

Chelsea M. Magin, Ph.D.

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RESEARCH EXPERTISE

- Biomaterial design & synthesis
- Tissue-informed *in vitro* disease models
- Pulmonary tissue engineering

TEACHING INTERESTS

- Biomaterials
- Translational Engineering
- Product Development & Regulatory Affairs

1. BIOGRAPHICAL SKETCH

University of Colorado, Anschutz Medical Campus, Aurora, CO

2017-Present

Assistant Professor

Division of Pulmonary Sciences and Critical Care Medicine

Department of Medicine

Department of Bioengineering

12700 E. 19th Ave MS C272

Aurora, CO 80045

chelsea.magin@cuanschutz.edu

Principal Investigator of the Bio-Inspired Pulmonary Engineering Laboratory. My laboratory aims to invent biomaterials and microfabrication techniques that revolutionize translational engineering research and pulmonary healthcare outcomes.

2. EDUCATION

University of Florida, Gainesville, FL

2006

Bachelor of Science, Materials Science & Engineering

University of Florida, Gainesville, FL

2010

Doctor of Philosophy, Biomedical Engineering

Advisor: Dr. Anthony Brennan

University of Colorado, Boulder, Boulder, CO

2013

NIH Postdoctoral Research Fellow, Chemical & Biological Engineering

Advisor: Dr. Kristi Anseth

3. PREVIOUS ACADEMIC APPOINTMENTS

University of Colorado, Denver, Denver, CO

2016-2017

Assistant Professor, Adjunct

Department of Bioengineering

Contributed industrial experience to the development of new courses and curriculum within the College of Engineering and the Department of Bioengineering.

- Developed the Engineering General Chemistry (ENGR 1130) course for the College of Engineering
- Created and taught two modules in the new Biomaterials Laboratory (BIOE 3070) course
- Integrated industrial projects, partnerships and principles into the Bioengineering Senior Design

4. 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 (+10 additional 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
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Skin Care & Treatments
R&D Engineering Intern

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

5. HONORS, SPECIAL RECOGNITIONS AND AWARDS

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| ▪ Colorado Bioscience Association Educator of the Year | 2019 |
| ▪ Biotechnology and Bioengineering Top 50 Reviewer | 2012 |
| ▪ NIH Ruth L. Kirschstein NRSA Postdoctoral Fellowship | 2011-2013 |
| ▪ Attributes of a Gator Engineer Recognition Award for Leadership | 2010 |
| ▪ Phyllis M. Meek Spirit of Susan B. Anthony Award | 2010 |
| ▪ Clare Boothe Luce Graduate Fellowship | 2009 |
| ▪ Best Poster International Congress on Marine Corrosion and Fouling | 2008 |
| ▪ Benton Engineering Council Leadership Award | 2008 |
| ▪ University of Florida Alumni Fellowship | 2006-2010 |

6. PROFESSIONAL ORGANIZATIONS

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| ▪ Society of Women Engineers (SWE) | 2002-Present |
| ▪ Tau Beta Pi Engineering Honor Society | 2003-Present |

- Society for Biomaterials 2004-Present
- American Chemical Society 2012-Present
- Gates Center for Regenerative Medicine & Stem Cell Biology 2013-Present
- Biomedical Engineering Society 2014-Present
- American Thoracic Society 2017-Present
- Precision Biomaterials IRT 2018-Present
- American Heart Association 2019-Present
- Center for Women’s Health Research 2019-Present

