

Kaitlin C. Fogg

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PROFESSIONAL EXPERIENCE

- Assistant Professor **Oregon State University**
Bioengineering, 2019 – Present
- Postdoctoral Fellow **University of Wisconsin – Madison**
Biomedical Engineering, 2016 – 2019
Postdoctoral advisor: Pamela Kreeger
- Ph.D. **University of California, Davis**
Biomedical Engineering, June 2016
Engineering Hydrogel Biophysical Properties and Mesenchymal Stem Cell Microenvironment for Tissue Repair
Thesis advisor: Kent Leach
- B.S. **University of Wisconsin – Madison**
Chemical and Biological Engineering, December 2010
Biology in Engineering Certificate, December 2010
- Junior Specialist **University of California, Davis**
Surgical and Radiological Sciences, 2011
- Research Assistant **University of Wisconsin – Madison**
Chemical and Biological Engineering, 2009 – 2010

FELLOWSHIPS

- 2017 – 2019 The influence of macrophages on the expansion of ovarian cancer metastases. Rivkin Scientific Scholar Award, *Rivkin Center for Ovarian Cancer*
- 2015 – 2017 Spheroidal culture of endothelial progenitor cells from human diabetic patients to enhance their vasculogenic potential. American Heart Association Predoctoral Fellowship, *American Heart Association*

AWARDS AND HONORS

- 2019 1st Place Poster Award, NCI Cancer Tissue Engineering Collaborative Inaugural Investigators Meeting.
- 2018 2018 Postdoctoral Fellow Shooting Star Award, BMES Cellular and Molecular Bioengineering conference
- 2016 Biomedical Engineering Graduate Group Outstanding Graduate Student Award, University of California, Davis

PEER REVIEWED PUBLICATIONS *

1. Cadena I, Chen A, Arvidson A, **Fogg KC**. Biomaterial strategies to replicate gynecological tissue. *Biomater Sci*. 2020 Nov 24. doi: 10.1039/d0bm01240h. Online ahead of print.
2. **Fogg KC**, Renner C, Christian H, Walker A, Marty-Santos L, Khan A, Olson W, Parent C, O’Shea A, Wellik D, Weisman PS, Kreeger PK. Ovarian cancer cells have increased proliferation in response to HB-EGF as collagen density increases. *Tissue Eng Part A*. 2020 Jun 25. doi: 10.1089/ten.tea.2020.0001. Online ahead of print.
3. **Fogg KC**, Olson WR, Miller JN, Khan A, Renner C, Hale I, Weisman PS, Kreeger PK. Alternatively activated macrophage-derived secretome stimulates ovarian cancer spheroid spreading through a JAK2/STAT3 pathway. *Cancer Lett*. 2019 Aug 28;458:92-101.

