thobe SM, Jiang P, Soltisz AM, Tram NK, Reilly MA. Development of Therapeutic Hydrogels for Traumatic Optic Neuropathy. *Society for Biomaterials Annual Meeting*. Ophthalmic Biomaterials – Poster 875, Apr 2018. Poster
- 31) Jiang P, Ohr MP, **Swindle-Reilly KE**. Sustained Release Anti-VEGF by Microparticles for Treating Wet Age-Related Macular Degeneration. *Society for Biomaterials Annual Meeting*. Ophthalmic Biomaterials – Poster 877, Apr 2018. Poster
- 30) Tram NK, **Swindle-Reilly KE**. Rheology of the Human Vitreous Humor. *Engineering in Healthcare: Industry and Research Symposium*, Mar 2018. Oral
- 29) Jiang P, Chaparro FJ, Jacobs KM, Lannutti JJ, Ohr MP, **Swindle-Reilly KE**. Sustained Drug Delivery Device for Treating Wet Age-related Macular Degeneration. *Engineering in Healthcare: Industry and Research Symposium*, Mar 2018. Poster
- 28) McMahon R, **Swindle-Reilly KE**, Salamone AB. A New Skin Protectant Offers Reduced Tack and Self-Adherence While Providing a Safe, Non-Stinging, and Effective Barrier Film. *The Symposium on Advanced Wound Care*, Oct 2017. Poster
- 27) **Swindle-Reilly KE**, Carus SA, Schroeder KM, Shingler LM, Tram NK, Chandler HL. Influence of Substrate Chemical and Mechanical Properties on Lens Epithelial Cell Behavior. *IOVS*, 58(8):3193, *ARVO Annual Meeting*. Cataractogenesis II, Poster #3193 - B0224, May 2017. Poster
- 26) Tram NK, Reilly MA, **Swindle-Reilly KE**. The Presence of Accommodative Tissues Influences the Shape of the Developing Eye. *IOVS*, 58(8):3002, *ARVO Annual Meeting*. Factors Affecting Ocular Development, Presentation #3002, May 2017. – Selected as Hot Topic, Oral
- 25) Tram NK, Reilly MA, **Swindle-Reilly KE**. Accommodative Tissues and Intraocular Pressure as Mechanical Determinants of Ocular Morphogenesis: A Finite Element Analysis. *Engineering in Healthcare: Industry and Research Symposium*, Mar 2017. Poster
- 24) Tram NK, **Swindle-Reilly KE**, Reilly MA. The Ciliary Body as a Determining Factor in Eye Development: A Computer Simulation Study. *Midwest BME Regional Conference*, Nov 2016. Poster
- 23) **Swindle-Reilly KE**, Tram NK, Reilly MA, Jones KR, Glickman RD. Development of Hydrogel Therapeutic Delivery System for Traumatic Optic Neuropathy. *BMES Annual Meeting*. Hydrogel Biomaterials, Abstract #1288, Oct 2016. Poster
- 22) Tram NK, **Swindle-Reilly KE**, Reilly MA. The Role of Annular Tissues and Intraocular Pressure in Ocular Morphogenesis. *BMES Annual Meeting*. Computational and Multiscale Modeling in Biomechanics, Abstract #1143, Oct 2016. Poster
- 21) **Swindle-Reilly KE**, Asemota BI, Rodriguez L, Jones KR, Glickman RD, Reilly MA. Development of animal model and hydrogel delivery system to treat traumatic optic neuropathy. *Translational to Clinical (T2C) Regenerative Medicine Wound Care Conference*. Animal Models, Poster #109, Mar 2016. Poster
- 20) **Swindle-Reilly KE**, Salamone JC, Leung KX-C, McMahon RE, Salamone AB. Novel developments in amphiphilic polymers for wound care. *Translational to Clinical (T2C) Regenerative Medicine Wound Care Conference*. Therapeutics and Clinical Studies, Poster #101, Mar 2016. Poster