7. MAJOR COMMITTEE AND SERVICE RESPONSIBILITIES

- Education Advisory Board, Colorado Bioscience Institute 2015-Present
- Vice President, Board of Directors, Jovial Concepts 2016-2017
- Alumni Advisory Council, Denver Metro Chamber Leadership Foundation 2016-2017
- ABET Constituency Committee, Department of Bioengineering, CU-Denver 2016-2018
- Programming Committee, BioInterface Workshop & Symposium 2016-2018
- Committee for Equality, Diversity and Justice, PSCCM 2017-2018
- Career Development Committee, PSCCM 2017-2018
- Enhancing Research Collaborations Committee, PSCCM 2018
- Junior Programming Committee Chair, Stem Cells, Cell Therapies, and Bioengineering in Lung Biology and Diseases Conference 2018-2019
 - Organizer, Chair and Moderator: Professional Skills Course: Introduction to Technology Commercialization and Business Communication and Elevator Pitch Competition, 2019 Vermont Stem Cells, Cell Therapies, and Bioengineering in Lung Biology and Lung Diseases Conference
- Programming Committee, Respiratory Cell and Molecular Biology American Thoracic Society 2018-Present
- Respiratory Cell and Molecular Biology Innovation and Entrepreneurial Working Group, American Thoracic Society 2019-Present
- Junior Programming Committee Chair, Stem Cells, Cell Therapies, and Bioengineering in Lung Biology and Diseases Conference 2019
- Alumni Advisory Board, Department of Biomedical Engineering, UF 2019-Present
- Faculty Advisor, Society for Biomaterials, CU-Denver 2020-Present
- Executive Programming Committee Member, Stem Cells, Cell Therapies, and Bioengineering in Lung Biology and Diseases Conference 2020-Present

8. LICENSURE AND BOARD CERTIFICATION

Not applicable.

9. INVENTIONS, INTELLECTUAL PROPERTY AND PATENTS

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.** US20070130706. Filed: June 2006.

3. "Formulation and Products for Promoting Skin Cleanliness and Health." Wenzel, Scott W., Koenig, David William, Hoffman, Douglas R., Krautkramer, Candace Dyan, Thomas, Brian, Mocadlo, Cheryl, **Magin, Chelsea**. AU2008337182B2. Filed: June 2008. Granted: December 2013.
4. "Surfaces for Controlled Bioadhesion, Methods of Manufacture Thereof and Articles Comprising the Same." **Magin, Chelsea**, Brennan, Anthony B. PCT/US10/059246. Filed: December 2010.
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. PCT/US15/044238. Filed: August 2015. Granted in Korea. 7 International Patents Pending.
6. "Ventilator-endotracheal tube-lung benchtop model." **Chelsea M. Magin**, Shrvanathi T Reddy, Rhea Marie May, Michael Ryan Mettetal, MiKayla Maye Henry. US9903792B2. Filed: October 2014. Granted: February 2018.
7. "Surface topographies for non-toxic bioadhesion control." Leah Tonkin, Anthony B Brennan, Shrvanathi T Reddy, **Chelsea M. Magin**, Ethan Mann, Mark Spiecker, Bryce Stevenson. PCT/US16/056563. Filed: June 2015.
8. "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.
9. "Micropatterned Intraocular Implant." Cuevas, Kevin H., Reddy, Shrvanathi T., **Magin, Chelsea M.**, Mettetal, M. Ryan, Brennan, Anthony B., May, Rhea M., Mann, Ethan E. US20150342725A1. Filed: August 2015. Granted: April 2018. 5 International Patents Pending.
10. "Bilayered devices for enhanced healing." **Magin, Chelsea M.**, Brennan, Anthony B., Willenberg, Bradley J., Schultz, Gregory S. and Neale, Dylan B. PCT/US/16/029122. 11 International Patents Pending. Filed: April 2017.
11. "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.
12. "3D in vitro models of lung tissue." **Magin, Chelsea M.**, D'Ovidio, Tyler J., and Darling, Nicole J. PCT/US2019/012722. Filed: January 2019.
13. "Hybrid-hydrogels comprising decellularized extracellular matrix." Petrou, Cassandra L. and **Magin, Chelsea M.** Provisional Patent Application Filed: April 2020.

10. REVIEW AND REFEREE WORK

- Ad Hoc Manuscript/Book Proposal Review 2011-Present
 - Book Proposal Reviewer
 - CRC Press/Taylor and Francis "Lung Stem Cell Behavior"
 - Manuscript Reviewer for journals including, European Respiratory Journal, Advanced Materials Interfaces, Biotechnology and Bioengineering, Biomacromolecules, Acta Biomaterialia, Biofouling, Biofabrication, ACS Applied Materials & Interfaces, Langmuir, Biomedical Materials, Journal of Applied Polymer Science, Multifunctional Materials, Stem Cells and Development, Journal of Biomedical Materials Research
- NIH Grant Reviewer
 - Special Emphasis Panel ZRG1 MOSS-T(12) 2014

11. INVITED EXTRAMURAL LECTURES AND PRESENTATIONS

Local

1. **Chelsea M. Kirschner**. "Regulation of Biological Adhesion through Engineered Biomaterial Interfaces." Invited Presentation. University of Florida Society for Biomaterials Student Chapter Meeting. Gainesville, FL, January 2013.