4. Vorwald CE, **Murphy KC**, Leach JK. Restoring vasculogenic potential of diabetic endothelial cells through spheroid formation. *Cell Mol Bioeng*. 2018 Aug;11(4):267-278.
5. Carroll MJ, **Fogg KC**, Patel HA, Krause HB, Mancha AS, Patankar MS, Weisman PS, Barroilhet L, Kreeger PK. Alternatively activated macrophages upregulate mesothelial expression of P-selectin to enhance adhesion of ovarian cancer cells. *Cancer Res*. 2018 Jul 1;78(13):3560-3573.
6. **Murphy KC**, Whitehead J, Zhou D, Ho SS, Leach JK. Engineering fibrin hydrogels to promote the wound healing potential of mesenchymal stem cell spheroids. *Acta Biomater*. 2017 Dec;64:176-186.
7. **Murphy KC**, Whitehead J, Falahee P, Zhou D, Simon SI, Leach JK. Multifactorial experimental design to optimize the anti-inflammatory and proangiogenic potential of mesenchymal stem cell spheroids. *Stem Cells*. 2017 Jun;35(6):1493-1504.
8. **Murphy KC**, Hung BP, Browne-Bourne S, Zhou D, Yeung J, Genetos DC, Leach JK. Measurement of oxygen tension within mesenchymal stem cell spheroids. *J R Soc Interface*. 2017 Feb;14(127).
9. **Murphy KC**, Hoch AI, Harvestine JN, Zhou D, Leach JK. Mesenchymal stem cell spheroids retain osteogenic phenotype through $\alpha_2\beta_1$ signaling. *Stem Cells Transl Med*. 2016 Sep;5(9):1229-37.
10. Ho SS, **Murphy KC**, Binder BY, Vissers CB, Leach JK. Investigating the effect of RGD-modified alginate hydrogels as carriers for mesenchymal stem cell spheroids. *Stem Cells Transl Med*. 2016 Apr 7. 2016 Jun;5(6):773-81.
11. **Murphy KC**, Stilhano RS, Mitra D, Zhou D, Batarni S, Silva EA, Leach JK. Hydrogel biophysical properties instruct co-culture-mediated osteogenic potential. *FASEB J*. 2016 Jan;30(1):477-86.
12. **Murphy KC**, Hughbanks ML, Binder BY, Vissers CB, Leach JK. Engineered fibrin gels for parallel stimulation of mesenchymal stem cell proangiogenic and osteogenic potential. *Ann Biomed Eng*. 2015 Aug;43(8):2010-21.
13. **Murphy KC**, Morgan JT, Wood JA, Sadeli A, Murphy CJ, Russell P. The formation of cortical actin arrays in human trabecular meshwork cells in response to cytoskeletal disruption. *Exp Cell Res*. 2014 Oct 15;328(1):164-71.
14. **Murphy KC**, Fang SY, Leach JK. Human mesenchymal stem cell spheroids in fibrin hydrogels exhibit improved cell survival and potential for bone healing. *Cell Tissue Res*. 2014;357:91-99
15. **Murphy KC**, Davis HE, Leach JK. Fibrin gels as cell-instructive substrates for regenerative medicine. *MRS Proceedings*. 2014 MRS Spring Meeting.
16. Textor JA, **Murphy KC**, Leach JK, Tablin F. Ultrastructure and growth factor content of equine platelet-rich fibrin gels. *Am J Vet Res*. 2014;75:392-401.
17. Decaris M, **Murphy KC**, Leach JK. Stem cells and bone regeneration. *Tissue and Organ Regeneration: Advances in Micro and Nanotechnology*. Singapore: Pan Stanford Publishing Pte Ltd. 2013.
18. Tocce EJ, Liliensiek SJ, Broderick AH, Jiang Y, **Murphy KC**, Murphy CJ, Lynn DM, Nealey PF. The influence of biomimetic topographical features and the extracellular matrix peptide RGD on human corneal epithelial contact guidance. *Acta Biomater*. 2013;9:5040-5051.
19. **Murphy KC**, Leach JK. A reproducible, high throughput method for fabricating fibrin gels. *BMC Res Notes*. 2012;5:423.
20. Morales-Hernandez DG, Genetos DC, Working DM, **Murphy KC**, Leach JK. Ceramic identity contributes to mechanical properties and osteoblast behavior on macroporous composite scaffolds. *J Funct Biomater*. 2012;3:382-397.
21. Tocce EJ, Broderick AH, **Murphy KC**, Liliensiek SJ, Murphy CJ, Lynn DM, Nealey PF. Functionalization of reactive polymer multilayers with RGD and an antifouling motif: RGD density provides control over human corneal epithelial cell-substrate interactions. *J Biomed Mater Res A*. 2012;100:84-93.

PRESENTATIONS

1. **Fogg KC**. Engineering high throughput screening platforms of gynecological cancer. *HP invited talk*. May 2021.
2. **Fogg KC**. Characterizing the extracellular matrix transcriptome of cervical, endometrial, and uterine cancers. *OHSU Knight Cancer Research Group Seminar Series*. May 2021.
3. **Fogg KC**. Engineering high throughput screening platforms of cervical cancer. *CU Boulder*. April 2021.
4. **Fogg KC**. Engineering and systems biology strategies for investigating macrophage-cancer cross-talk. *OSU Pharmacy Seminar Series*. January 2020.
5. **Fogg KC**. Engineering and systems biology strategies for investigating macrophage-cancer cross-talk. *OHSU Knight Cancer Research Group Seminar Series*. October 2019.
6. **Fogg KC**, Olson W, Kreeger PK. Alternatively activated macrophage secretome modulates metastatic potential of ovarian cancer cells. *2018 Biomedical Engineering Society Annual Meeting*. Atlanta, GA. October 2018.