- 19) Sahu S, **Swindle-Reilly KE**, Willits RK. Effect of additives on neurite growth in collagen gels. *BMES Annual Meeting*. Poster Abstract #7B-19-218, Oct 2010. Poster
- 18) **Swindle-Reilly KE**, Miller CA. Electrospun scaffolds for peripheral nerve regeneration. *AIChE Annual Meeting*. Biomaterial Scaffolds for Tissue Engineering, Nov 2009. Oral
- 17) **Swindle-Reilly KE**, Kutosky H, Willits RK. Effect of additives on neurite length and mechanical properties of collagen gels. *BMES Annual Meeting*. Poster Abstract #PS-9A-179, Oct 2009. Poster
- 16) Paranjape C, Miller C, Willits R, **Swindle-Reilly K**. Optimizing electrospun poly(E-caprolactone) nanofibrous scaffolds for airway tissue engineering. *BMES Annual Meeting*. Undergraduate Research, Oct 2009. Oral
- 15) **Swindle-Reilly KE**, Hamilton PD, Ravi N. Optimized design of thiolated hydrogel vitreous substitutes that form in situ. *ACS National Meeting*. Polymeric Materials: Science & Engineering, Biomaterials & Bioengineering, #PMSE 260, Aug 2009. Oral
- 14) **Swindle KE**, Zhang X, Hamilton PD, Ravi N. A thiolated hydrogel vitreous substitute that forms *in situ*. *BMES Annual Meeting*. Tissue Engineering and Biomaterials, Poster Abstract #P5.128, Oct 2008. Poster
- 13) **Swindle KE**, Hamilton PD, Ravi N. Development of a biomimetic hydrogel vitreous substitute that forms *in situ*. *IOVS*, 49(13):5967, *ARVO Annual Meeting*. Vitreoretinal Surgical Techniques, 49:5967, Poster #A432, May 2008. Poster
- 12) Zhang X, **Swindle KE**, Hamilton PD, Ravi N. Development of *in situ* forming vitreous substitutes from derivatives of poly(methacrylamide). *IOVS*, 49(13):5599, *ARVO Annual Meeting*. Vitreoretinal Drugs and Medical Devices, 49:5599, Poster #A354, May 2008. Poster
- 11) Shah M, **Swindle KE**, Ravi N, Kaushal S. A novel vitreous substitute: an in situ polymerizing hydrogel and *in-vivo* testing in the rabbit model. *American Society of Retina Specialists Meeting*. Instrumentation and Devices/Hereditary Retinal Disease & Genetics/Ocular Oncology/Socioeconomics, *Clinical & Experimental Ophthalmology*, 36:A481, Poster #708, Dec 2007. Poster
- 10) **Swindle KE**, Dobson SS, Ravi N. Optimized design of in situ forming vitreous substitutes. *The Society of Rheology 79th Annual Meeting*. Poster #PO71, Oct 2007. Poster
- 9) **Swindle KE**, Hamilton PD, Shui YB, Beebe DC, Kaushal S, Ravi N. Evaluation of an in situ forming hydrogel as a vitreous substitute. *IOVS*, 48(13):2247, *ARVO Annual Meeting*. Advances in Vitreoretinal Surgery, 48:2247, Poster #B856, May 2007. Poster
- 8) **Swindle KE**, Hamilton PD, Shui YB, Beebe DC, Ravi N. *In situ* formation of copolymeric hydrogels as vitreous substitutes. *Society for Biomaterials Annual Meeting*. Ophthalmologic Biomaterials, Abstract #565, Apr 2007. Oral
- 7) **Swindle KE**, Hamilton PD, Shui YB, Beebe DC, Ravi N. Characterization of copolymeric hydrogel vitreous substitutes that gel in situ. *ACS National Meeting*. Polymeric Materials: Science & Engineering and Sci-Mix, Poster #337, Mar 2007. Poster
- 6) **Swindle KE**, Ravi N. In situ forming hydrogels as vitreous substitutes. *Washington University Graduate Student Symposium*. Engineering, Feb 2007. Poster
- 5) **Swindle KE**, Hamilton PD, Ravi N. Comparison of viscoelastic properties of porcine vitreous to copolymeric hydrogels evaluated as potential vitreous substitutes. *IOVS, ARVO Annual Meeting*. Advances in Vitreoretinal Surgery, 47:1455, Poster #B919, May 2006. Poster
- 4) **Swindle KE**, Ravi N. Preventing Blindness – Replacing the Vitreous with Hydrogels. *Washington University Graduate Student Symposium*. Engineering, Apr 2006. Poster
- 3) **Swindle KE**, Hamilton PD, Ravi N. Advancements in the development of artificial vitreous humor utilizing polyacrylamide copolymers with disulfide crosslinkers. *ACS National Meeting*. Polymer Chemistry, Poster #64, Mar 2006. Poster
- 2) **Swindle KE**, Ravi N. Comparison of crosslink density measurements in hydrogels employing disulfide crosslinker. *ACS Midwest Regional Meeting*. Polymer Chemistry, Poster #93, Oct 2005. Poster
- 1) **Swindle KE**, Dennison KJ, Herger BE, Shuker SB. Study of Inhibitors of HTLV-I Protease. *ACS National Meeting*. Chemical Education, Poster #250, Mar 2004. Poster

Invited Lectures

International

- 2) Journey to Entrepreneurship in Ocular Engineering – Department of Chemical Engineering, McMaster University, Hamilton, Canada (Virtual), February 2023.
- 1) Translating Polymer Engineering to Treatment of Ocular Diseases – Department of Chemical Engineering, McMaster University, Hamilton, Canada (Virtual), March 2021.

National

- 13) Using Polymer Engineering to Treat Ocular Diseases – Chemical Engineering, University of Toledo, Toledo, OH, January 2020.
- 12) Polymeric biomaterials for ocular tissue repair and drug delivery – Big Ten Speaker Exchange, Biomedical Engineering, Purdue University, West Lafayette, IN, October 2017.
- 11) Polymeric biomaterials for soft tissue repair and drug delivery – Biomedical Engineering, The University of Texas at San Antonio, San Antonio, TX, February 2015.
- 10) Design of polymeric biomaterials – Engineering Science, Trinity University, San Antonio, TX, January 2013.
- 9) Design of polymeric biomaterials – Biomedical Engineering, The University of Texas at San Antonio, University of Texas Health Science Center San Antonio, San Antonio, TX, January 2013.
- 8) Design of polymeric biomaterials – Materials Science, Engineering, and Commercialization, Texas State University, San Marcos, TX, April 2012.
- 7) Design of biomimetic polymeric biomaterials – Chemical and Biological Engineering, University of Alabama, Tuscaloosa, AL, February 2011.
- 6) Design of biomimetic polymeric biomaterials – Chemical Engineering, University of Rochester, Rochester, NY, October 2010.
- 5) Design of biomimetic polymeric biomaterials – Chemical Engineering, Rochester Institute of Technology, Rochester, NY, March 2010.
- 4) Design of biomimetic polymeric biomaterials – Chemical Engineering, University of South Carolina, Columbia, SC, March 2010.
- 3) Design of biomimetic polymeric biomaterials – Chemical & Biomedical Engineering, University of South Florida, Tampa, FL, February 2010.
- 2) Design of *in situ* gelling biomimetic vitreous substitutes – Biomedical Engineering, Saint Louis University, St. Louis, MO, September 2008.
- 1) Design of *in situ* gelling biomimetic vitreous substitutes – Institute for Medicine and Engineering, University of Pennsylvania, Philadelphia, PA, June 2008.

Regional

- 11) Keynote Talk: Innovative Biomaterials Solutions to Preserve Vision – *Ohio Lions Eye Research Foundation Convention*, Dublin, OH, May 2023.
- 10) Innovative Therapies for Macular Degeneration - Preserving vision and reducing injections – *CCTS Inventor Showcase*, The Ohio State University Wexner Medical Center, Virtual, April 2023.
- 9) Innovative Therapies for Macular Degeneration - Preserving vision, reducing injections – *CCTS Inventor Showcase*, The Ohio State University Wexner Medical Center, Virtual, February 2022.
- 8) How a Tiny Capsule Can Treat Age-Related Macular Degeneration – *Pitch X Ohio*, Columbus, OH, December 2021.
- 7) Ocular Tunable Extended Release Capsule – *SHOWOHI/O*, Virtual, April 2021.
- 6) Translating Polymer Design and Processing to Treatment of Ocular Diseases – *OSU Materials Week. Biofabrication and Clinical 3D Printing at Ohio State*, Virtual, April 2021.
- 5) Using Polymer Design and Processing Principles to Restore Vision – *OSU Materials Week. Biofabrication*, May 2019.