2. **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.
3. **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.
4. **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.
5. **Chelsea M. Magin.** “My Random Walk to Leadership.” Invited Speaker. Pulmonary Sciences and Critical Care Medicine Fellowship Retreat. Breckenridge, CO, September 2017.
6. 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.
7. **Chelsea M. Magin.** “Bio-inspired 3D cell culture platforms for translational pulmonary engineering.” Invited Speaker. Translational Cardiovascular Biology Conference. Aurora, CO, January 2018.
8. **Chelsea M. Magin.** “Tissue-Informed Dynamic Biomaterials for Modeling Pulmonary Disease.” Invited Speaker. Pulmonary Research in Progress. National Jewish Health, Denver, CO, March 2018.
9. **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.
10. 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.
11. **Chelsea M. Magin.** “Women as Innovators.” Invited Table Conversation Leader. Women as Innovators Seminar. Department of Bioengineering, University of Colorado, Anschutz Medical Campus. Aurora, CO, February 2019.
12. **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.
13. **Chelsea M. Magin.** “3D Printing Advances in Women’s Health.” Invited Seminar. Center for Women’s Health Research Medicine Cabinet Meeting. University of Colorado, Anschutz Medical Campus. Aurora, CO, January 2020.

Regional

14. **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.
15. Mandi Ruud-Singleton and **Chelsea M. Magin.** “Research Experience for Teachers.” Invited Seminar Speaker. MindSpark Learning, Denver, CO, February 2019.
16. **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.
17. **Chelsea M. Magin.** “3D Printing Advances in Lung Health.” Invited Speaker. Rocky Mountain Gator Club. Webinar, April 2020.

National

18. **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.
19. 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.
20. 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.
21. **Chelsea M. Magin**. “Biomaterials Strategies for Modeling Human Pulmonary Diseases.” Invited Talk. Biomaterials Day at the University of Florida, Gainesville, FL, March 2019.
22. **Chelsea M. Magin**. “Engineering 3D Models of Human Pulmonary Disease.” Sunrise Seminar. American Thoracic Society International Conference, Dallas, TX, May 2019.
23. Duncan Davis-Hall, Emily Thomas, **Chelsea M. Magin**. “Tissue-Informed Strategies for Modeling Human Pulmonary Hypertension.” American Heart Association Scientific Sessions, Philadelphia, PA, November 2019.
24. **Chelsea M. Magin**. “SFB: Biomaterials for Studying Lung Disease and Regeneration.” Society for Biomaterials, Webinar, May 2020.

International

25. 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.
26. **Chelsea M. Magin**. “Bioengineering Models of Human Lung Diseases.” Invited Talk. European Respiratory Society International Congress, Madrid, Spain, September 2019.

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).

International

14. Darcy E. Wagner and **Chelsea M. Magin**. “Engineering Biomaterials for Pulmonary Research.” Special Symposium, Session Co-Chair, World Biomaterials Congress, Glasgow, Scotland, December 2020.

12. TEACHING RECORD

University of Florida, Gainesville, FL	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, Boulder, CO	2012
<i>Guest Lecturer, Department of Chemical and Biological Engineering</i>	
Biomaterials (CHEN 4805, Undergraduate)	
University of Colorado, Denver Anschutz Medical Campus,	2014-Present
<i>Instructor, Graduate and Professional Skills Orientation</i>	
Professional Record Keeping	2014-Present

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

Assistant Professor, Adjunct, 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 innovative challenge published in the [Huffington Post](#) and the University of Colorado, Denver College of Engineering and Applied Sciences Annual Magazine

Guest Lecturer, Department of Bioengineering

Stem Cells and Regenerative Medicine (BIOE 5420, Graduate)

2017-Present

- Presented on “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)

2017-2018

- Mentored two design teams creating novel bioprinting techniques and bioreactor designs with collaborators in the Bioengineering Department

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

Assistant Professor, Department of Bioengineering

Regulatory Affairs (BIOE4420/5420, Undergraduate/Graduate)

Fall 2019

- Updated the course, assessments and syllabus with problem-based learning
- 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

Assistant Professor, Department of Bioengineering

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

Spring 2020

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

13. GRANT SUPPORT

Ongoing Research Support

1. CO-Pilot Junior Faculty Award (Magin) 05/01/2020 - 04/30/2021
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.
2. PR192068 (Magin) 01/01/2020 – 06/30/2021
Department of the Army \$97,294
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.

