

Chelsea M. Magin: Curriculum Vita

Associate Professor in Bioengineering (primary)
Associate Professor in Pediatrics (secondary)
Associate Professor in Medicine (secondary)

University of Colorado, Denver | Anschutz Medical Campus
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EDUCATION

University of Florida, Gainesville, FL	2006
<i>Bachelor of Science, Materials Science & Engineering</i>	
University of Florida, Gainesville, FL	2010
<i>Doctor of Philosophy, Biomedical Engineering</i>	
<i>Advisor: Dr. Anthony Brennan</i>	
University of Colorado, Boulder, Boulder, CO	2013
<i>NIH Postdoctoral Research Fellow, Chemical & Biological Engineering</i>	
<i>Advisor: Dr. Kristi Anseth</i>	

ACADEMIC APPOINTMENTS

University of Colorado, Denver Anschutz Medical Campus, Aurora, CO	2016-2017
<i>Adjunct Assistant Professor</i>	
Department of Bioengineering	
University of Colorado, Denver Anschutz Medical Campus, Aurora, CO	2017-2020
<i>Assistant Professor</i>	
Department of Medicine (Primary)	
Department of Bioengineering (Secondary)	
University of Colorado, Denver Anschutz Medical Campus, Aurora, CO	2020-2024
<i>Assistant Professor</i>	
Department of Bioengineering (Primary)	
Department of Pediatrics (Secondary)	
Department of Medicine (Secondary)	
University of Colorado, Denver Anschutz Medical Campus, Aurora, CO	2024-Present
<i>Associate Professor</i>	
Department of Bioengineering (Primary)	
Department of Pediatrics (Secondary)	
Department of Medicine (Secondary)	

OTHER PROFESSIONAL POSITIONS

Sharklet Technologies, Inc., Aurora, CO	2013-2017
<i>Director of Product Development</i>	2015-2017
<i>Product Development Manager</i>	2014-2015
<i>Biomedical R&D Engineer</i>	2013-2014

Promoted rapidly through a series of increasingly responsible R&D management positions based on strong operational, team building, leadership, and technical performance. Led innovation of new medical device products from initial concept to proof of concept.

- Led successful collaborations with industrial and academic partners that have resulted in 5 publications and ~\$3.5M in grant funding
- Directed development of user needs, engineering specifications, design, manufacturing and verification and validation testing for new products and processes.
- Established and maintained plans, timelines and budgets for medical device development projects
- Managed a multi-disciplinary team including contractors to achieve project milestones
- Invented the Sharklet wound dressing (+75 total patent applications)
- Established the regenerative medicine/tissue engineering division of Sharklet Technologies, Inc.
- Implemented advanced manufacturing practices including 3D printing
- Secured grant funding and led R&D efforts to perform engineering and preclinical tests on wound dressings *in vitro* and *in vivo*
- Presented 11 abstracts and chaired 6 sessions at professional conferences

Kimberly-Clark Corporation, Neenah, WI	2005-2006
<i>Skin Care & Treatments</i>	
<i>R&D Engineering Intern</i>	

Applied materials science and engineering training to R&D work for skin care products.

- Formulated a new lotion to promote skin cleanliness and health
- Designed and executed two pre-clinical studies
- Created and tested a prototype for a new disposable applicator
- Generated data to support the filing of 3 patent applications

HONORS, SPECIAL RECOGNITIONS, AND AWARDS

▪ University of Florida Alumni Fellowship	2006-2010
▪ Benton Engineering Council Leadership Award	2008
▪ Best Poster International Congress on Marine Corrosion and Fouling	2008
▪ Clare Boothe Luce Graduate Fellowship	2009
▪ Phyllis M. Meek Spirit of Susan B. Anthony Award	2010
▪ Attributes of a Gator Engineer Recognition Award for Leadership	2010
▪ NIH Ruth L. Kirschstein NRSA F32 Postdoctoral Fellowship	2011-2013
▪ Biotechnology and Bioengineering Top 50 Reviewer	2012
▪ NSF CAREER Award	2019
▪ Colorado Bioscience Association Educator of the Year	2019
▪ American Thoracic Society Recognition of Early Academic Achievement Award	2020
▪ 40 Gators Under 40 Award	2021
▪ Pandemic Research and Creative Activities Special Recognition	2021
▪ CMBE Young Innovator Award	2022

- BMES-CMBE Rising Star Junior Faculty Award 2023
- NY and May Chang Research Excellence Award 2024
- CU Denver Excellence in Research and Creative Works Award 2024

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

- Society of Women Engineers (SWE) 2002-2010
- Tau Beta Pi Engineering Honor Society 2003-2010
- Society for Biomaterials (SFB) 2004-Present
- American Chemical Society (ACS) 2012-Present
- Gates Center for Regenerative Medicine & Stem Cell Biology 2013-Present
- Biomedical Engineering Society (BMES) 2014-Present
- American Thoracic Society (ATS) 2017-Present
- American Heart Association (AHA) 2019-Present
- Ludeman Family Center for Women’s Health Research 2019-Present
- University of Colorado Cancer Center (affiliate member) 2023-Present

SERVICE

Institutional Service University of Colorado, Denver | Anschutz Medical Campus

Department of Bioengineering

- Industry Member, ABET Constituency Committee 2016-2017
- Faculty Advisor, Society for Biomaterials Student Chapter 2020-Present
- Faculty Member, ABET Constituency Committee 2020-2024
- Member, Bioengineering Undergraduate Affairs Committee 2020-2024
- Member, Bioengineering Chair Search Committee 2022
- Co-Chair, Bioengineering Seminar Series 2023
- Member, Bioengineering Strategic Planning Committee 2023-Present
- Chair, Bioengineering Visibility and Awards Committee 2024-Present

Department of Medicine, Division of Pulmonary Science and Critical Care Medicine

- Member, Career Development Committee 2017-2018
- Member, Enhancing Research Collaborations Committee 2018
- Member, COVID-19 Return to Work Task Force – PPE and Decontamination 2020

External Service

Colorado Bioscience Institute

- Research Experience for Teachers Mentor 2015
- Board Member 2022-Present
- Board Secretary 2023-2024
- Board Vice Chair 2024-Present

Couragion

- Virtual mentor and role model 2015-Present
- Biotechnology curriculum consultant 2019-Present

Denver Metro Chamber Leadership Foundation

- Alumni Advisory Council Member 2016-2017

BioInterface Workshop and Symposium

▪ Programming Committee Member	2016-2018
Vermont Stem Cells, Cell Therapies, and Bioengineering in Lung Biology and Lung Diseases Conference	
▪ Junior Programming Committee Chair	2018-2019
▪ Workshop Organizer and Chair, Professional Skills Course: Introduction to Technology Commercialization and Business Communication	2019
▪ Organizer and Chair, Elevator Pitch Competition	2019
▪ Executive Programming Committee Member	2020-2021
▪ Conference Vice-Chair	2022-2023
American Thoracic Society	
▪ Programming Committee, Respiratory Cell, and Molecular Biology	2018-2020
▪ Instructor, Sunrise Seminar for Continuing Medical Education: Engineering 3D Models of Human Pulmonary Disease	2019
▪ Innovation and Entrepreneurial Working Group	2019-Present
▪ Workshop Co-Organizer	2022
▪ <i>Assessing challenges and opportunities for biomarker, device, and pre-clinical drug development/ commercialization in the pulmonary arena</i>	
University of Florida, Department of Biomedical Engineering	
▪ Alumni Advisory Board Member	2019-2023
Colorado Clinical and Translational Sciences Institute	
▪ Research Studio Expert Panelist	2021
Society for Biomaterials	
▪ Secretary/Treasurer, Engineering Cells and their Microenvironments	2021-2023
▪ Vice Chair, Engineering Cells and their Microenvironments	2023-2025
▪ Co-Chair, SFB Symposia (Western Location)	2023-2024
▪ Member, Bylaws Committee	2024-Present

PEER REVIEW AND REFEREE WORK

Editorial Board Member

American Journal of Physiology-Lung Cellular and Molecular Physiology	2021-Present
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Associate Editor

Frontiers of Physiology	2021-2023
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- Special Issue: Unraveling the Physiology of Cells and Extracellular Matrix: Techniques for Biochemical and Biophysical Characterization

Journal Article Reviewer

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|--------------------------------------|--|
| ▪ ACS Applied Materials & Interfaces | ▪ Journal of Applied Biomaterials & Functional Materials |
| ▪ Acta Biomaterialia | ▪ Journal of Applied Polymer Science |
| ▪ Advanced Materials Interfaces | ▪ Journal of Biomedical Materials Research, Part A |
| ▪ Biofabrication | ▪ Journal of Materials Chemistry, Part B |
| ▪ Biofouling | ▪ Journal of Visualized Experiments |
| ▪ Biomacromolecules | ▪ Langmuir |
| ▪ Biomedical Materials | |

- Biomaterials Science
- Biotechnology and Bioengineering
- European Respiratory Journal
- European Respiratory Society Educational Publications
- Materials Science & Engineering C
- Materials Today Bio
- Med, by Cell Press
- Multifunctional Materials
- Stem Cells and Development