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- 4) New Materials to Prevent Blindness – *STEM Commercialization, Innovation & Entrepreneurship Forum*, The Ohio State University Ohio Agricultural Research & Development Center, Wooster, OH, November 2018.
- 3) Keynote Talk – *Ohio Lions Eye Research Foundation Convention*, Dublin, OH, May 2018.
- 2) Design of Polymers to Advance Treatments of Eye Diseases – *OSU Materials Week*. Bio-emergent Materials, May 2018.
- 1) Polymers in wound care and ophthalmic applications – *Engineering in Healthcare: Industry and Research Symposium*, The Ohio State University, Columbus, OH, March 2017.

University

- 13) Don't Sell Yourself Short – *OSUxBMES Sculpting Your Future*, The Ohio State University, Virtual, March 2022.
- 12) Translating Polymers to Treatment of Ocular Diseases – Biological Sciences Scholars, The Ohio State University, Virtual, November 2021.
- 11) Using Polymers to Study and Treat Ocular Diseases – Molecular Biophysics Training Program, The Ohio State University, Virtual, September 2021.
- 10) Using Polymer Engineering in the Eye – Biophysics Program, The Ohio State University, December 2020.
- 9) Ocular Drug Delivery – *Ohio State Medical Technology Showcase*, Columbus, OH, June 2019.
- 8) Engineering New Materials to Treat Ocular Diseases – College of Optometry, The Ohio State University, May 2019.
- 7) Antioxidants in Ocular Diseases and Treatments – Center for Advanced Functional Foods Research and Entrepreneurship, The Ohio State University, August 2018.
- 6) Polymeric biomaterials for ocular tissue repair and drug delivery – Ophthalmic Engineering Journal Club, The Ohio State University, November 2017.
- 5) Development of biomaterials and models for ophthalmic applications – Ophthalmology Research Meeting, The Ohio State University Wexner Medical Center, February 2017.
- 4) Design of biomimetic polymeric biomaterials for ophthalmic applications – *DHLRI Research In Progress*, The Ohio State University Wexner Medical Center, February 2017.
- 3) Design of polymeric biomaterials for ophthalmic applications – Ophthalmic Engineering Grand Rounds, The Ohio State University Wexner Medical Center, August 2016.
- 2) Design of polymeric biomaterials for ocular applications – College of Optometry, The Ohio State University, June 2016.
- 1) Polymeric biomaterials for soft tissue repair and drug delivery – Biomedical Engineering, Chemical and Biomolecular Engineering, Materials Science and Engineering, The Ohio State University, Columbus, OH, September 2015.

Press Releases

- 14) BME undergraduate with focus on helping patients wins top award at national conference. Mar 20, 2023. <https://bme.osu.edu/news/2023/03/bme-undergraduate-focus-helping-patients-wins-top-award-national-conference>
- 13) Biomedical engineers aim to improve treatment of military and civilian eye injuries. Dec 19, 2022. <https://engineering.osu.edu/news/2022/12/biomedical-engineers-aim-improve-treatment-military-and-civilian-eye-injuries>
- 12) Grants will accelerate engineering-medicine innovations. Oct 10, 2022. <https://engineering.osu.edu/news/2022/10/grants-will-accelerate-engineering-medicine-innovations>
- 11) An entrepreneur's vision to help others see. Aug 3, 2022. <https://engineering.osu.edu/news/2022/08/entrepreneurs-vision-help-others-see>
- 10) Professor recognized for innovative research on treatments for retinal diseases. Apr 25, 2022. <https://www.thelantern.com/2022/04/professor-recognized-for-innovative-research-on-treatments-for-retinal-diseases/>
- 9) Swindle-Reilly named Early Career Innovator of the Year. Apr 13, 2022. <https://engineering.osu.edu/news/2022/04/swindle-reilly-named-early-career-innovator-year>
- 8) Trio pitching to grow Ohio's innovation economy. Mar 30, 2022. <https://engineering.osu.edu/news/2022/03/trio-pitching-grow-ohios-innovation-economy>

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- 7) New uses for polymers aim to improve patients' lives. Nov 12, 2019. <https://engineering.osu.edu/news/2019/11/new-uses-polymers-aim-improve-patients-lives>
- 6) Sanara MedTech Inc. Announces a Second Exclusive Licensing Agreement with Rochal Industries for Two New Impactful Products. Oct 10, 2019. <https://sanaramedtech.com/sanara-medtech-inc-announces-a-second-exclusive-licensing-agreement-with-rochal-industries-for-two-new-impactful-products/>
- 5) Researchers Report on Advances With Bevacizumab in Treating Eye Disorders. May 5, 2019. <https://www.centerforbiosimilars.com/news/researchers-report-on-advances-with-bevacizumab-in-treating-eye-disorders>
- 4) Fewer needles in one's eye: Swindle-Reilly's work wins award. Sep 26, 2017. <https://engineering.osu.edu/news/2017/09/fewer-needles-ones-eye-swindle-reillys-work-wins-award>
- 3) Eye injury researcher lands UTSA a \$1M grant from the DoD. Jun 19, 2015. <http://www.bizjournals.com/sanantonio/news/2015/06/19/eye-injury-research-lands-utsa-a-1m-grant-from-the.html>
- 2) SwRI researchers to apply facial skin regeneration technology for battlefield injuries. Oct 31, 2013. <http://www.swri.org/9what/releases/2013/afirm-ii.htm#.Us7f7PRDuSr>
- 1) Enzyme Inhibitor: Researchers Test Potential Compounds to Stop Replication of Virus that Causes Adult T-Cell Leukemia. *Georgia Institute of Technology Research News*. Apr 2, 2004. <http://www.gtresearchnews.gatech.edu/newsrelease/htlv.htm>