3. 1941401 (Magin) 02/01/2020 – 01/31/2025
National Science Foundation (Magin) \$98,425
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.
4. N/A (Magin) 07/15/2019 – 06/30/2020
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.
5. 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.
6. R01 HL080396 (Evans) 12/01/2018 – 11/30/2023
NIH/NHLBI \$396,584
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.

Completed Research Support

7. 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*.
8. 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.
9. 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.

10. 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.
11. 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.
12. 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.
13. 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.
14. 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.
15. 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.
16. 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.

14. BIBLIOGRAPHY

1. **Magin, Chelsea M.**, Cooper, Scott P., and Brennan, Anthony B., Non-Toxic Antifouling Strategies. *Materials Today* 13 (4), 36-44 (2010).
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).
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).
4. **Kirschner, Chelsea M.** and Brennan, Anthony B., Bio-Inspired Antifouling Strategies. *Annual Reviews of Materials Research*. 42(1), 211-229 (2012).
5. **Kirschner, Chelsea M.** and Kristi S. Anseth. In Situ Control of Cell Substrate Microtopographies Using Photolabile Hydrogels. *Small*. 9(4), 578-584 (2013).
6. **Kirschner, Chelsea M.** and Kristi S. Anseth. Hydrogels in Healthcare: From Static to Dynamic Material Microenvironments. *Acta Materialia*. 61(3), 931-944 (2013).
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).
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).
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).
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).
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.
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), 986-95 (2016).
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.

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*. Invited Review. 46(3), 707-719 (2018).
15. Bailey, 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*. Invited Review. 316(2), L303-L320 (2019).
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 Biosystems*. 3(10), 1900022. DOI: 10.1002/adbi.201900022 (2019).
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).
18. Morgan, Leslie E., Shenoy, Siddharth K., Raclawska, Dorota, Emezienna, Nkechinyere A., Richardson, Vanessa L., Hara, Naoko, Harder, Anna Q., El-Batal, Hassan M., **Magin, Chelsea M.**, Grove Villalon, Diane E., Duncan, Gregg, Hanes, Justin S., Soo Suk, Jung, Thornton, David J., Holguin, Fernando, Janssen, William J., Thelin, William R., Evans, Christopher M. Disulfide disruption reverses mucus dysfunction in allergic airway disease. *bioRxiv*. DOI: <https://doi.org/10.1101/768424> (2019).
19. Bailey, Kolene E., Pino, Christopher, Lennon, Mallory L., Lammers, Steven R., Jacot, Jeffrey G., **Magin, Chelsea M.** Embedding of precision-cut lung slices in engineered hydrogel biomaterials supports extended *in vitro* culture. *American Journal of Respiratory Cell and Molecular Biology*. 62(1), 14-22 (2020).
20. Petrou, Cassandra L., D'Ovidio, Tyler J., Tas, Sinem, Bölükbas, Deniz, Brown, R. Dale, Stenmark, Kurt R., Wager, Darcy E., **Magin, Chelsea M.** Clickable, decellularized extracellular matrix as a new tool for building dynamic, hybrid hydrogels to model chronic fibrotic diseases *in vitro*. Invited Submission. 2020 Emerging Investigators Special Issue. *Journal of Materials Chemistry B*. DOI: 10.1039/D0TB00613K (2020).
21. Wagner, Darcy E., Ikonomou, Laertis, Gilpin, Sarah E., **Magin, Chelsea M.**, Cruz, Fernanda, Greaney, Allison, Magnusson, Mattias, Chen, Ya Wen, Davis, Brian, Vanuytsel, Kim, Rolandsson Enes, Sara, Krasnodembskaya, Anna, Lehmann, Mareike, Westergren-Thorsson, Gunilla, Stegmayr, John, Alfasadi, Hani N., Hoffman, Evan T., Weiss, Daniel J., Ryan (Firth), Amy L. Stem Cells, Cell Therapies, and Bioengineering in Lung Biology and Disease 2019. *In revision* (2020).