Book Proposal Reviewer

- CRC Press
- Taylor and Francis

Grant Reviewer

National Institutes of Health

- Special Emphasis Panel ZRG1 MOSS-T(12) (ad hoc) 2014
- Biomaterials & Biointerfaces Study Section (ad hoc) 2021
- Biomaterials, Delivery, and Nanotechnology Review Panel BST-10 (ad hoc) 2022
- Bioengineering, Biodata, and Biomodelling Technologies (BBBT-M) (co-Chair) 2023

Swiss 3R Competence Centre

- Swiss 3RCC Project Grants (ad hoc) 2019

Department of Defense Congressionally Directed Medical Research Programs

- Peer-Review Medical Research Program
 - Pre-diabetes-3 (PRE-DIA-1) 2020
 - Preapplication – Respiratory Health-1 (PRE-HR-1) 2020

INVENTIONS, INTELLECTUAL PROPERTY, AND PATENTS

Patents Granted

1. “Formulation and Products for Promoting Skin Cleanliness and Health.” Wenzel, Scott W., Koenig, David William, Hoffman, Douglas R., Krautkramer, Candace Dylan, Thomas, Brian, Mocadlo, Cheryl, **Magin, Chelsea**. Australian Patent AU2008337182B2. December 5, 2013.
2. “Ventilator-endotracheal tube-lung benchtop model.” **Chelsea M. Magin**, Shrvanathi T Reddy, Rhea Marie May, Michael Ryan Mettetal, MiKayla Maye Henry. US Patent Number 9,903,792. February 27, 2018.
3. “Micropatterned Intraocular Implant.” Cuevas, Kevin H., Reddy, Shrvanathi T., **Magin, Chelsea M.**, Mettetal, M. Ryan, Brennan, Anthony B., May, Rhea M., Mann, Ethan E. US Patent Number 9,943,402. April 17, 2018.
4. “Bilayered devices for enhanced healing.” **Magin, Chelsea M.**, Brennan, Anthony B., Willenberg, Bradley J., Schultz, Gregory S. and Neale, Dylan B. European Patent EP3285783B1; September 16, 2020. Chinese Patent CN107847633B; June 29, 2021.
5. “Patterns for flow control and bioadhesion control.” **Chelsea M. Magin**, Shrvanathi T Reddy, Anthony B Brennan, Rhea Marie May, Ethan Eugene Mann, Michael Ryan Mettetal. US Patent Number 11,077,270. August 3, 2021.

Patent Applications

1. “Method of Making, Using, and Applying a Composition to an Exposed Surface.” Buhrow, Chantel Spring, Minerath, Joseph Bernard III, **Magin, Chelsea M.** US20070131342. Filed: December 2005.
2. “Disposable Applicator.” Buhrow, Chantel Spring, Minerath, Joseph Bernard III, **Magin, Chelsea M.** US US20070130706. Filed: June 2006.
3. “Surfaces for Controlled Bioadhesion, Methods of Manufacture Thereof and Articles Comprising the Same.” **Magin, Chelsea**, Brennan, Anthony B. PCT/US10/059246. Filed: December 2010.

4. “Surface topographies for non-toxic bioadhesion control.” Leah Tonkin, Anthony B Brennan, Shravanthi T Reddy, **Chelsea M. Magin**, Ethan Mann, Mark Spiecker, Bryce Stevenson. PCT/US16/056563. Filed: June 2015.
5. “Textured articles for enhanced cell formation and methods making thereof.” **Chelsea M. Magin** and Anthony B. Brennan. PCT/US16/044750. Filed: January 2018. 9 International Patents Pending.
6. “Vascular grafts, method of manufacturing thereof and articles comprising the same.” **Magin, Chelsea M.** and Brennan, Anthony B. PCT/IB17/056967. Filed: November 2017. 5 International Patents Pending.
7. “3D in vitro models of lung tissue.” **Magin, Chelsea M.**, D’Ovidio, Tyler J., and Darling, Nicole J. PCT/US2019/012722. Filed: January 2019.
8. “Hybrid-hydrogels comprising decellularized extracellular matrix.” Petrou, Cassandra L., Hewawasam, Rukshika S., and **Magin, Chelsea M.** PCT/US2021/025539. Filed: April 2020.

INVITED EXTRAMURAL LECTURES AND PRESENTATIONS

Local

1. **Chelsea M. Magin.** “Bio-inspired dynamic materials for fundamental research and translational lung regeneration strategies.” Invited Speaker. Lung Fibrosis and Regeneration Science Day. University of Colorado, Aurora, CO, July 2017.
2. **Chelsea M. Magin.** “Bio-inspired dynamic materials for fundamental research and translational lung regeneration strategies.” Invited Speaker. Research, Aims, and Works in Progress. University of Colorado, Aurora, CO, August 2017.
3. **Chelsea M. Magin.** “Bio-inspired 3D cell culture platforms for translational pulmonary engineering.” Invited Speaker. Translational Cardiovascular Biology Conference. Aurora, CO, January 2018.
4. **Chelsea M. Magin.** “Tissue-Informed Engineering Strategies for Modeling Pulmonary Diseases in vitro.” Invited Seminar. Gates Summer Internship Program Seminar Series. University of Colorado, Anschutz Medical Campus. Aurora, CO, June 2019.
5. **Chelsea M. Magin,** “NSF CAREER Award Grant Planning.” Office of Research Development and Education Seminar. University of Colorado, Denver | Anschutz, Denver, CO, February 2021.
6. **Chelsea M. Magin,** “Engineering 3D Models of Chronic Pulmonary Disease.” Department of Anesthesiology Seminar. University of Colorado, Anschutz Medical Campus. Aurora, CO, March 2021.
7. **Chelsea M. Magin,** “Engineering 3D Lung Models to Enhance Early-Stage Drug Discovery and Validation.” College of Engineering, Design, and Computing Seminar Series, University of Colorado, Denver, CO, March 2023.

Regional

8. **Chelsea M. Magin.** “Development, Evaluation and Commercialization of a Bilayered, Micropatterned Dressing for Full-Thickness Wound Healing.” Invited Seminar Speaker. Department of Chemistry, Metropolitan State University of Denver, Denver, CO, November 2016.
9. **Chelsea M. Magin.** “Bio-inspired dynamic materials for fundamental research and translational lung regeneration strategies.” Invited Speaker. Pulmonary Sciences and Critical Care Medicine Faculty Retreat. Beaver Creek, CO, April 2017.
10. **Chelsea M. Magin.** “My Random Walk to Leadership.” Invited Speaker. Pulmonary Sciences and Critical Care Medicine Fellowship Retreat. Breckenridge, CO, September 2017.
11. Duncan Davis-Hall, **Chelsea M. Magin.** “Bio-inspired 3D microenvironments for improved patient-specific keratinocyte differentiation.” Invited Speaker. Skin Disease Research Center Retreat. Golden, CO, September 2017.
12. **Chelsea M. Magin.** “Tissue-Informed Dynamic Biomaterials for Modeling Pulmonary Disease.” Invited Speaker. Pulmonary Research in Progress. National Jewish Health, Denver, CO, March 2018.

13. **Chelsea M. Magin.** “Development and Translation of Sharklet Micropatterns for Regulation of Biological Adhesion.” Invited Speaker. Lunch and Learn. Sharklet Technologies, Inc. Aurora, CO, June 2018.
14. Duncan Davis-Hall, **Chelsea M. Magin.** “Engineering 3D Models of Pulmonary Vasculature.” Invited Speaker. Pulmonary Research in Progress. National Jewish Health, Denver, CO, February 2019.
15. **Chelsea M. Magin.** “Engineering Biomaterial-Based Models of Chronic Pulmonary Diseases.” Invited Speaker. Rocky Mountain Materials Research Society. Colorado School of Mines, Golden, CO, November 2019.
16. Duncan Davis-Hall, Emily Thomas, Brisa Peña Castellanos, **Chelsea M. Magin.** “Engineering 3D-Printed, Phototunable Models of Pulmonary Arterial Adventitia.” Invited Seminar Speaker. Quantitative Biosciences and Engineering Program, Colorado School of Mines, November 2021.
17. Mikala Mueller, Duncan Davis-Hall, Blake Neiderlander, Lori Walker, **Chelsea M. Magin.** “Investigating sex- and age-related differences in fibroblast activation within engineered models of pulmonary artery adventitia.” Invited Seminar Speaker. School of Biomedical Engineering, Colorado State University, Ft. Collins, CO, October 24, 2022.
18. **Chelsea M. Magin.** “Healthy Systems: How they Work, Bend, and Break.” Invited Panelist. IQ Biology Symposium, University of Colorado, Boulder, Boulder, CO, August 2024.
19. **Chelsea M. Magin.** “Bioengineering Applications for Pulmonary Sciences.” Invited Speaker. Division of Pulmonary Sciences and Critical Care Medicine Research Retreat, University of Colorado, Anschutz Medical Campus, Aurora, CO, September 2024.