Current, Pending, and Completed Support

Current Support (\$6.6M Total, \$554k as PI)

- 7) Ohio State UnEYEd Collaborative Funding Initiative – “Role of stretch activated channels in epithelial-mesenchymal transition in the cornea and lens” – **MPI:** S. Tamiya, H. Chandler, M. Reilly, **K.E. Swindle-Reilly** – \$4,000 (01/01/23-12/31/23)
- 6) NIH NEI U01 – “First Aid Medicine to Treat Vesicant-Induced Corneal Injury” – PI: H. Chandler; **Role: Co-I** – \$3,949,166 (09/30/22-08/31/27)
- 5) Ohio State Center for Medical and Engineering Innovation – “Optimization of a Novel Technique to Bioengineer Lens Organoids” – PI: T. Plageman; **Role: Co-PI** – \$25,000 (09/15/22-09/14/23)
- 4) DOD Vision Research Program – “Therapeutic Screening for Traumatic Optic Neuropathy” – PI: M. Reilly; **Role: Co-PI** – \$389,926 (09/01/22-08/31/24)
- 3) Owen Locke Foundation – “Tunable Extended-Release Capsule for Age-Related Macular Degeneration (TERC-AMD)” – **PI: K.E. Swindle-Reilly**; Co-Is: N. Kerur, E. Miller, M. Ohr – \$150,000 (08/01/22-01/31/24)
- 2) NIH NEI R21 – “Lens epithelial cell response to biomaterial interfaces” – **PI: K.E. Swindle-Reilly**; Co-Is: H. Chandler, D. Hansford – \$403,763 (01/01/22-12/31/23)
- 1) NIH NIGMS SBIR Phase II – “Production of a dissolvable hydrogel-based wound dressing for second degree burns” – PIs: A. Colby, B. Cooper; **Role: Consultant** – \$1,697,042 (\$8,000 to OSU) (09/15/21-08/31/23)

Completed Support (\$4.3M Total, \$312k as PI)

- 17) Ohio State Institute for Materials Research Kickstart Facility Grant – “Evaluation of Materials for Corneal Bioprinting” – **PI: K.E. Swindle-Reilly**; Co-Is: E. Herderick, M. Malara, C. Roberts – \$2,500 (05/15/22-05/14/23)
- 16) DOD Vision Translational Research Program – MR130235 – “Torsional Indirect Traumatic Optic Neuropathy (TITON): Animal Model for Diagnostics, Drug Delivery, and Therapeutics for Central Nervous System Injury” – PI: M. Reilly; **Role: Co-PI** – \$1,000,000 (03/29/19-03/28/23)
- 15) Ohio State UnEYEd Collaborative Funding Initiative – “Nanoparticle Delivery System for Ocular Injuries” – **MPI: K.E. Swindle-Reilly**, C. Cebulla, H. Chandler, S. Tamiya – \$4,000 (01/01/22-12/31/22)
- 14) Ohio State President’s Research Excellence (PRE) Accelerator Award – “Local Antioxidant Release to Prevent Cataract After Vitrectomy” – **PI: K.E. Swindle-Reilly**; Co-PIs: C. Cebulla, H. Chandler, E. Miller – \$50,000 (07/01/21-06/30/22)
- 13) Lions VisionGift Barbara L. Crow Investigator-Concept Grant – “Multiscale investigation of ocular tissue properties and biomechanical response” – **MPI: C. Roberts, J. Liu, M. Reilly, K.E. Swindle-Reilly** – \$15,000 (06/01/19-05/31/22)
- 12) Ohio State Institute for Materials Research Kickstart Facility Grant – “Material Characterization of Redox-Responsive Nanoparticles” – **PI: K.E. Swindle-Reilly** – \$2,500 (11/16/20-11/15/21)

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- 11) Ohio Lions Eye Research Foundation Disaster Relief Grant – “Ocular Drug Delivery” – **PI: K.E. Swindle-Reilly** – \$20,000 (09/15/20-09/14/21)
- 10) Ohio Third Frontier TVSF Phase 2 – “Bi-layered Capsule for Sustainable Delivery” – Vitranu PIs: R. Sears, B. Beasecker; **Role: Chief Technology Officer** – \$150,000 (06/01/20-05/31/21)
- 9) Ohio Lions Eye Research Foundation Lois Hagelberger-Huebner Young Investigator Award – “Sustained Release Bevacizumab Injectable for the Treatment of Wet Age-Related Macular Degeneration” – **PI: K.E. Swindle-Reilly**; Co-PI: M. Ohr – \$214,000 (09/15/17-09/14/20)
- 8) Ohio State Institute for Materials Research Kickstart Facility Grant – “Characterization of Nanoparticles and Microdevices for Controlled Release” – **PI: K.E. Swindle-Reilly** – \$2,500 (02/01/19-1/31/20)
- 7) Ohio State Institute for Materials Research Facility Grant – “Evaluating Micropatterning to Control Ocular Cell Behavior” – PI: H. Chandler; **Role: Co-I**; Co-I: D. Hansford – \$2,000 (01/01/18-12/31/18)
- 6) Ohio State Institute for Materials Research Facility Grant – “Characterization of Amphiphilic Polymer Films for Controlling Cell Attachment” – **PI: K.E. Swindle-Reilly** – \$2,000 (01/01/17-12/31/17)
- 5) NIH SBIR Phase I – 1-R43 GM114857-01 – “Topical Microparticle Drug Delivery for Burn Pain Control” – PI: J. Salamone; **Role: Senior Scientist** – \$223,944 (06/01/15-11/30/15)
- 4) NIH SBIR Phase II – 2-R44 GM108070-02 – “Injectable microgel for soft tissue repair” – PI: J. Salamone; **Role: Senior Scientist** – \$1,207,615 (08/01/14-07/31/16)
- 3) DOD AFIRM II – SR-11 – “Biomask for Skin Regeneration” – PI: X. Cheng; **Role: Biomedical Engineer** – \$800,000 (12/01/13-11/30/17)
- 2) NIH SBIR Phase I – 1-R43 GM108070-01 – “Injectable microgel for soft tissue repair” – PI: J. Salamone; **Role: Biomedical Engineer** – \$149,988 (09/01/13-02/28/14)
- 1) NSF SBIR Phase II – IIP-1228399 – “SBIR Phase II: Correlation of Surface Free Energy and Cytocompatibility of Amphiphilic Biomaterials” – PI: J. Salamone; **Role: Biomedical Engineer** – \$467,234 (08/15/12-07/31/14)