BOOKS/BOOK CHAPTERS

1. **Kirschner, Chelsea M.** and Brennan, Anthony B. (Editors). (2014). *Bio-Inspired Materials for Biomedical Engineering*. Hoboken, NJ: John Wiley and Sons, Inc.
2. **Kirschner, Chelsea M.**, Schumacher, James F., and Brennan, Anthony B. "Cellular Responses to Bio-Inspired Engineered Topography." *Bio-Inspired Materials for Biomedical Engineering*. Hoboken, NJ: John Wiley and Sons, Inc, 2014.

COMPETITIVE SCIENTIFIC ABSTRACT PRESENTATIONS

1. **Chelsea M. Magin**, Matthew Blackburn, Christopher Long, Anthony Brennan. "Impact of Protein Adsorption on *Staphylococcus aureus* Biofilm Formation on Engineered Microtopographies," Poster Presentation. University of Florida Center for Macromolecular Science and Engineering, Gainesville, FL, January 2008.

2. **Chelsea M. Magin**, Christopher J. Long, Linnea K. Ista, Gabriel P. Lopez, Anthony B. Brennan. "Impact of Feature Size, Geometry, and Roughness of Engineered Surface Topographies on Colonization and Biofilm Formation of Marine Bacteria." Poster Presentation. 14th International Congress on Marine Corrosion and Fouling, Kobe Japan, July 2008.
3. **Chelsea M. Magin**, John A. Finlay, Maureen E. Callow, James A. Callow, Anthony B. Brennan. "Functionalized poly(ethylene-glycol)-dimethacrylate hydrogels reduce attachment of *Ulva linza*." Poster Presentation. Office of Naval Research and Advanced Nanostructured Surfaces for the Control of Biofouling Workshop, St. Petersburg, FL, December 2009.
4. **Chelsea M. Magin**, John A. Finlay, Maureen E. Callow, James A. Callow, Anthony B. Brennan. "Functionalized poly(ethylene-glycol)-dimethacrylate hydrogels reduce attachment of *Ulva linza* and *Navicula Perminuta*." Poster Presentation. University of Florida Center for Macromolecular Science and Engineering, Gainesville, FL, April 2010.
5. **Chelsea M. Magin** and Anthony B. Brennan. "Functionalized Poly(ethylene glycol) Dimethacrylate Hydrogels with Engineered Surface Topography to Promote Re-Endothelialization of Small Diameter Vascular Grafts." Poster Presentation. Society for Biomaterials Annual Meeting, Seattle, WA, April 2010.
6. **Chelsea M. Magin**, John A. Finlay, Linnea K. Ista, Maureen E. Callow, James A. Callow, Gabriel P. López and Anthony B. Brennan. "A Predictive Model for the Attachment of Marine Organisms to Microtopographies." Oral Presentation. 5th International Congress on Marine Corrosion and Fouling, Newcastle, UK, Jul. 2010.
7. **Chelsea M. Magin**, Adwoa Baah-Dwomoh, Michael Showalter, Mark S. Segal and Anthony B. Brennan. "Engineered Microtopographies Direct Human Coronary Artery Cell Elongation and Orientation." Poster Presentation. Society for Biomaterials Annual Meeting, Orlando, FL, April 2011.
8. **Chelsea M. Kirschner** presented for Jiun-Jeng Chen and Anthony B. Brennan. "Novel Antifouling Acrylate Grafts." Invited Oral Presentation. 242nd American Chemical Society National Meeting, Denver, CO, August 2011.
9. **Chelsea M. Kirschner** and Kristi S. Anseth. "Dynamically Tunable Cell Substrate Microtopographies Induce Osteogenesis." Poster Presentation. Keystone Symposia on Regenerative Tissue Engineering and Transplantation. Breckenridge, CO, April 1-6, 2012.
10. **Chelsea M. Kirschner** and Kristi S. Anseth. "Real Time Control of Cell Substrate Topographies Using Photolabile Hydrogels." Oral Presentation. World Biomaterials Congress. Chengdu, China, June 2012.
11. **Chelsea M. Kirschner**, Daniel L. Alge, Sarah T. Gould and Kristi S. Anseth. "Clickable, Photodegradable Hydrogels for Dynamically Tunable Cell Culture Substrates." Oral Presentation. Polymer Networks 2012 Conference. Jackson Hole, WY, August 2012.
12. **Chelsea M. Kirschner**. "Regulation of Biological Adhesion through Engineered Biomaterial Interfaces." Invited Presentation. University of Florida Society for Biomaterials Student Chapter Meeting. Gainesville, FL, January 2013.
13. **Chelsea M. Kirschner**, Daniel L. Alge, Sarah T. Gould and Kristi S. Anseth. "Clickable, Photodegradable Cell Culture Scaffolds to Modulate Valvular Interstitial Cell Phenotype *In Situ*." Oral Presentation. Society for Biomaterials Annual Meeting. Boston, MA, April 2013.
14. **Chelsea M. Kirschner**, Rhea M. May, Ethan E. Mann, Jay Fraser, Christopher A. Siedlecki, Anthony B. Brennan and Shravanthi T. Reddy. "Bio-inspired, Engineered Microtopographies Reduced Platelet Adhesion and Activation on Blood-Contacting Materials." Oral Presentation. Society for Biomaterials Annual Meeting. Denver, CO, April 2014.
15. Rhea M. May, **Chelsea M. Kirschner**, Ethan E. Mann, Jay Fraser, Christopher A. Siedlecki, Anthony B. Brennan and Shravanthi T. Reddy. "Micro-patterned surface improves hemocompatibility and