National

20. **Chelsea M. Magin.** “Development, Evaluation and Commercialization of a Bilayered, Micropatterned Dressing for Full-Thickness Wound Healing.” Invited Seminar Speaker. Center for Bioengineering, Northern Arizona University, Flagstaff, AZ, September 2016.
21. Tyler J. D’Ovidio, Nicole J. Darling, **Chelsea M. Magin.** “Hydrolytically Stable, Spatiotemporally Addressable Hydrogel Biomaterials for Long-Term Cell Culture Applications.” Invited Talk. BioInterface Workshop and Symposium, Boulder, CO, October 2018.
22. Nicole J. Darling Tyler J. D’Ovidio, Michael L. Floren, Kurt R. Stenmark, **Chelsea M. Magin.** “Lung Mechanobiology: Matrix Stiffness Induces Pulmonary Adventitial Fibroblast Activation and Pulmonary Vascular Fibrosis.” Invited Talk. American Heart Association Scientific Sessions, Chicago, IL, November 2018.
23. **Chelsea M. Magin.** “Biomaterials Strategies for Modeling Human Pulmonary Diseases.” Invited Talk. Biomaterials Day at the University of Florida, Gainesville, FL, March 2019.
24. **Chelsea M. Magin.** “Engineering 3D Models of Human Pulmonary Disease.” Sunrise Seminar. American Thoracic Society International Conference, Dallas, TX, May 2019.
25. Duncan Davis-Hall, Emily Thomas, **Chelsea M. Magin.** “Tissue-Informed Strategies for Modeling Human Pulmonary Hypertension.” Invited Talk. American Heart Association Scientific Sessions, Philadelphia, PA, November 2019.
26. **Chelsea M. Magin.** “Biomaterials for Studying Lung Disease and Regeneration.” Society for Biomaterials, Webinar, May 2020.
27. **Chelsea M. Magin.** “Engineering hybrid-hydrogels to model chronic pulmonary diseases *in vitro*.” Invited Feature Presentation. Vermont Stem Cells, Cell Therapies, and Bioengineering in Lung Biology and Lung Diseases Conference, Burlington, VT, July 2021.
28. **Chelsea M. Magin.** “Bioengineering 3D Models of Lung Disease and Regeneration.” Invited Seminar Speaker. Program in Developmental Biology, Department of Cell and Developmental Biology, Vanderbilt University, October 2021.

29. Thomas Caracena, Rachel Blomberg, Alicia Tanneberger, Predrag Serbedzija, **Chelsea M. Magin**. “Engineering Tissue-Informed Cell Culture Platforms for Pulmonary Regenerative Medicine.” Materials Research Society, December 2021.
30. **Chelsea M. Magin**. “Engineering Dynamic 3D Models of Pulmonary Fibrosis.” Invited Seminar Speaker. Department of Anatomy and Cell Biology Seminar Series, University of Iowa, September 2022.
31. Brisa Peña, Nasim Farahzad, Mosrafa Abdel-Hafiz, Maydha Kumar, Efrem Montelongo, Matthew R. G. Taylor, **Chelsea M. Magin**, Luisa Mestroni, Timothy Mckinsey. “Understanding Mechanical Stresses in Women and Men: in vitro Modeling of Cardiac Biomechanics in Health and Disease.” Ludeman 3rd Biennial National Conference entitled Sex Differences Across the Lifespan: A Focus on Cardio-Metabolism. Colorado Spring, Colorado, October 2022.
32. Saleh, Kamiel S., Hewawasam, Rukshika, Šerbedžija, Predrag, Blomberg, Rachel, Noreldeen, Saif E., Edelman, Benjamin, Smith, Bradford J., Riches, David W.H., and **Chelsea M. Magin**. “Engineering hybrid-hydrogels comprised of healthy or diseased decellularized extracellular matrix to study pulmonary fibrosis.” Cellular and Molecular Bioengineering Young Innovator Award Invited Speaker. Biomedical Engineering Society Annual Meeting, San Antonio, TX, October 2022.
33. **Chelsea M. Magin**. “Engineering Dynamic 3D Models of Pulmonary Fibrosis Using Hybrid-Hydrogel Biomaterials.” NIH NHLBI Pulmonary Fibrosis Stakeholder Summit. Invited Speaker. Virtual, November 2022.
34. Caracena, Thomas, Blomberg, Rachel, Hewawasam, Rukshika, Riches, David W.H., and **Magin, Chelsea M.** “Multicellular 3D lung models reveal alveolar epithelial cells and microenvironmental stiffness synergistically drive fibroblast activation *in vitro*.” Rising Star Award Invited Speaker. Cellular and Molecular Bioengineering Conference. Indian Wells, CA, January 2023.
35. **Chelsea M. Magin**. “Engineering 3D Lung Models to Enhance Early-Stage Drug Discovery and Validation.” AbbVie. Invited Speaker/Key Opinion Leader. Virtual, April 2023.
36. **Chelsea M. Magin**. “Engineering 3D Lung Models for Drug Discovery & Validation.” ILD Summit. Invited Speaker. Boston, MA, June 2023.
37. Rachel Blomberg, Kayla Sompel, Alex Smith, Brisa Peña, Jennifer Driscoll, Patrick Hume, Daniel Merrick, Meredith Tennis, and **Chelsea M. Magin**. “Tissue-engineered models of lung cancer pre-malignancy.” Biomedical Engineering Seminar Series Speaker. Oregon Health Sciences University, Portland, OR, October 2023.
38. **Chelsea M. Magin**. “Starting off right: tips and tricks for your first faculty position.” Invited Panelist. Biomedical Engineering Society Annual Meeting, Seattle, WA, October 2023.
39. **Chelsea M. Magin**. “Engineering 3D Models of Pulmonary Fibrosis to Enhance Early-Stage Drug Discovery and Validation.” Featured Speaker. Kaganov Symposium at Duke University. Durham, NC, November 2023.
40. **Chelsea M. Magin**. “Engineering 3D Biomaterial Microenvironments to Model Pulmonary Fibrosis.” Frank J. Kollarits Seminar Series Speaker. University of Toledo, Toledo, OH, February 2024.
41. **Chelsea M. Magin**. “Microenvironmental Mechanics and Alveolar Epithelial Cells Synergistically Drive Fibroblast Activation in 3D Lung Models.” Invited Symposium Presentation. American Thoracic Society International Conference, San Diego, CA, May 2024.
42. **Chelsea M. Magin**. Keynote Speaker. Pruitt Research Day, J. Crayton Pruitt Family Department of Biomedical Engineering, University of Florida, Gainesville, FL, September 2024.
43. **Chelsea M. Magin**. “Engineered Models of Pulmonary Vascular Tissue Reveal Sex-Specific Differences in Fibroblast Activation Across the Lifespan.” Invited Speaker. National Conference on Women's Health and Sex Differences Research, Colorado Springs, CO, October 2024.

International

44. Nicole J. Darling, Tyler J. D'Ovidio, **Chelsea M. Magin**. "Engineering Strategies for building pulmonary extracellular matrix mimics *in vitro*." Invited Talk. XXIVth Nordic Molecular Glycobiology Meeting, Lund, Sweden, December 2018.
45. **Chelsea M. Magin**. "Bioengineering Models of Human Lung Diseases." Invited Talk. European Respiratory Society International Congress, Madrid, Spain, September 2019.
46. Rachel Blomberg, Mikala C. Mueller, Alicia E. Tanneberger, **Chelsea M. Magin**. "Engineering 3D Lung Tissue Models to Improve Drug Discovery and Validation." Invited Talk. The 12th World Biomaterials Congress, Daegu, Korea, May 2024.