Affiliations

- Graduate Faculty, Ohio State Biophysics Program 2020-present
- Member, Ohio State Center for Chemical Biology 2018-present
- Member, Ohio State Center for Clinical and Translational Science (CCTS) 2017-present
- Member, Ohio State Institute for Materials Research (IMR) 2016-present

TEACHING

Courses Taught

Instructor

- BIOMEDE 5310 – Advanced Biomaterials – The Ohio State University (OSU) SP 2023
- BIOMEDE 4210 – Biotransport – The Ohio State University SP 2017-2022, AU 2022
- BIOMEDE/CBE 5194.06 – Polymers in Bioengineering – The Ohio State University AU 2020-2021
- BME 3711 – Biomedical Engineering Laboratory III – University of Texas San Antonio SP 2014
- BME 395 – Design of BME Laboratory Experiments – Saint Louis University SP 2010

Co-Instructor

- BME 3703 – Biotransport Phenomena – University of Texas at San Antonio SP 2014

Guest Lecturer

- CHEM ENG 704 – Current Topics in Chemical Engineering – Entrepreneurship – McMaster University SP 2023
- BMEA 7050 – Intro to Translational Vision Science – The Ohio State University AU 2022
- BIOMEDE 2000 – Intro to BME – The Ohio State University AU 2018-2022
- BIOMEDE 4310 – Biomaterials – The Ohio State University 2017-2023
- BIOMEDE 4900 – Professional Development – The Ohio State University SP 2017-2019

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- BIOMEDE 5194.02 – Ocular Biomechanics – The Ohio State University SP 2022
- BIOMEDE 5310 – Advanced Biomaterials – The Ohio State University AU 2016-2018
- BME 2211 – BME Laboratory I – University of Texas at San Antonio SP 2013
- BME 6823 – Biomechanics II – University of Texas at San Antonio AU 2012
- BME 460 – Quantitative Physiology – Saint Louis University SP 2010
- BME 440 – Biomaterials – Saint Louis University AU 2008-2009

Teaching Assistant

- CHE 262 – Intro to Environmental Engineering – Washington University in St. Louis SP 2007
- CHE 476 – Properties of Materials – Washington University in St. Louis SP 2006
- CHE 320 – Thermodynamics – Washington University in St. Louis SP 2005

Teaching Certifications and Workshops

Teaching Certifications

- Expanding Integration of Entrepreneurial Minded Learning (EML): Faculty Learning Communities for Improving Mentoring Skills, OSU College of Engineering (COE) 2020-2021
- Teaching Endorsement, OSU University Institute for Teaching and Learning (UITL) Research Mentoring Training January 2020
- Teaching Endorsement, OSU UITL Course Design Institute February 2019
- Teaching Endorsement, OSU UITL New Faculty Program Spring 2017

Teaching and Mentoring Workshops

- Facilitating Engineering Faculty Success: Effective Strategies for Setting Students Up for Success After the Ph.D., KEEN Foundation April 2023
- Facilitating Engineering Faculty Success: Effective Strategies for Mentoring Graduate Students, KEEN Foundation October 2022
- EML and Student Research, KEEN Foundation July 2022
- BME Domain Flagship Course Development Workshops, OSU Spring 2022
- Guiding Students to Wellness, OSU Office of Student Life May 2022
- Best practices for recruiting and managing graduate students and postdoctoral scholars, OSU COE December 2021
- Completing a Successful Instructional Redesign Quickly and Effectively, OSU UITL August 2021
- The Problem Solving Studio, KEEN Foundation May 2021
- Redesigning Instruction: Faculty Panel, OSU UITL November 2020
- Teaching Inclusively & Equitably Online, ASEE May 2020
- Teaching Metacognition to Help Students Own and Improve Learning, ASEE February 2019
- Technology-Enhanced Active Learning, OSU ODEE October 2018
- Annual Conference on Excellence in Teaching & Learning: Creating Inclusive Connections, OSU University Center for the Advancement of Teaching (UCAT) May 2018
- Decoding the SEI: How to Favorably Impact Student Perceptions of Learning, OSU UCAT February 2018
- Developing and Inspiring Mentors and Role Models, ASEE February 2018
- Planning a Class Session, OSU UCAT January 2018
- Got Motivation? Strategies for Empowering Students in their Academics, OSU UCAT October 2017
- Getting Feedback on Your Teaching, OSU UCAT October 2017
- Classroom Assessment Techniques (CATs), OSU UCAT September 2017
- Empathy in Engineering, ASEE September 2017
- Research Mentoring, OSU CCTS August 2017
- OSU UCAT Annual Conference on Excellence in Teaching & Learning: Building a Community of Teacher-Scholars May 2017
- Mentee, OSU Faculty FIT Mentoring Program Spring 2017

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- Faculty FIT – Expert Strategies for Student Success, OSU UITL December 2016
- Course Design Institute, OSU UCAT Autumn 2016
- Helping Students Reduce Procrastination and Boost Time Management, OSU UCAT November 2016
- Teaching Extraverts/Teaching Introverts, OSU UCAT November 2016
- InterACT: Challenges in STEM University Education, OSU UCAT November 2016
- Applied Active Learning Strategies for the Classroom, OSU UCAT October 2016
- Facilitating Classroom Discussion, OSU UCAT October 2016
- OSU UCAT Annual Conference on Excellence in Teaching & Learning: Making Teaching Matter at a Research University May 2016
- Course-based Undergraduate Research Experiences: What if the treatment is a CURE?, OSU UCAT April 2016
- Developing Effective Presentation Skills, OSU UCAT March 2016
- Talking with Students about the Research Process, OSU UCAT March 2016
- Designing Assignments, Quizzes, and Tests, OSU UCAT February 2016