- reduces bacterial colonization: A novel approach to decreasing catheter-related thrombosis and blood stream infections.” Poster Presentation. Association for Vascular Access. National Harbor, MD, September 2014.
16. **Chelsea M. Kirschner**, Rhea M. May, Ethan E. Mann, Jay Fraser, Christopher A. Siedlecki, Anthony B. Brennan and Shrvanathi T. Reddy. “Bio-inspired Microtopographies Reduce Thrombosis on Blood-Contacting Materials.” Oral Presentation. Surfaces in Biomaterials Foundation Biointerface 2014. Redwood City, CA, October 2014.
 17. **Chelsea M. Kirschner**, Michael C. Drinker, Kevin H. Cuevas, Anthony B. Brennan and Shrvanathi T. Reddy. “Microtopographies Inhibit Human Lens Epithelial Cell Migration in Posterior Capsule Opacification Model.” Poster Presentation. Biomedical Engineering Society Annual Meeting. San Antonio, TX, October 2014.
 18. **Chelsea M. Magin**, Michael C. Drinker, Ethan E. Mann, Shrvanathi T. Reddy, Gregory S. Schultz and Anthony B. Brennan. “Biodegradable, Micropatterned Wound Dressings for Enhanced Epithelialization.” Oral Presentation. American Chemical Society Annual Meeting, Denver, CO March 2015.
 19. **Chelsea M. Magin**, Rhea M. May, Michael R. Mettetal, Austin Potthoff, Mark D. Twite and Shrvanathi T. Reddy. “Ventilator-Endotracheal Tube-Lung Benchtop Model for Luminal Occlusion.” Oral Presentation. Society for Biomaterials Annual Meeting, Charlotte, NC, April 2015.
 20. **Chelsea M. Magin**, Michael C. Drinker, Kevin H. Cuevas, Anthony B. Brennan, and Shrvanathi T. Reddy. “Micropatterned protective membranes inhibit human lens epithelial cell migration in posterior capsule opacification model.” Poster Presentation. The Association for Research in Vision and Ophthalmology Annual Meeting, Denver, CO May 2015.
 21. **Chelsea M. Magin**, Michael C. Drinker, Dylan B. Neale, Bradley J. Willenberg, Shrvanathi T. Reddy, Gregory S. Schultz, and Anthony B. Brennan. “Micropatterns Promote Cell Migration for Enhanced Epithelialization.” Oral Presentation. BioInterface Workshop & Symposium, Scottsdale, AZ, September 2015.
 22. **Chelsea M. Magin**, Michael C. Drinker, MiKayla M. Henry, Dylan B. Neale, Bradley J. Willenberg, Shrvanathi T. Reddy, Gregory S. Schultz and Anthony B. Brennan. “3D Printed Sharkskin for Enhanced Interstellar Wound Healing.” Oral Presentation. 100 Year Starship Symposium, Santa Clara, CA, October 2015.
 23. **Chelsea M. Magin**, Melinda J. Sogo, Mandi M. Ruud, Shrvanathi T. Reddy, Karin A. Payne and Anthony B. Brennan. “Micropatterned Biomaterials Facilitate Osteopromotion *In Vitro*.” Poster Presentation. World Biomaterials Congress, Montreal, Canada, May 2016.
 24. **Chelsea M. Magin**. “Engineered Biomaterial Interfaces for Controlling Biological Adhesion.” Invited Oral Presentation. World Biomaterials Congress, Montreal, Canada, May 2016.
 25. **Chelsea M. Magin**, Michael C. Drinker, MiKayla M. Henry, Dylan B. Neale, Bradley J. Willenberg, Shrvanathi T. Reddy, Krista M.D. La Perle, Gregory S. Schultz and Anthony B. Brennan. “Evaluation of a Bilayered, Micropatterned Dressing for Full-Thickness Wound Healing.” Poster Presentation. Symposium on Advanced Wound Care, Las Vegas, NV, October 2016.
 26. Lauren A. Blume, Jaclyn R. Strom, R. Blair Dodson, Anthony B. Brennan and **Chelsea M. Magin**. “Micropatterns Enhance Endothelial Cell Migration Under Flow Conditions.” Oral Presentation. Society for Biomaterials Annual Meeting, Minneapolis, MN, April 2017.
 27. **Chelsea M. Magin**. “Bio-Inspired, Engineered Cell Culture Platforms for Investigation of Fibrosis.” Stem Cells, Cell Therapies, and Bioengineering in Lung Biology and Diseases Conference, Burlington, VT, July 2017.