INVITED EXTRAMURAL SESSIONS CHAIRED OR MODERATED

National

1. **Chelsea M. Magin** and Anthony B. Brennan, "Cellular Responses to Biophysical Cues." Session Co-Chair and Co-Moderator. Society for Biomaterials Annual Meeting, Orlando, FL, April 2011.
2. **Chelsea M. Kirschner** and Elizabeth Lipke, "Engineering Instructive Cues Biomaterials." Session Co-Chair and Co-Moderator. Society for Biomaterials Annual Meeting, Boston, MA, April 2013.
3. **Chelsea M. Kirschner** and Daniel L. Alge, "Bio-inspired Cellular Microenvironments." Session Co-Chair and Co-Moderator. Society for Biomaterials Annual Meeting, Denver, CO, April 2014.
4. **Chelsea M. Magin** and Yonghyun Kim, "Emerging Technologies in Stem Cells & Regenerative Medicine." Session Co-Chair and Co-Moderator. American Chemical Society Annual Meeting, Denver, CO March 2015.
5. **Chelsea M. Magin** and Anthony B. Brennan, "Bio-inspired Cellular Microenvironments." Session Co-Chair and Co-Moderator. Society for Biomaterials Annual Meeting, Charlotte, NC, April 2015.
6. **Chelsea M. Magin** and Ethan E. Mann, "Chemical and Physical Strategies to Regulate Biological Adhesion." Planning Committee Member, Session Co-Chair and Co-Moderator. BioInterface Workshop & Symposium, Scottsdale, AZ, September 2015.
7. April M. Kloxin, Andrew Dove, and **Chelsea M. Magin**, "Dynamic and Tunable Biomaterials Symposium." Session Co-Chair. American Chemical Society Annual Meeting, San Diego, CA, March 2016.
8. **Chelsea M. Magin** and Roy Biran, "Engineering Interfaces for Regenerative Medicine." Planning Committee Member, Session Co-Chair and Co-Moderator. BioInterface Workshop & Symposium, Minneapolis, MN, October 2016.
9. Darcy E. Wagner, David K. Mills and **Chelsea M. Magin**. "Bioengineering 3D Tissues for In Vitro Disease Modeling and Pulmonary Applications." Session Co-Chair and Co-Moderator. Society for Biomaterials Annual Meeting, Seattle, WA, April 2019.
10. Darcy E. Wagner, Daniel J. Weiss and **Chelsea M. Magin**. "Rapid Abstract Poster Discussion Session: Engineered and Remodeled Matrix Compartments." Session Co-Moderator, American Thoracic Society International Conference, Dallas, TX, May 2019.
11. Laertis Oikonomou and **Chelsea M. Magin**. "Bringing cell and tissue-derived products to market: regulation and commercialization of regenerative medicine products." Session Co-Moderator, Vermont Stem Cells, Cell Therapies, and Bioengineering in Lung Biology and Lung Diseases Conference, Burlington, VT, July 2019.
12. **Chelsea M. Magin** (Co-Instructor). Respiratory Cell and Molecular Biology Innovation and Entrepreneurial Working Group. "Jump Start: A beginner's guide to drug and company development in an academic setting." Post-Graduate Course, American Thoracic Society International Conference, Philadelphia, PA, May 2020 (Canceled due to COVID-19 Pandemic).

13. Neeraj Vig and **Chelsea M. Magin**. “Therapeutics, Drug Delivery and Tissue Engineering.” Session Co-Moderator, American Thoracic Society International Conference, Philadelphia, PA, May 2020 (Canceled due to COVID-19 Pandemic).
14. Darcy E. Wagner and **Chelsea M. Magin**. “Biomaterials for Pulmonary Applications.” Session Co-Chair and Co-Moderator. Society for Biomaterials Annual Meeting, Virtual, April 2020.
15. Rachel Blomberg and **Chelsea M. Magin**. “Engineering the Lung Microenvironment.” Special Symposium Co-Chair and Co-Moderator. Society for Biomaterials Annual Meeting, Baltimore, MD, April 2022.
16. Nureddin Ashammakhi and **Chelsea M. Magin**. “Translating Engineered MultiCellular Living Systems and Cellular Microenvironments.” Panel Discussion Co-Chair and Co-Moderator. Society for Biomaterials Annual Meeting, Baltimore, MD, April 2022.
17. Claudia Loebel, Christine Knabe-Ducheyne, and **Chelsea M. Magin**. “Biomaterials for the Lung.” Special Symposium Co-Chair and Co-Moderator. Society for Biomaterials Annual Meeting, San Diego, CA April 2023.
18. Jehan Alladina and **Chelsea M. Magin**. “Regenerative Capacity and Scar Removal in the Lungs and Regenerative Capacity and Scar Removal in the Lung.” Co-Moderator. Thomas L. Petty Aspen Lung Conference, Aspen, CO, June 2024.
19. **Chelsea M. Magin**. “Engineering Innovations for Women’s Health Discovery.” Invited Biomaterials Strategic Planning Table Leader and Future Steps Panelist. ElevateHER Workshop, College Station, TX, August 2024.

International

20. Darcy E. Wagner and **Chelsea M. Magin**. “Engineering Biomaterials for Pulmonary Research.” Special Symposium, Session Co-Chair, World Biomaterials Congress, Glasgow, Scotland, December 2020.
21. Riccardo Gottardi and **Chelsea M. Magin**. “Harnessing Biomaterials Strategies to Model Lung Disease, Repair Damaged Tissue, and Deliver Drugs for Treatment.” Special Symposium, Session Co-Chair, World Biomaterials Congress, Daegu, Korea, May 2024.

TEACHING RECORD

University of Florida	2007-2010
<i>Teaching Assistant, Department of Biomedical Engineering</i>	
Problem Based Learning (BME 6707, Graduate)	2007
Clinical Preceptorship (BME 6010, Graduate)	2009
<i>Guest Lecturer, Department of Materials Science and Engineering</i>	
Physical Properties of Polymers and Plastics Design (EMA 4760, Undergraduate)	2010
<ul style="list-style-type: none"> ▪ Designed and taught new laboratory module on hydrogel materials 	
<i>Co-Teacher, Center for Precollegiate Education and Training</i>	
Biomaterials, Student Science Training Program (IDH 2931, High School)	2010
<ul style="list-style-type: none"> ▪ Developed course, assessments, and syllabus 	
University of Colorado, Boulder	2012
<i>Guest Lecturer, Department of Chemical and Biological Engineering</i>	
Biomaterials (CHEN 4805, Undergraduate)	
University of Colorado, Denver Anschutz	2014-Present
<i>Instructor, Graduate and Professional Skills Orientation</i>	<i>Fall 2014, 2015, 2016, 2017, 2018</i>

Professional Record Keeping

- Designed course and assessments
- Yearly evaluations show significant improvement in skills related to professional record keeping

Adjunct Assistant Professor, Department of Bioengineering

Engineering General Chemistry (ENGR 1130, Undergraduate)

Spring 2017

- Developed the course, assessments, and syllabus for the College of Engineering
- National recognition for the open innovation challenge published in the [Huffington Post](#) and the University of Colorado, Denver College of Engineering, Design and Computing's Annual Magazine

Guest Lecturer, Department of Bioengineering

Stem Cells and Regenerative Medicine (BIOE 4420/5420, Undergraduate/Graduate)

Fall 2017, 2018, 2019

- Presented the lecture titled, "Engineering the environment"
- Wrote and graded a midterm exam question related to the topic

Client, Senior Design, Department of Bioengineering

BioDesign I and II (BIOE 4035 and 4045, Undergraduate)

Fall 2017, Spring 2018

- Mentored two design teams creating novel bioprinting techniques (with Dr. Lammers) and bioreactor designs with (with Dr. Smith)

Assistant Professor, Department of Bioengineering

Clinical, Translational Pulmonary Engineering (BIOE4420/5420, Undergraduate/Graduate)

Fall 2018

- Developed the course, assessments, and syllabus
- Incorporated clinical guest lectures and cutting-edge research in pulmonary sciences into this special-topics course for senior level undergraduate and graduate students

Regulatory Affairs (BIOE4420/5420, Undergraduate/Graduate)

Fall 2019-2022

- Updated the course, assessments, and syllabus with new learning activities
- Incorporated topics such as quality management systems, design controls and design of experiments from my experience in the medical device industry into this special-topics course for senior level undergraduate and graduate students

Entrepreneurial Independent Study (BIOE4840, Undergraduate), Co-Instructor

Spring 2020

- Implemented a unique curriculum based on my experience working at a start-up to teach students how to develop a marketable device, write a business plan and pitch ideas to investors.

Research Methods (BIOE5040, Graduate)

Spring 2023-2024

- Updated the course, assessments, and syllabus with new learning activities
- Integrated a librarian into the course
- Implemented an updated curriculum that supports PhD and MS students, including those interested in careers in industry

Visiting Professorships

Lund University, Lund Sweden

Fall 2018

Department of Experimental Medical Sciences

- Lectured on engineering strategies for building pulmonary extracellular matrix mimics *in vitro*
- Presented a career development talk for the Wallenberg Center for Molecular Medicine
- Served as the external opponent on a PhD committee

Courses Developed or Significantly Modified

University of Florida

- Biomaterials, Student Science Training Program (IDH 2931, High School)

University of Colorado, Denver | Anschutz

- Professional Record Keeping (GPS, Undergraduate)
- Engineering General Chemistry (ENGR 1130, Undergraduate)
- Clinical, Translational Pulmonary Engineering (BIOE4420/5420, Undergraduate/Graduate)
- Regulatory Affairs (BIOE4420/5420, Undergraduate/Graduate)
- Research Methods (BIOE5040, Graduate)

MENTORING

Faculty:

Brecca Gaffney, PhD

2022-Present

- Mentored Position: Assistant Professor, Mechanical Engineering

Brisa Peña-Castellanos, PhD

2021-Present

- Mentored Position: Research Assistant Professor
 - Ludeman Center for Women's Health Research Seed Grant Awardee
 - American Heart Association Career Development Awardee

Professional Research Assistants:

Tyler D'Ovidio, BS

2017-2018

- Mentored Position: Professional Research Assistant
 - First author on one peer-reviewed publication
 - Co-author on three peer-reviewed publications
 - First author and presenter on two competitive abstracts
 - Co-author on seven competitive abstracts
- Current Position: Medical Student, Icahn School of Medicine at Mount Sinai

Predrag Serbedzija, PhD

2020-2022

- Mentored Position: Senior Professional Research Assistant
 - HumaScholar Grant Recipient, Humabiologics, 2021
 - Co-author on two competitive abstracts
 - Co-author on two peer-reviewed publications
- Current Position: Field Application Scientist, ChemoMetec