Mentored Students and Trainees

Postdoctoral

Current

- Hamid Hamed, PhD – Postdoctoral Researcher in BME at OSU, 2022-present

Doctoral

Current

- Megan Allyn, BS, BA – PhD Student in CBE at OSU, 2020-present
 - Co-advised by Andre Palmer, PhD, CBE
 - IMR Graduate Poster Award (2023), Recipient of Prevent Blindness Young Investigator Student Fellowship Award (\$5,000, 2021)
- Peter Jansen, BS, BA – PhD Student in BME at OSU, 2021-present
 - Co-advised by Cynthia Roberts, PhD, Ophthalmology, BME
 - Recipient of NSF GRFP (2022-2025), OSU Graduate Enrichment Fellowship (2021-2022), The National Federation of the Blind (NFB) Scholarship (2021)
- Katarina Sikiric, BS – PhD Student in BME at OSU, 2022-present
 - Co-advised by Daniel Wozniak, PhD, Microbial Infection & Immunity and Microbiology

Graduates

- Pengfei Jiang, PhD – 2018-2020, PhD in CBE Summer 2020
 - Dissertation: “Sustained Delivery of Anti-VEGF for Treating Wet Age-related Macular Degeneration”
 - Recipient of Society for Biomaterials STAR Travel Award (\$250, 2019), 1st Place OSU Ophthalmology Research Symposium (\$500, 2019), Finalist, OSU Next Generation Innovator of the Year (2019), CBE Outstanding Graduate Student Research Award (2020)
 - Currently Program Leader at PTC Therapeutics
- Nguyen “Archie” Tram, PhD – 2016-2020, PhD in BME Spring 2020
 - Dissertation: “Hydrogels with Antioxidants that Replace the Physical and Chemical Functions of the Vitreous Humor”
 - Recipient of OSU BMES Travel Award (\$1,500, 2016), ARVO Santen, Inc. Grant (\$750, 2017), Ray Travel Award (\$1,000, 2017, 2018), 3rd Place OSU Ophthalmology Research Symposium (\$100, 2019)
 - Currently Senior Data Manager at Ethicon

Masters

Graduates

- Elle Hellwarth, MS – 2020-2022, MS in BME 2022
 - Currently PhD Student in Chemical and Biological Engineering at University of Alabama
- Richard Luo, MS – 2020-2022, MS in BME 2022
 - Currently Product Engineer at Alcon

Katelyn E. Swindle-Reilly, Ph.D.

- Travis Neimeister, MS – 2018-2019, MS in CBE 2019
- Pengfei Jiang, MS, PhD – 2017-2018, MS in CBE 2018
 - Currently Program Leader at PTC Therapeutics
- Jaron Maxson, MS – 2018, MS in CBE 2018
 - Currently Project Manager at Chemical Abstract Services

Undergraduate

Current

- Vedshree Deshmukh – Undergraduate Student in BME at OSU, 2022-present
- Spencer Green – Undergraduate Student in BME, Minor in Classics at OSU, 2022-present
- Mia Jeter – Undergraduate Student in Neuroscience, Minor in American Sign Language at OSU, 2022-present
 - SEED Program

Graduates

- Tyler Adkins – NSF REU, Undergraduate in ME at University of Maryland Baltimore County, 2022
- Mallory Allen – Undergraduate Student in BME at OSU, 2016-2018
 - Undergraduate Honors Research Thesis (\$3,000, 2017-2018)
 - Currently Division Sourcing & Procurement Manager at Parker Hannifin
- Joshua Bopp – Undergraduate Student in Biology at OSU, 2021-2023
 - Currently Training as Physical Therapist
- Sophie Carus – Undergraduate Student in BME at OSU, 2016-2018
 - Undergraduate Honors Research Thesis (\$5,000, 2017-2018), 3rd place in Engineering: Medicine and Healthcare at the Denman Undergraduate Research Forum (2018)
 - Currently DO Student at University of Toledo
- Andrew Choi – Undergraduate Student in BME at OSU, 2019-2021
 - Currently PhD Student in Biomedical Engineering at Case Western
- Jeffrey Gray – Undergraduate Student in BME at OSU, 2016
 - Currently MD Student at Sidney Kimmel Medical College
- Christian Grimme – Undergraduate Student in Polymer Science and Engineering at Case Western, 2016
 - Currently PhD Student in Chemical Engineering and Materials Science at University of Minnesota
- Adam Jacobowitz – Undergraduate Student in BME at OSU, 2016
 - Currently MD Student at Virginia Tech Carilion School of Medicine
- Kane Jacobs – Undergraduate Student in CBE at OSU, 2018-2020
 - CBE Undergraduate Award for Patents and Publications (2021)
 - Currently in Rotational Field Program at DuPont
- Joo Hun Lee – Undergraduate Student in BME at OSU, 2020-2021
 - Currently PhD Student in Chemical Engineering at University of Illinois
- Emma McLaughlin – Undergraduate Student in BIOE at OSU, 2020-2022
 - Currently in Operations Leadership Development Program at Thermo Fisher Scientific
- Rayna McLean – Undergraduate Student in CBE at OSU, 2019-2021
 - Currently Process Engineer at Sherwin-Williams
- Ankur Parekh – Undergraduate Student in CBE at OSU, 2020-2022
 - CBE Outstanding Undergraduate Award for Research Excellence (2022)
 - Currently MD Student at Wright State University
- Ryan Prieto – Undergraduate Student in BME at OSU, 2017-2018
 - Currently Technical Problem Solver at Epic Systems
- Raima Puri – Undergraduate Student in BME at OSU, 2021-2023