28. Duncan Davis-Hall, Vy M. Nguyen, Tyler J. D'Ovidio, Ethan Tsai, Ganna Bilousova and **Chelsea M. Magin**. "Bio-inspired cell culture platforms for improved epidermal regeneration *in vitro*." Society for Biomaterials Annual Meeting, Atlanta, GA, April 2018.
29. Tyler J. D'Ovidio, Vy M. Nguyen and **Chelsea M. Magin**. "Three-Dimensional (3D) Bioengineered Hydrogel Microenvironments as Reductionist Models of IPF." Rapid Abstract Poster Discussion Session: Novel Experimental Models and Approaches in Lung Biology, American Thoracic Society International Conference, San Diego, CA, May 2018.
30. Kolene E. Bailey, Tyler J. D'Ovidio, Gavin T. Campbell, Vy M. Nguyen, Nicole N. Manning, Melanie Koenigshoff and **Chelsea M. Magin**. "Bioengineered Hydrogels to Improve Three-Dimensional (3D) Models of Lung Regeneration in COPD." Rapid Abstract Poster Discussion Session: Novel Experimental Models and Approaches in Lung Biology, American Thoracic Society International Conference, San Diego, CA, May 2018.
31. Kolene E. Bailey, Tyler J. D'Ovidio, Gavin T. Campbell, Vy M. Nguyen, Nicole N. Manning, Melanie Koenigshoff and **Chelsea M. Magin**. "Bioengineered Hydrogels to Improve Three-Dimensional (3D) Models of Lung Regeneration in COPD." Oral Presentation, Aspen Lung Conference, Aspen, CO, June 2018.
32. Michael L. Floren, Y. Ding, X. Xin, S. Sharma, Stephanie Bryant, **Chelsea M. Magin**, Wei Tan and Kurt R. Stenmark. "Engineering Microenvironments to Screen Cell-Matrix Interactions: Towards a Full Vessel Model." Poster Presentation, Signal Transduction by Engineered Extracellular Matrices, Gordon Research Conference, Andover, NH, July 2018.
33. Duncan Davis-Hall, Vy M. Nguyen, Tyler J. D'Ovidio, Ethan Tsai, Ganna Bilousova and **Chelsea M. Magin**. "Bio-inspired interfaces for improved keratinocyte proliferative capacity." Poster Presentation, BioInterface Workshop and Symposium, Boulder, CO, October 2018.
34. Tyler J. D'Ovidio, Aidan Friederich, Ethan E. Mann, and **Chelsea M. Magin**. "Micropatterned percutaneous endoscopic gastrostomy tubes for enhanced stomal healing." Poster Presentation, BioInterface Workshop and Symposium, Boulder, CO, October 2018.
35. Nicole J. Darling, Tyler J. D'Ovidio and **Chelsea M. Magin**. "Spatiotemporally addressable biomaterial microenvironments for modeling pulmonary fibrosis *in vitro*." Oral Presentation, Society for Biomaterials Annual Meeting, Seattle, WA, April 2019.
36. Cassandra Petrou, Nicole J. Darling, Deniz Bölükbas, Darcy E. Wagner and **Chelsea M. Magin**. "Clickable, hybrid hydrogels as tissue culture platforms for modeling chronic pulmonary diseases *in vitro*." Poster Presentation, Society for Biomaterials Annual Meeting, Seattle, WA, April 2019.
37. Nicole J. Darling, Tyler J. D'Ovidio and **Chelsea M. Magin**. "Bottom-up Strategies for Engineering Distal Lung Structure *in vitro*." Oral Presentation, Society for Biomaterials Annual Meeting, Seattle, WA, April 2019.
38. Kolene E. Bailey, Nicole J. Darling, Dinesh Velu, Tyler J. D'Ovidio, Michael L. Floren, Steven R. Lammers, Kurt R. Stenmark and **Chelsea M. Magin**. "Development of Hydrogel Bioinks and 3D Bioprinting Techniques to Support Extended 3D Lung Tissue Culture *in vitro*." Rapid Abstract Poster Discussion Session: Engineered and Remodeled Matrix Compartments, American Thoracic Society International Conference, Dallas, TX, May 2019.
39. Hassan M. El-Batal, Christopher M. Evans and **Chelsea M. Magin**. "Development of Multiple-Particle Tracking Capabilities for Translational Research Investigating Complex Biological Fluids." Poster Presentation, Research and Creative Activities Symposium, Denver, CO, May 2019.
40. Duncan Davis-Hall, Emily E. Thomas, **Chelsea M. Magin**. "Development of dynamic hydrogel biomaterials for 3D-printed models of human pulmonary vascular disease." Poster Presentation, The Grover Conference, American Thoracic Society, Sedalia, CO, October 2019.