Rachel Blomberg, PhD

2022-Present

- Mentored Position: Senior Professional Research Assistant
 - First or Co-first author on two peer-reviewed publications and one book chapter
 - Co-author on one peer-reviewed publication
 - Best Oral Presentation Award, Biomaterials Day 2023

PhD Students:

Duncan Davis-Hall, MS

2018-2023

- Mentored Position: PhD Student, Bioengineering

- NIH NHLBI F31 Recipient
- T32 trainee (Cardiovascular Biomechanics and Imaging, PI: Shandas)
- First author on two peer-reviewed publications (one featured on journal cover)
- Co-author on two peer-reviewed publications
- First author and speaker of competitive abstract for World Biomaterials Congress 2020 and five additional conference abstract presentations
- BIOE Student Senate President
- CU Anschutz Orchestra President
- College of Engineering, Design, and Computing Outstanding Graduate Student Award
- Anschutz Spirit Award
- Current Position: Teaching Assistant Professor, Colorado School of Mines

Donald Campbell, MS *2019-2021*

- Mentored Position: PhD Student, Bioengineering
 - President and Co-Founder, Society for Biomaterials Student Chapter, 2020
 - First author on one peer-reviewed publication
- Current Position: Lead Research Scientist, Terumo BCT

Alicia Tanneberger, MS *2021-Present*

- Mentored Position: PhD Student, Bioengineering
 - T32 trainee (Cardiovascular Biomechanics and Imaging, PI: Shandas)
 - Honorable Mention, NSF GRFP (2022)
 - First author on one book chapter
 - First author and 2nd Place Oral Presentation Award Society for Biomaterials 2023
 - United Therapeutics Travel Award Winner Society for Biomaterials 2023

Mikala Mueller, MS *2022-Present*

- Mentored Position: PhD Student, Bioengineering
 - First author and oral presentation, Society for Biomaterials 2023
 - First author on one submitted publication

Anton Kary *2023-Present*

- Mentored Position: PhD Student, Bioengineering
 - Secretary/Treasurer, Society for Biomaterials 2023

Haley Bergman *2023-Present*

- Mentored Position: PhD Student, Bioengineering
 - TOTTs T32 Trainee

MS Students:

Duncan Davis-Hall, BS *2017-2018*

- Mentored Position: MS Student, Bioengineering
 - First author on one peer-reviewed publication featured on journal cover
 - First author and presenter on two competitive conference abstract presentations
 - Outstanding Graduate Student in Bioengineering Award
- Current Position: PhD Student, Bioengineering, Magin Lab

Vy Nguyen, BS *2017-2018*

- Mentored Position: MS Student, Bioengineering
 - Second author on one peer-reviewed publication

- Co-author on five competitive conference abstract presentations
- Current Position: Manager, Charles Schwab

Cassandra Petrou, BS 2018-2020

- Mentored Position: MS Student, Bioengineering
 - First author on one peer-reviewed publication featured on journal cover
 - First author and presenter on one competitive conference abstract presentation
 - Co-inventor on one provisional patent application
- Current Position: Research Associate III, LightDeck Diganostics

Thomas Caracena, BS 2020-2022

- Mentored Position: MS Student, Bioengineering
 - First author and poster presenter competitive abstract, Society for Biomaterials 2021
 - First author and oral presentation, Society for Biomaterials 2022
 - President, Society for Biomaterials, CU Denver | Anschutz
 - Co-first author one peer-reviewed manuscript
- Current Position: Process Engineer, LightDeck Diganostics

Mikala Mueller 2020-2022

- Mentored Position: MS Student, Bioengineering
 - First author and oral presentation, Society for Biomaterials 2022
- Current Position: PhD Student, Bioengineering, Magin Lab

Kamiel Saleh 2020-2022

- Mentored Position: MS Student, Bioengineering
 - Co-first author one peer-reviewed manuscript
- Current Position: Systems Engineer II, Terumo BCT

Postdoctoral Fellows:

Kolene Bailey, MD 2017-2019

- Mentored Position: T32 trainee (Multidisciplinary Research Training in Respiratory Disease, PI: Schwartz)
 - Awarded Mentored CCTSI CO-Pilot Grant (\$30,000)
 - First author on two peer-reviewed publications
 - First author, presenter and travel award winner, American Thoracic Society 2018
 - First author and speaker competitive abstract, Aspen Lung Conference 2018
- Current Position: Attending Physician, Critical Care, Pulmonary and Sleep Associates

Nicole Darling, PhD 2018-2019

- Mentored Position: Postdoctoral Fellow
 - Co-author on 7 competitive abstract presentations
 - Co-inventor one 1 patent application
 - CCTSI CO-Pilot Award (\$30,000)
- Current Position: Clinical Scientist / Clinical Research Lead, Post-Market Clinical Follow-up, Terumo BCT

- Rachel Blomberg, PhD 2020-2022
- Mentored Position: T32 trainee (Multidisciplinary Research Training in Respiratory Disease, PI: Schwartz)
 - First author and speaker competitive abstract, Stem Cells, Cell Therapies, and Bioengineering in Lung Biology and Disease Conference 2021
 - First author and oral presentation, Society for Biomaterials 2022
 - Co-first author one peer-reviewed manuscript
 - Postdoc of the Month, April 2022
 - Current Position: Senior Professional Research Assistant, Magin Lab

- Rukshika Hewawasam, PhD 2020-2023
- Mentored Position: Postdoctoral Research Fellow
 - First author and poster presenter competitive abstract, Society for Biomaterials 2021
 - First author and oral presentation, Society for Biomaterials 2022
 - Co-first author one peer-reviewed manuscript
 - First author one peer-reviewed manuscript
 - Current Position: Senior Scientist, CordenPharma

Undergraduates:

- Dania El-Batal 2017-2018
- Mentored Position: Summer Research Intern
 - Current Position: Project manager, CordenPharma

- Dinesh Velu 2018
- Mentored Position: Graduate Experience for Multicultural Students (GEMS) Program Summer Intern
 - Co-author on one competitive abstract presentation, American Thoracic Society 2019
 - Current Position: Medical Student, East Tennessee State University

- Hassan El-Batal 2018-2019
- Mentored Position: BS Student, Bioengineering
 - Awarded Undergraduate Research Opportunity Program Scholarship
 - Co-author on Nature Communications article
 - Current Position: Software QA Engineer, IDT

- Mori Berman 2019
- Mentored Position: Summer Research Intern
 - Current Position: MS Student, Bioengineering

- Kari Ross 2019
- Mentored Position: Summer Research Intern in collaboration with Sharklet Technologies, Inc.
 - Current Position: Radio Frequency Regulatory Affairs Specialist, Medtronic

- Emily Thomas 2019
- Mentored Position: Gates Summer Internship Program (GSIP)
 - Co-author on two competitive abstract presentations, including GSIP Top 5 Poster Award
 - Awarded Goldwater Scholarship
 - Second author on peer reviewed manuscript

- Current Position: PhD Student, Biomedical Engineering, University of Michigan
- Nicholas Zawadzki 2019-2020
- Mentored Position: Undergraduate Research Project
 - Current Position: Professional Research Assistant, University of Colorado, Anschutz
- Hend Elzarad 2020
- Mentored Position: Entrepreneurial Independent Study
 - CEDC Outstanding Undergraduate Award
 - Current Position: Associate Clinical Account Specialist, Biosense Webster
- Isha Kanu 2020
- Mentored Position: Entrepreneurial Independent Study
 - Current Position: Product Designer and Researcher, DISH Network
- Andrew Colson 2021-2022
- Mentored Position: Undergraduate Research Volunteer
 - EURēCA grant recipient
 - NSF CAREER REU Summer Student 2022
- Jacqueline Miller 2021-2022
- Mentored Position: Undergraduate Research Volunteer
 - EURēCA grant recipient
 - Current Position: Intern, Wake Forest Institute of Regenerative Medicine
- Saif Eldeen Noreldeen 2021-2022
- Mentored Position: Undergraduate Research Volunteer
 - EURēCA grant recipient
 - Co-author one peer-reviewed manuscript
 - Summer Research Training Program Internship 2022
- Layla Blair 2021-Present
- Mentored Position: Undergraduate Research Volunteer
 - Co-author one peer-reviewed manuscript
 - MARC U-STAR Scholar
- Blake Neiderlander 2022
- Mentored Position: Gates Center Summer Intern
 - Current Position: BS Student, Biochemistry, Allegheny College
- Zoe Fry 2022
- Mentored Position: Undergraduate Research Volunteer
 - Co-author on one peer-reviewed manuscript
 - Current Position: BS Student, Biology, Gonzaga University
- Michael Nott 2022-2023
- Mentored Position: Undergraduate Research Volunteer
 - NSF CAREER REU Summer Student 2023
- Andrew Lu 2023
- Mentored Position: Gates Center Summer Intern
 - Current Position: BS Student, Biology, Washington University