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- SEED Program, Undergraduate Honors Research Thesis (\$3,000, 2022-2023), First Place NSF Research Experience and Mentoring Meeting Undergraduate Presentation (2023), BME Undergraduate Research Award (2023)
- Currently MS Student in BME at Duke University
- Victor Rivera-Llabres – SROP, Undergraduate in CHE at University of Puerto Rico at Mayaguez, 2018
 - Currently PhD Student in Chemical Engineering at University of Florida
- Marissa Ruzga – Undergraduate Student in BME at OSU, 2018-2019
 - Currently PhD Student in Biomedical Science and Engineering at University of Maine
- Katrina Schroeder – Undergraduate Student in BME at OSU, 2016-2018
 - Currently Senior Specialist at Merck
- Lauren Shingler – Undergraduate Student in BME at OSU, 2016-2017
 - Currently MD Student at OSU
- Priyanka Tewani – Undergraduate Student in BME at OSU, 2018-2019
 - Currently MS Student in Human Factors/Cognitive Systems Engineering at OSU
- Samantha (Thobe) Schoenherr – Undergraduate Student in CBE at OSU, 2016-2019
 - CBE Outstanding Undergraduate Award for Research Excellence (2019), Recipient of Research Scholar Award (\$1,000, 2016)
 - Currently Engineering Coordinator at Honda Motors
- Tiara Torres-Flores – NSF REU, Undergraduate in CHE at University of Puerto Rico at Mayaguez, 2019
 - Currently PhD Student in Chemical Engineering at University of Illinois
- Zihan Zhang – Undergraduate Student in CBE at OSU, 2017
 - Currently PhD Student in Nutrition Sciences at OSU

High School

Former

- Jackson Say – St. Charles Preparatory School, 2022
- Ashtha Singh – Dublin Jerome High School, 2018
 - Currently Undergraduate Student at Syracuse University

Research Staff

Current

- Sara Moradi, PhD – Senior Research Technician, 2023-

Former

- Courtney Maxwell, BS – Research Assistant, 2019-2021
 - Currently Associate Scientist Upstream, Process Development at Forge Biologics

Prior to Ohio State

- Isaiah Aguilar, MS – NSF RAHSS
 - Currently PhD Student in Chemistry at Yale University
- Brenda Marchand, MS – NSF REU, BS in BME at UTSA
 - Currently Senior Research Engineer at 3M
- David Zhang, MS – NSF REU, BS in BME at UTSA
 - Currently PhD Student in Biomedical Engineering at UTSA
- Ankit Agrawal, MD – BS in BME at Saint Louis University
 - Currently Assistant Professor, School of Medicine, Emory University
- Hannah (Kutosky) Luehmann, MS – MS in BME at Saint Louis University
 - Currently Research Assistant at Washington University School of Medicine
- Shruti Sahu, MS, MBA – MS in BME at Saint Louis University
 - Currently Digital Marketing Manager at The Home Depot
- Chinmay Paranjape, MD – NSF REU, BS in CBE at University of Pennsylvania
 - Currently Fellowship Training in Pediatric Orthopedic Surgery at University of California San Diego

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- Scott Dobson, JD – BS in BME at Washington University in St. Louis
 - Currently Patent Attorney at IBM

SERVICE, PROFESSIONAL DEVELOPMENT & OUTREACH

Professional Service Activities

Leadership

International

- Membership Committee, Society for Biomaterials 2022-present
- Communications Chair, Ocular Delivery Focus Group, Controlled Release Society 2021-2023
- Chair, Ophthalmic Biomaterials Special Interest Group (SIG), Society for Biomaterials 2021-2023
- Program Chair, Ophthalmic Biomaterials SIG, Society for Biomaterials 2019-2021
- Bylaws Committee, Society for Biomaterials 2014-2015

Grant Review

International

- Grant Reviewer, Health Research Council of New Zealand 2023
- Grant Reviewer, Ontario Research Fund - Research Excellence Program 2022
- Grant Reviewer, Canada Foundation for Innovation (CFI) Innovation Fund (IF) 2019, 2022
- Grant Reviewer, Natural Sciences and Research Council of Canada 2017-2018
- Grant Reviewer, Swiss National Science Foundation April 2017

National

- NIH SBIR Review Panel
- NSF SBIR Review Panel
- NIH Early Career Reviewer
- NIH INN Ad Hoc Reviewer March 2023
- Reviewer, NSF Graduate Research Fellowship Program 2017-18, 2021

Regional

- Reviewer, South Dakota State University Pharmacy Pilot Grant 2018

Conferences

International

- Business Pitch Competition Judge, Session Chair, Society for Biomaterials Annual Meeting April 2023
- Reviewer, Controlled Release Society Meeting Abstracts March 2023
- Session Organizer, Session Chair, BMES Annual Meeting October 2022
- Panel Organizer, Session Chair, Society for Biomaterials Annual Meeting April 2022
- Reviewer, Society for Biomaterials Meeting Abstracts 2021-22
- Reviewer, Biofabrication 2019 Meeting Abstracts 2019
- Reviewer, Rapid Resume Review Workshop, BMES Annual Meeting October 2018
- Reviewer, BMES Annual Meeting Abstracts 2017, 2021-22
- Session Chair, Biomaterial Scaffolds I, BMES Annual Meeting October 2016

Regional

- Biomaterials Day at UT Austin, Student Poster Judge 2013

Journals

- Editorial Board, Journal of Biomaterials Applications 2022-present
- Review Editor, Frontiers in Medicine – Ophthalmology 2020-present
- Reviewer, ACS Au, ACS Omega, Acta Biomaterialia, Acta Ophthalmologica, Advanced Healthcare Materials, Bioengineering & Translational Medicine, Carbohydrate Polymers, Chemical Engineering Journal, Clinical and Experimental Ophthalmology, Colloids and Surfaces B: Biointerfaces, Current Eye Research, Drug Delivery and Translational Research, Drug Discovery Today, European Journal of

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Pharmaceutics and Biopharmaceutics, International Journal of Molecular Sciences, Journal of Biomechanics, Journal of Biomedical Materials Research A, Journal of Controlled Release, Journal of Materials Chemistry B, Journal of the Mechanical Behavior of Biomedical Materials, Macromolecular Bioscience, Materials Horizons, Molecules, Nature – Communications Materials, New Journal of Chemistry, Pharmaceutics, PLOS One, Polymers, RSC Advances, Small Methods