41. R. Dale Brown, Ayed Allawzi, Cassandra L. Petrou, **Chelsea M. Magin**, Eva N. Grayck, Kurt R. Stenmark. "Activation of Pulmonary and Cardiac Cell Populations in Response to Environmental Hypoxia or Lung Injury using Transgenic Mouse Strains Expressing Phenotype-sensitive Fluorescent Reporter Proteins." Thematic Poster Presentation, American Thoracic Society, Philadelphia, PA, May 2020 (Canceled due to COVID-19 Pandemic).
42. Duncan Davis-Hall, Emily E. Thomas, **Chelsea M. Magin**. "3D bioprinting of phototunable hydrogels to enhance models of pulmonary hypertension." Oral Presentation, World Biomaterials Congress, Glasgow, Scotland, December 2020.

15. PROFESSIONAL DEVELOPMENT

Career Cornerstones, School of Medicine	<i>2019</i>
Junior Faculty Mentor Program, Department of Medicine	<i>2018</i>
CO-Mentor, Colorado Clinical & Translational Sciences Institute	<i>2017 - 2018</i>
Women's Leadership Training, University of Colorado School of Medicine	<i>2017 - 2018</i>
Implicit Bias Workshop, University of Colorado School of Medicine	<i>2017</i>
Impact Denver, Denver Metro Chamber Leadership Foundation	<i>2016</i>
From Laboratory to Leadership, Colorado Bioscience Institute	<i>2016</i>