Dema Essmaeil	2023-Present
<ul style="list-style-type: none"> Mentored Position: EURēCA Student Research Assistant 	
Alicia Vaquero	2023-2024
<ul style="list-style-type: none"> Mentored Position: Undergraduate Exchange Student (Madrid, Spain) 	
Alli Alzakra	2024-Present
<ul style="list-style-type: none"> Mentored Position: Undergraduate Research Volunteer 	
Tvishi Yendamuri	2024
<ul style="list-style-type: none"> Mentored Position: Gates Center Summer Intern 	

Thesis Committees:

Ani Levine	2017-2018
<ul style="list-style-type: none"> MS, Bioengineering (PI: Soranno) 	
Martina de Santis	2018-2020
<ul style="list-style-type: none"> PhD Student, Experimental Medical Sciences, Lund University, Sweden (PI: Wagner) 	
Bhavya Khilnani	2019
<ul style="list-style-type: none"> MS, Bioengineering (PI: Lammers) 	
Ian Garvin	2020-2022
<ul style="list-style-type: none"> MS, Bioengineering (PI: Lammers) 	
Ethan Vanderslice	2020-2022
<ul style="list-style-type: none"> Committee Chair PhD, Bioengineering (PI: Jacot) 	
Rachel Reeser	2020-2023
<ul style="list-style-type: none"> Committee Chair PhD, Bioengineering (PI: Jacot) 	
Alicia Tanneberger	2020-2021
<ul style="list-style-type: none"> MS, Biomedical Engineering, University of Vermont (PI: Weiss) 	
Kimberly Leon	2021
<ul style="list-style-type: none"> MS, Bioengineering (PI: Lammers) 	
Margaret Ferrari	2021-2023
<ul style="list-style-type: none"> Committee Chair PhD, Bioengineering (PI: Hunter) 	
Nasim Farahzad	2022-2023
<ul style="list-style-type: none"> MS, Bioengineering (PI: Peña) 	
Gabriela Ortiz	2022-2023
<ul style="list-style-type: none"> MS, Bioengineering (PI: Neeves) 	
Brookelynn Stillwell	2021-2022
<ul style="list-style-type: none"> Committee Chair MS, Bioengineering (PI: Payne) 	
Claire Levitt	2022-Present

- Committee Chair
 - PhD, Bioengineering (PI: Benninger)
- Lacey Mesia 2022-Present
- Committee Chair
 - PhD, Bioengineering (PI: Neeves)
- Eric Barrientos 2023-Present
- PhD, Bioengineering (PI: Neeves)
- Andrea Laurin 2023
- MS, Bioengineering (PI: Benninger)
- Adriana Joyce 2023
- Committee Chair and Core BIOE Advisor
 - MS, Bioengineering (PI: Ayers)
- Zaina Ashour 2024-Present
- Committee Chair
 - PhD, Bioengineering (PI: Neeves)

GRANT SUPPORT

Ongoing Course Development Support

1. Professional Master's Degree Development (Magin) 08/01/2024 – 12/31/2024
 College of Engineering, Design, and Computing \$35,564
 Title: Masters in Quality Assurance and Regulatory Affairs (QA/RA)
 Role: PI
2. Curriculum Development (Magin) 08/01/2024 – 09/30/2024
 Department of Bioengineering \$11,958
 Title: Quality Assurance and Regulatory Affairs (QA/RA) Certificate Program
 Role: PI

Ongoing Research Support

1. 2225554 (co-PIs Weiss, Magin, Ryan, Smith) 10/01/2022 – 09/30/2025
 National Science Foundation \$1,500,000
 Title: RECODE: Defining Environmental Design Criteria for Directed Differentiation of Type 1 from Type 2 Lung Alveolar Epithelial Cells
 Project Goals: Defining biomaterial characteristics and cell culture conditions that direct differentiation of Type 1 from Type 2 Lung Alveolar Epithelial Cells.
 Role: co-PI Leading design and synthesis of biomaterial platforms.
2. MR/X002225/1 (Dean) 08/22/2022 – 07/21/2024
 Medical Research Council, UK Research and Innovation £314,324
 Title: A pharmacological approach to drive lung repair
 Project Goals: To determine whether Wingless-Int5a (Wnt5a) growth factor could be an effective regenerative medicine treatment for the lungs.
 Role: Collaborator providing materials for precision-lung slice embedding.

3. R01 HL153096 (Magin) 07/27/2020 – 06/26/2025
NIH/NHLBI \$2,575,209
Title: Hybrid Hydrogel Biomaterials Comprising Clickable Decellularized Extracellular Matrix for Engineering Dynamic 3D Models of Fibrosis
Project Goals: To engineer new biomaterials that incorporate synthetic components and natural lung proteins to build 3D *in vitro* models of fibrotic disease in combination with primary lung cells derived from mouse and human tissues, modified by exposure to light to replicate key aspects of the disease not otherwise reproducible in current models, advancing discovery of new targets for treatment.
4. 1941401 (Magin) 02/01/2020 – 01/31/2025
National Science Foundation \$501,768
Research Experiences for Undergraduates Supplement \$12,350
Title: CAREER: Spatiotemporally Addressable Hydrogel Biomaterials as Tools for Investigating Fibroblast Mechanobiology
Project Goals: The overarching goal of this proposal is to develop hydrolytically stable, dynamically tunable biomaterial platforms to improve our understanding of the fibroblast mechanobiology.

Completed Research Support

1. R01 HL080396 (Evans) 12/01/2018 – 11/30/2023
NIH/NHLBI \$1,478,336
Title: Role of Mucin in Lung Homeostasis and Pathophysiology
Project Goals: To study how two specific mucin proteins regulate airway mucus defense health and airflow obstruction in allergic asthma.
2. Lung Cancer Colorado Pilot Project (co-PIs Tennis, Magin) 04/01/2022 – 03/30/2023
Thoracic Oncology Research Initiative \$75,000
Title: Early lung cancer and chemoprevention in a bioengineered *ex vivo* model
Project Goals: To use hydrogel embedding to maintain lung cancer lesions within precision-cut lung slices *ex vivo* to study lung cancer chemoprevention.
3. W81XWH-20-1-0037 (Magin) 01/01/2020 – 12/31/2022
Department of the Army \$310,999
Title: 3D models of pulmonary fibrosis to facilitate precision medicine
Project Goals: To create 3D models of pulmonary fibrosis using hydrogel biomaterials and human induced-pluripotent stem cells.
4. R21 CA252172 (co-PI Magin, co-PI Tennis) 07/14/2020 – 06/13/2022
NIH/NCI \$275,000
Title: Engineering *ex vivo* models of lung cancer and chemoprevention
Project Goals: To use a hydrogel-embedding technique to encapsulate precision-cut lung slices that can be exposed to chemical carcinogens *ex vivo* to recapitulate mouse models of lung cancer and investigate chemopreventive strategies.
5. CO-Pilot Junior Faculty Award (Magin) 09/15/2020 - 10/31/2021
Colorado Clinical & Translational Sciences Institute \$30,000
Title: Mechanically tunable hydrogel biomaterials to improve *in vitro* models of pulmonary fibrosis

Project Goals: To develop dynamically tunable biomaterial platforms to explore oxidative stresses in pulmonary fibrosis.

6. N/A (Magin) 07/15/2019 – 06/30/2021
Center for Women’s Health Research \$50,000
Title: 3D-Printed Human Arterial Models to Study Sex Differences in Vascular Disease
Project Goals: To synthesize dynamic bioinks and establish protocols for 3D printing human-mimetic pulmonary arterial blood vessel models.
7. N/A (Magin) 07/15/2019-06/30/2020
Colorado Pulmonary Vascular Disease Research Award \$7,500
Title: Development of 3D-Printed Models of Human Pulmonary Vascular Disease
Project Goals: To synthesize dynamic bioinks and establish protocols for 3D printing human-mimetic pulmonary arterial blood vessel models.
8. Unrestricted Grant: Pulmonary (Magin) 12/15/2017 - 11/30/2019
American Thoracic Society Foundation \$40,000
Title: Bio-inspired 3D Cell Culture Platforms for Improved Modeling of Lung Epithelium In Vitro
Project Goals: To 1) consistently produce synthetic 3D templates that can be used to pattern primary lung cells within a well-defined hydrogel matrix that mimics healthy or fibrotic ECM to replicate alveolar structure, and 2) determine the contribution of extracellular matrix stiffness to the initiation of a profibrotic phenotype in alveolar epithelial cells and subsequent signaling *in vitro*.
9. Pulmonary Innovation Award (Magin, Vladar) 07/31/2018 - 06/30/2019
PSCCM \$16,000
Title: Air-liquid interface-independent culture of well-differentiated airway epithelial cells for high content image-based screening
Project Goal: To establish and validate air-liquid interface-free culture of well-differentiated airway epithelial cells for high-throughput screening and drug discovery.
10. CO-Pilot Mentored Faculty Award (Bailey) 05/01/2018 - 04/30/2019
Colorado Clinical & Translational Sciences Institute \$30,000
Title: Bioengineered Hydrogels to Improve Three-Dimensional (3D) Models of Lung Regeneration in Chronic Obstructive Pulmonary Disease (COPD)
Project Goals: To create improved human models of COPD to further progress the field of lung regeneration research for drug discovery and validation, thus reducing the need for animal studies and unnecessary exposure of potentially harmful drugs to patients in clinical trials.
11. Sponsored Research Agreement (Magin) 11/01/2017 - 12/31/2018
Sharklet Technologies, Inc. \$103,714
Title: Evaluation of micropatterned surfaces for minimizing percutaneous gastrostomy tube complications
Project Goals: To test Sharklet micropatterns in both 2D and 3D apical cell migration models that will be developed and implemented in the Magin laboratory.
12. Pilot & Feasibility Grant (Magin) 07/01/2016 – 12/31/2017
Skin Disease Research Center, CU Anschutz \$20,000

Title: Bio-inspired 3D Microenvironments for Improved Patient-Specific Keratinocyte Differentiation
Project Goals: To develop a bio-inspired, engineered cell culture platform that will better recapitulate the native extracellular microenvironment for efficient and consistent differentiation of patient-specific induced pluripotent stem cells (iPSCs) to keratinocytes for chronic wound treatment.