7. **Fogg KC**, Miller AE, Li Y, Kendzierski C, Kreeger PK. Ovarian cancer cells direct macrophage differentiation and polarization to a pro-tumorigenic phenotype through non-canonical pathways. *2018 Biomedical Engineering Society Annual Meeting*. Atlanta, GA. October 2018.
8. **Fogg KC**, Olson W, Miller J, Kreeger PK. Alternatively activated macrophage secretome modulates metastatic potential of ovarian cancer cells. *12th Biennial Ovarian Cancer Research Symposium*. Seattle, WA. September 2018.
9. **Fogg KC**, Miller AE, Olson W, Kreeger PK. Activated macrophage-derived HB-EGF and extracellular matrix stiffening promote the expansion of ovarian cancer spheroids. *2018 Biomedical Engineering Society - Cell and Molecular Bioengineering*. Key Largo, FL. January 2018.
10. Vorwald CE, **Murphy KC**, Leach JK. Restoring the vasculogenic potential of diabetic endothelial cells through spheroid formation. *2017 Biomedical Engineering Society Annual Meeting*. Phoenix, AZ. October 2017.
11. **Murphy KC**, Whitehead J, Leach JK. Engineered fibrin vehicles to drive wound healing potential of mesenchymal stem cell spheroids. *2017 Biomedical Engineering Society Annual Meeting*. Phoenix, AZ. October 2017.
12. **Murphy KC**, Falahee P, Simon S, Leach JK. Optimizing spheroidal culture of mesenchymal stromal cells to enhance wound healing potential. *2015 Biomedical Engineering Society Annual Meeting*. Tampa, FL. October 2015.
13. **Murphy KC**, Leach JK. Human mesenchymal stem cell spheroids in fibrin hydrogels exhibit improved cell survival and potential for bone healing. *2014 Biomedical Engineering Society Annual Meeting*. San Antonio, TX. October 2014.
14. **Murphy KC**, Leach JK. Tailoring biophysical properties of fibrin gels for bone formation with co-cultured progenitor cells. *2013 Biomedical Engineering Society Annual Meeting*. Seattle, WA. September 2013.
15. **Murphy KC**, Fang SY, Leach JK. Human mesenchymal stem cell spheroids in fibrin hydrogels exhibit improved cell survival and potential for bone healing. *UC Systemwide Bioengineering Symposium*. San Diego, CA. June 2013.
16. **Murphy KC**, Biegler K, Ploeg H. The design and finite element analysis of biomimetic bone scaffolds. *14th Annual Symposium on Computational Methods in Orthopaedic Biomechanics*. Chicago, IL. March 2006.

PATENTS

1. Carroll MJ, **Fogg KC**, Kreeger PK. Methods of inhibiting metastasis in cancer. Provisional Patent Number P180025US01. January 25, 2018.
2. Murphy CJ, **Murphy KC**, Wisner E, Doval J, Mannis M. Implanting oversized objects into surgical beds. Patent Number WO 2013081943 A1. June 6, 2013.

TEACHING EXPERIENCE

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|----------------|---|
| 2020 – present | BIOE 340, Energy Balances |
| 2020 – present | CBEE 212, Biomedical Engineering Principles |

UNIVERSITY SERVICE

- | | |
|----------------|---|
| 2019 – present | Faculty advisor, BMES Student Chapter, Oregon State University |
| 2019 – present | Faculty advisor, Faculty Student Mentoring Program, Oregon State University |
| 2019 – present | Bioengineering graduate recruitment committee, Oregon State University |
| 2019 – present | Bioengineering undergraduate curriculum committee, Oregon State University |
| 2018 – 2019 | Chair, Cell and Regenerative Biology Seminar Planning Committee, UW Madison |
| 2016 – 2017 | Member, Tumor Microenvironment Seminar Planning Committee, UW Madison |
| 2015 – 2016 | Biomedical Engineering Graduate Student Association (BESA) Program Advising Chair, UC Davis |
| 2013 – 2016 | Mentor, BESA Mentor/Mentee Program, UC Davis |
| 2013 – 2016 | Member, BESA Alumni Seminar Series Search Committee, UC Davis |

PROFESSIONAL SERVICE

Journal Reviews

1. *Biotechnology and Bioengineering*
2. *AAAS Science Advances*
3. *Cellular and Molecular Bioengineering*
4. *Journal of Immunology*
5. *Acta Biomaterialia*

Conference Service

1. Biomaterials. BMES Annual Meeting. Reviewer. 2021.
2. Engineering Women's Health. BMES Annual Meeting. Co-Chair. 2020.
3. Cancer technologies. BMES Annual Meeting. Reviewer and Co-Chair. 2020.
4. Biomaterials. BMES Annual Meeting. Reviewer. 2020.
5. Women in Chemical Engineering Predoctoral Awards. AIChE Annual Meeting. Reviewer. 2020.
6. Women in Chemical Engineering Predoctoral Awards. AIChE Annual Meeting. Reviewer. 2019.

PROFESSIONAL MEMBERSHIPS

2018 – present	Member, American Institute of Chemical Engineers (AIChE)
2013 – present	Member, Biomedical Engineering Society (BMES)
2012 – 2016	Member, American Heart Association