Other Service

National

- USPAA Scholar Summit Panel, Invited Panelist 2013
- National Conference on Graduate Student Leadership 2005

Regional

- Interviewer, Georgia Tech Stamps President's Scholars Program 2021
- The Health Cell, Science Research and Development Committee 2013-2015
- Healthcare Businesswomen's Association, Women in Science Committee 2012-2013
- Georgia Tech Alumni Association Gateway Club, Treasurer, Young Alumni Representative, Student Recruitment Chair 2004-2011

University

- Association of Graduate Engineering Students, Secretary, Treasurer, WUSTL 2004-2007
- Alpha Chi Sigma Professional Chemistry Fraternity 2001-2006
- Society of Women Engineers, Georgia Institute of Technology 2000-2004

Professional Society Membership

- Association for Research in Vision and Ophthalmology (ARVO)
- American Society for Engineering Education (ASEE)
- Biomedical Engineering Society (BMES)
- Controlled Release Society (CRS)
- Sigma Xi – The Scientific Research Honor Society
- Society for Biomaterials (SFB)

University Service Activities

- Graduate Faculty Representative, Daniel Puthawala, PhD Linguistics May 2023
- Reviewer, Molecular Biophysics Training Program 2022
- Judge, Denman Undergraduate Research Forum 2016, 2021
- Graduate Faculty Representative, Woo-Ju Kim, PhD Food Science and Technology November 2021
- Graduate Faculty Representative, Qian Shi, PhD Molecular Cellular and Developmental Biology May 2020
- Graduate Faculty Representative, Katherine Swidarski, PhD Public Health November 2018
- MSTP Program Interviewer 2018
- Graduate Faculty Representative, Simon Losch, PhD Germanic Languages and Literatures October 2017
- Judge, Edward F. Hayes Graduate Research Forum March 2017
- Abstract Reviewer, Edward F. Hayes Graduate Research Forum December 2016
- Graduate Faculty Representative, D. Hudson Smith, PhD Physics November 2016

College Service Activities

- College of Engineering Women's Faculty Advisory Board May 2023-2025
- Time and Change Campaign Speaker, Development Office April 2022
- Reviewer, Discovery Scholars Fellowship 2018-19, 2021-22
- Reviewer, COE Graduate Fellowship 2018-19, 2021-22

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- Faculty Search Committee, Targeted 2018

Department Service Activities

- BME Space and Facilities Committee 2016-present
- Staff Search Committee 2022
- Fontana Labs Grand Opening Presenter April 2022
- Faculty Search Committee 2021-2022
- Judge, Ophthalmic Engineering Grand Rounds / Grad Student Presentations 2017, 2020-21
- Judge, CBE Graduate Research Symposium 2021
- BME Executive Committee 2018-2020
- BME Development and Outreach Committee 2018-2020
- BMES Resume Tailoring Event November 2018
- Poster Judge, BMEGSA EHRS March 2018
- Faculty Search Committee, Targeted 2017-2018
- Faculty Search Committee, Infectious Diseases 2016-2017
- BME Publications and Web Committee 2016-2018

Professional Development, Diversity, Equity, and Inclusion

- BME Faculty UNITE 2020-present
- Advisor, Ocular Engineering Journal Club, OSU 2017-present
- Women's Faculty Group, OSU COE 2016-present
- Inclusive Excellence Certificate, Level 2 – Ally 2023
- Social Identity 101, OSU April 2023
- Navigating the Impact of Racial Battle Fatigue: Empowering Faculty as Allies and Mentors for Students, OSU February 2023
- Microinterventions, OSU January 2023
- Inclusive Excellence Certificate, Level 1 – Partner 2022
- ETHOS Values Project, OSU COE 2021-2022
- Difficult Conversations: How to Communicate Across Difference April 2022
- We Belong Here: Healing from Racial Micro-Inequities and Trauma in the Workplace February 2022
- Inclusive Excellence in Hiring December 2021
- P&T Social Bias Workshop, OSU COE August 2021
- Women & Engineering Leadership Society Summit, Washington University in St. Louis March 2021
- Women's Leadership Development Program, ARVO 2019-2020
- Building Your Female Leadership Pool, ASEE September 2019
- REACH Suicide Prevention Gatekeeper Training December 2018
- Better Science Through Better Mentoring 2018
- Strategic Diversity Recruitment, NADOHE & HERC February 2018
- Active Bystander Training, OSU COE 2017-2018
- Research Mentoring, OSU CCTS August 2017
- ADVANCE REACH for Commercialization, OSU Spring 2017
- NAE Symposium: Preparing a Diverse STEM Workforce for Tomorrow – Academic and Industry Viewpoints May 2016
- Recognizing and Addressing Unintended Bias in Engineering Education, OSU COE DOI April 2016

Outreach

- OSU STEM Outreach, St. Andrew School 2020, 2023
- Faculty Coordinator, BME Coffee with Professors, OSU 2022-present
- Mentor, Summer Experience for Entrepreneurial Development (SEED), OSU 2021-present
- URM High School Student Shadowing March 2023

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- CBE Coffee with a Professor: Nature and Wellness, OSU October 2022
- OSUxBMES Sculpting Your Future, OSU March 2022
- Women in ChemE, OSU February 2022
- CBE Coffee with a Professor: Time Management, OSU December 2021
- CBE Coffee with a Professor: Work-Life Balance, OSU December 2020
- CBE Coffee with a Professor: Imposter Syndrome, OSU April 2019
- BMES Biotech Symposium, OSU March 2019
- STEM Commercialization, Innovation & Entrepreneurship Forum November 2018
 - <https://youtu.be/8TgcFn8ndnk>
- Advisor, Summer Research Opportunities Program (SROP), OSU Summer 2018
- Women in Engineering (WiE) Tea, OSU 2017-2019
- Women in Science Day, Young Scientist Program, WUSTL 2006-2008