13. 2 R44 HD085616-02 (Mann, Magin Co-I) 04/15/2016 – 03/31/2020
NIH/NICHD \$960,352
Title: Micropatterned surfaces for minimizing percutaneous gastrostomy tube complications
Project Goals: To create and evaluate the capacity to reduced complications associated with percutaneous gastrostomy feeding tube complications such as tube displacement, tube clogging, and infection.
14. 5 R44 AR067584-03 (Magin) 09/18/2014 – 07/31/2018
NIH/NIAMS \$1,696,049
Title: Advanced Micropatterned Wound Dressings for Enhanced Epithelialization
Project Goals: To manufacture a bilayered wound dressing that is safe and effective and demonstrate enhanced wound closure in porcine wound model.
15. 2 R44EY022541-02A (Reddy, Magin Co-I) 10/01/2013 – 09/30/2016
NIH/NEI \$1,749,976
Title: Micropatterned lens membrane for reducing incidence of PCO
Project Goals: To develop a next generation intraocular lens that will prevent posterior capsule opacification.
16. Seed Grant (Magin, Wan) 09/01/2013 – 08/31/2014
Materials Science & Engineering Program, CU Boulder \$1,000
Title: Dynamically Tunable Hydrogels to Probe Cellular Responses to Tissue Fibrosis
Project Goals: To develop stiffening material systems to study valvular interstitial cell responses to changes in material modulus.
17. 1 F32AR061923-02 (Magin) 09/01/2011 – 08/31/2013
NIH/NIAMS \$98,863
Title: Hydrogel Scaffolds with Engineered Dynamically Tunable Microtopographies for Human Mesenchymal Stem Cell Differentiation
Project Goals: To engineer an improved, bioactive bone graft material for repairing bone defects resulting from congenital anomalies, trauma, infection, and cancer. My approach is to investigate the mechanisms for how cells respond to dynamic biophysical cues, such as topography.

BIBLIOGRAPHY

Names of trainees from my laboratory are underlined and the following designations apply: ^PPostdoctoral Researcher, ^GGraduate Student, ^UUndergraduate Student, and **+Corresponding Author**.

PEER-REVIEWED PUBLICATIONS

1. **Magin, Chelsea M.**, Cooper, Scott P., and Brennan, Anthony B., Non-Toxic Antifouling Strategies. *Materials Today* 13 (4), 36-44 (2010). [https://doi.org/10.1016/S1369-7021\(10\)70058-4](https://doi.org/10.1016/S1369-7021(10)70058-4)
2. **Magin, Chelsea M.**, Long, Christopher J., Cooper, Scott P., Ista, Linnea K., Lopez, Gabriel P., and Brennan, Anthony B., Engineered Antifouling Microtopographies: The role of Reynolds number in a

- model that predicts attachment of zoospores of *Ulva* and cells of *Cobetia marina*. *Biofouling* 26(6), 719-727 (2010). <https://doi.org/10.1080/08927014.2010.511198>
3. **Magin, Chelsea M.**, Finlay, John A., Clay, Gemma, Callow, Maureen E., Callow, James A., and Brennan, Anthony B., Antifouling Performance of Crosslinked Hydrogels: Refinement of an Attachment Model. *Biomacromolecules* 12(4), 915-922 (2011). <https://doi.org/10.1021/bm101229v>
 4. **Kirschner, Chelsea M.** and Brennan, Anthony B., Bio-Inspired Antifouling Strategies. *Annual Reviews of Materials Research*. 42(1), 211-229 (2012). <https://doi.org/10.1146/annurev-matsci-070511-155012>
 5. **Kirschner, Chelsea M.** and Kristi S. Anseth. In Situ Control of Cell Substrate Microtopographies Using Photolabile Hydrogels. *Small*. 9(4), 578-584 (2013). <https://doi.org/10.1002/sml.201201841>
 6. **Kirschner, Chelsea M.** and Kristi S. Anseth. Hydrogels in Healthcare: From Static to Dynamic Material Microenvironments. *Acta Materialia*. 61(3), 931-944 (2013). DOI: 10.1016/j.actamat.2012.10.037
 7. Decker, Joseph T., **Kirschner, Chelsea M.**, Long, Christopher J., Finlay, John A., Callow, Maureen E., Callow, James A., and Brennan, Anthony B., Engineered Antifouling Microtopographies: An Energetic Model that Predicts Cell Attachment. *Langmuir*. 29(42), 13023-13030 (2013). <https://doi.org/10.1021/la402952u>
 8. **Kirschner, Chelsea M.**, Alge, Daniel L., Gould, Sarah T. and Anseth, Kristi S., Clickable, Photodegradable Hydrogels to Dynamically Modulate Valvular Interstitial Cell Phenotype. *Advanced Healthcare Materials*. 3(5), 649-657 (2014). <https://doi.org/10.1002/adhm.201300288>
 9. May, Rhea M., **Magin, Chelsea M.**, Mann, Ethan E., Drinker, Michael, C. Fraser, John C., Siedlecki, Christopher A., Brennan, Anthony B., and Reddy, Shravanthi T., An engineered micropattern to reduce bacterial colonization, platelet adhesion and fibrin sheath formation for improve biocompatibility of central venous catheters. *Clinical and Translational Medicine*. 4(9), 1-8 (2015). DOI: 10.1186/s40169-015-0050-9. <https://doi.org/10.1186/s40169-015-0050-9>
 10. **Magin, Chelsea M.**, May, Rhea M., Drinker, Michael C., Cuevas, Kevin H., Brennan, Anthony B. and Reddy, Shravanthi T., Micropatterned Protective Membranes Inhibit Lens Epithelial Cell Migration in Posterior Capsule Opacification Model. *Translational Vision Science & Technology*. 4(2), 1-8 (2015). <https://doi.org/10.1167/tvst.4.2.9>
 11. ***Magin, Chelsea M.**, *Alge, Daniel L., and Anseth, Kristi S., Bio-inspired 3D microenvironments: a new dimension in regenerative medicine. *Biomedical Materials*. 11(2), 022001 (2016). *The authors contributed equally to this work. <https://iopscience.iop.org/article/10.1088/1748-6041/11/2/022001>
 12. **+Magin, Chelsea M.**, Neale, Dylan B., Drinker, Michael C., Willenberg, Bradley J., Reddy, Shravanthi T., La Perle, Krista MD, Schultz, Gregory S., and Brennan, Anthony B., Evaluation of a Bilayered, Micropatterned Hydrogel Dressing for Full-Thickness Wound Healing. *Experimental Biology and Medicine*. 241(9), 986-995 (2016). [10.1177/1535370216640943](https://doi.org/10.1177/1535370216640943)
 13. ***Magin, Chelsea M.**, *Mann, Ethan E., Mettetal, M. Ryan, Deloid, Heather, Prater, Justin, May, Rhea M., Henry, MiKayla M., Thomas, John G., Twite, Mark D., and Reddy, Shravanthi T., Micropatterned Tracheal Tubes Reduce Occlusion Associated with Artificial Airway Narrowing. *Annals of Biomedical Engineering*. 44(12), 3645-3654 (2016). *The authors contributed equally to this work. <https://link.springer.com/article/10.1007/s10439-016-1698-z>
 14. Symmes, Breanna A., Stefanski, Adrienne L., **Magin, Chelsea M.**, and Evans, Christopher M. Role of Role of Mucins in Lung Homeostasis: Regulated expression and biosynthesis in health and disease. *Biochemical Society Transactions*. 46(3), 707-719 (2018). <https://doi.org/10.1042/BST20170455>
 15. **PBailey, Kolene E.**, Floren, Michael, D'Ovidio, Tyler J., Lammers, Steven R., Stenmark, Kurt R., **+Magin, Chelsea M.** Tissue-Informed Engineering Strategies for Modeling Human Pulmonary Diseases. *American Journal of Physiology-Lung Cellular and Molecular Physiology*. 316(2), L303-L320 (2019). <https://doi.org/10.1152/ajplung.00353.2018>

16. [©]Davis-Hall, Duncan, [©]Nguyen, Vy, D'Ovidio, Tyler J., Tsai, Ethan, Bilousova, Ganna, +**Magin, Chelsea M.** Peptide-functionalized hydrogels modulate integrin expression and stemness in adult human epidermal keratinocytes. *Advanced Biology*. 3(10), 1900022. DOI: 10.1002/adbi.201900022 (2019). <https://doi.org/10.1002/adbi.201900022>
17. D'Ovidio, Tyler J., Friederich, Aidan R. W., de Herrera, Nic, [©]Davis-Hall, Duncan, Mann, Ethan E., +**Magin, Chelsea M.** Micropattern-Mediated Apical Guidance Accelerates Epithelial Cell Migration to Improve Healing around Percutaneous Gastronomy Tubes. *Biomedical Physics & Engineering Express* 5(6), 065027 (2019). <https://iopscience.iop.org/article/10.1088/2057-1976/ab50d5>
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60. Meredith Tennis, Caroline Hauer, Kayla Sompel, Rachel Blomberg, and **Chelsea M. Magin**. “Bioengineered Precision-Cut Lung Slices Support *Ex Vivo* Culture of *In-Vivo*-Induced Premalignant Lung Adenocarcinoma.” Poster Presentation. American Thoracic Society International Conference, San Diego, CA, May 2024.
61. Herrera, Jeremy A., Maslanka, M., Blumhagen, R.Z., Blomberg, R., Brancato, J., Huber, J., Cool, C., **Magin, C.M.**, Hansen, K.C., Yang, I.V., Scwhartz, D.A. “*MUC5B* promoter variant drives the protein signature in early lung fibrosis.” Poster Presentation. American Thoracic Society International Conference, San Diego, CA, May 2024.
62. Mikala C. Mueller, Michael Nott, Rukshika Hewawasam, **Chelsea M. Magin**. “Dynamic stiffening and softening hydrogels to model fibroblastic foci in 3D.” Poster Presentation. The 12th World Biomaterials Congress, Daegu, Republic of Korea, May 2024.
63. Haley Noelle, Mikala C. Mueller, Dema H. Essmaeil, Rachel Blomberg, and **Chelsea M. Magin**. “Functionalizing Human dECM for Incorporation into 3D Pulmonary Fibrosis Models.” Poster Presentation. Thomas L. Petty Aspen Lung Conference, Aspen, CO, June 2024.
64. Alicia E. Tanneberger, Rachel Blomberg, David W.H. Riches, Amy L. Ryan, and **Chelsea M. Magin**. “Engineering Tunable Stiffness Hydrogels to Model Fibrotic Alveolar Transitional Cells and Study Human Pulmonary Fibrosis.” Poster Presentation. Thomas L. Petty Aspen Lung Conference, Aspen, CO, June 2024.
65. Rachel Blomberg, Mikala C. Mueller, David W.H. Riches, and **Chelsea M. Magin**. "Cell-cell and cell-matrix interactions in bioengineered 3D models of lung fibrosis." Poster Presentation. Thomas L. Petty Aspen Lung Conference, Aspen, CO, June 2024.
66. Tvishi Yendamuri, Alicia E. Tanneberger, Rachel Blomberg, and **Chelsea M. Magin**. “Microcosms of the Lung: Hydrogel-Embedded Precision-Cut Lung Slices as an *Ex Vivo* Model for Pulmonary Fibrosis.” Poster Presentation. Gates Summer Internship Program Symposium, University of Colorado, Anschutz Medical Campus, Aurora, CO, August 2024.
67. Haley Noelle, Mikala C. Mueller, Dema H. Essmaeil, Rachel Blomberg, and **Chelsea M. Magin**. “Functionalizing Human dECM for Incorporation into 3D Pulmonary Fibrosis Models.” Poster and Oral Presentation. Society for Biomaterials Regional Symposia, Aurora, CO, September 2024.
68. Dema H. Essmaeil, Rachel Blomberg, Mikala C. Mueller, and **Chelsea M. Magin**. “Engineering 3D Lung Models with Magnetically Labeled Fibroblasts.” Poster Presentation. Society for Biomaterials Regional Symposia, Aurora, CO, September 2024.

OUTREACH AND PUBLIC ENGAGEMENT WITH SCIENCE

Outreach Workshops

Hands-On Hydrogels Middle School Teacher Training Workshop. A half-day workshop offered in collaboration with the Colorado Bioscience Institute and the Medtronic Foundation. The training included an introduction to hydrogels by Dr. Magin, a tour of the Magin lab, and a hands-on activity where teachers explored making hydrogels. Teachers (14 total) were provided with a protocol and a kit for repeating these experiments in the classroom funded by the Medtronic Foundation. Concepts

learned during the day related to Next Generation Science Standards and Colorado Academic Standards. March 2024. <https://ucdengineeringnews.com/2024/03/12/science-teacher-to-scientist/>

Public Engagement with STEM Talks

1. **Women As Innovators Invited Table Conversation Leader.** Chelsea M. Magin. “Women as Innovators.” Women as Innovators Seminar. Department of Bioengineering, University of Colorado, Anschutz Medical Campus. Aurora, CO, February 2019.
2. **MindSpark Learning Workshop.** Mandi Ruud-Singleton and Chelsea M. Magin. “Research Experience for Teachers.” Invited Seminar Speaker. MindSpark Learning, Denver, CO, February 2019.
3. **Center for Women’s Health Research Medicine Cabinet Meeting.** Chelsea M. Magin. “3D Printing Advances in Women’s Health.” Invited Seminar. University of Colorado, Anschutz Medical Campus. Aurora, CO, January 2020.
4. **Center for Women’s Health Research Host Committee Meeting.** Chelsea M. Magin. “3D Design and Innovation for Modeling Sex Differences.” Invited Seminar. University of Colorado, Anschutz Medical Campus. Aurora, CO, September 2020.
5. **Rocky Mountain Gator Club.** Chelsea M. Magin. “3D Printing Advances in Lung Health.” Invited Speaker. Webinar, April 2020.
6. **Ludeman Center for Women’s Health Research Women’s Health Lecture Series at ARROW Electronics.** Davis-Hall, Duncan, Mueller, Mikala, and Magin, Chelsea M. “Exploring Sex-Differences in 3D-Printed Blood Vessel Models.” Invited Speaker. Virtual, April 2023.
7. **Society for Women Engineers Spring Summit Keynote Speaker.** Chelsea M. Magin “Embracing a Non-linear Career Path: From First-generation College Student to Bioengineering Professor.” Invited Keynote Speaker. University of Colorado, Denver. April 2024.

Podcasts

Ask the Expert: adVentures in Innovation. “From Academia to Industry and Back: Navigating Career Transitions.” Interviewed by Cathy Bodine, Colorado Clinical and Translational Science Institute. University of Colorado, Anschutz Medical Campus. Aurora, CO, May 2022.

<https://www.youtube.com/watch?v=6jei419XmVY>

Engineering Field of Dreams. Interviewed by Gates Matthew Stoner, University of Arizona. May 2024.

<https://engineeringfieldsofdreams.com/>

Invitations

White House Initiative on Women’s Health Research Event. Invited to join First Lady Jill Biden at the White House initiative on Women’s Health Research Event at the University of Colorado, Anschutz Medical Campus, Aurora, CO. April 2024. <https://youtu.be/cPa-aw7Aaus?si=iTZfySBoWmQDku-1>

PROFESSIONAL DEVELOPMENT

From Laboratory to Leadership, Colorado Bioscience Institute	2016
Impact Denver, Denver Metro Chamber Leadership Foundation	2016
Implicit Bias Workshop, University of Colorado School of Medicine	2017
Women’s Leadership Training, University of Colorado School of Medicine	2017 – 2018
CO-Mentor, Colorado Clinical & Translational Sciences Institute	2017 - 2018
Junior Faculty Mentor Program, Department of Medicine	2018

Career Cornerstones, School of Medicine	2019
Bench to Bedside: Integrating Sex and Gender to Improve Human Health, NIH OWHR	2020
Certificate in Designing Student-Centered Courses, ACUE	2020
Certificate in Promoting Active Online Learning, ACUE	2020
Managing Remotely, University of Colorado, Denver Anschutz	2020
6 Critical Practices for Leading Teams, University of Colorado, Denver Anschutz	2021
Certificate in Inclusive Teaching for Equitable Learning, ACUE	2022
Certificate in Creating an Inclusive and Supportive Learning Environment, ACUE	2022
Certificate in Inspiring Inquiry and Preparing Lifelong Learners, ACUE	2022
Communicating your Research to the Public, CCTSI	2023
Backward Course Design, CU Denver Course Development Institute	2023
Mentoring ³ : Mentor, Mentee, and Peer!, CCTSI	2024
Leading to Inspire Innovation and Creativity, CBSI	2024

CERTIFICATIONS

Certificate in Effective Instruction 2022

Association of College and University Educators

This certificate signifies my completion of a 25-module course in effective teaching practices requiring the implementation of evidence-based instructional approaches. The credential is co-issued by the American Council on Education and distinguishes faculty for their commitment to educational excellence and student success.