

Erika Moore, Ph.D.

Rhines Rising Star Assistant Professor of Materials Science and Engineering
 University of Florida, Materials Science and Engineering
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My background over the last 10 years has focused on immunology, materials science, and tissue engineering for regenerative medicine. My lab's research emphasis is on the role of the immune system in tissue regeneration utilizing polymer-based hydrogels. We are experts in assessing immune cell response to and role in vasculogenesis in tissue-engineered hydrogels. To promote successful clinical translation of biomaterials, the goal of the Moore Lab is to leverage immunology for the design and modeling of immune-interactions during tissue development.

As a black woman, I am also a passionate advocate for minorities in STEM fields. I am the co-founder of #BlackInBME, a group organized to offer support to black trainees and faculty in biomedical engineering. I also created the peer mentoring program, Engineering a Community, that paired minorities with mentors to increase STEM retention in the Pratt College of Engineering at Duke University during my PhD. I also became the first African American woman elected as graduate and professional student Young Trustee on the Duke University Board of Trustees.

EMPLOYMENT HISTORY

July 2020 – Present	Rhines Rising Star Assistant Professor Materials Science and Engineering, University of Florida Affiliate Appointments: Department of Biomedical Engineering
Aug. 2018 – June 2020	Provost's Post-Doctoral Fellow Department of Biomedical Engineering, The Johns Hopkins University Advisor: Dr. Jennifer H. Elisseeff
May 2017- Aug. 2017	Graduate Intern Department of Immuno-oncology, Amgen Inc.
Sept. 2009 – Aug. 2010	Undergraduate Researcher Department of Biomedical Engineering, Johns Hopkins University Advisor: Warren Grayson
Apr. 2007 – Aug. 2008	Undergraduate Researcher Department of Chemical Engineering, University of Calgary

AWARDS AND HONORS

2021	Invited Speaker , National Academies of Sciences, Engineering, and Medicine's Forum on Regenerative Medicine
2021	Emerging Leaders Forum , National Academy of Medicine
2020	Rising Star , 1000 Black Scientist in the U.S., Cell Reports
2020	Forbes 30 Under 30 , Class of 2021- Healthcare, Forbes Selected as 1 of 30 honorees In the United States
2018	Rhines Family Rising Star Professorship , The University of Florida Endowed assistant professorship
2018	Provost's Postdoctoral Fellowship , The Johns Hopkins University
2018	Biomedical Engineering Award for Outstanding Doctoral Dissertation , Duke

University, Department of Biomedical Engineering

- 2017 M.I.T. Rising Star, M.I.T. Rising Stars in Biomedical Engineering and Science
- 2017 Graduate Young Trustee, Duke University Board of Trustees
First African American woman elected as Graduate Young Trustee
- 2013 **National Science Foundation Graduate Research Fellow**, National Science Foundation
- 2013 **Pre-doctoral Ford Foundation Fellow** (awarded but declined), Ford Foundation Fellowship Program
- 2012 U.N.C.F./Merck Undergraduate Research Fellowship, Unite Negro College Fund/Merck Science Initiative
Fellowship of \$25,000 and internship at Merck Inc.
- 2009 Hodson-Gilliam Success Scholar, Biomedical Engineering, The Johns Hopkins University
Scholarship which covers ~2/3rd of tuition costs

PEER-REVIEWED JOURNAL PUBLICATIONS (abbreviated selection)

Google Scholar Profile: <https://scholar.google.com/citations?user=M57XI9oAAAAJ&hl=en>

- Han J, Cherry C, Ruta A, Maestas D, Mejias J, Nguyen H, Fertig E, Housseau F, Ganguly S, **Moore E**, Tam A, Pardoll D, Elisseeff J. Age-related Immune-Stromal Networks Inhibit Response to Regenerative Immunotherapies. 2021/01; :2021.08.17.456641. doi: 10.1101/2021.08.17.456641.
- Ludtka, C., **Moore, E.**, Allen, J.B. The Effects of Simulated Microgravity on Macrophage Phenotype. Biomedicines 2021, 9, 1205. <https://doi.org/10.3390/biomedicines9091205>
- Ludtka C, **Moore E**, Allen JB. The Effects of Simulated Microgravity on Macrophage Phenotype. Biomedicines. 2021; 9(9):1205. <https://doi.org/10.3390/biomedicines9091205>
- **Moore, Erika**. "The more mentors, the merrier." Science (New York, NY) 371.6536 (2021): 1398-1398.
 - o *Invited commentary on the importance of mentoring for minorities in science.*
- **Moore, Erika M.**, D. R. Maestas, C. C. Cherry, J. A. Garcia, H. Y. Comeau, L. D. Huyer, R. L. Blosser, G.D. Rosson, J. H. Elisseeff, Biomaterials direct functional B cell response in a material specific manner , bioRxiv, in press, doi:10.1101/2021.01.12.426347.
- Silberman, J., Jha A., Ryan H., Abbate, T., and **Moore, E.**, Modeled vascular microenvironments: immune-endothelial cell interactions in vitro. Drug Deliv. and Transl. Res. (2021). <https://doi.org/10.1007/s13346-021-00970-1>
- Ludtka, C., Silberman, J., **Moore, E.**, and Allen, J. Macrophages in microgravity: the impact of space on immune cells. npj Microgravity 7, 13 (2021). <https://doi.org/10.1038/s41526-021-00141-z>
- **Moore, Erika M.**, and J. L. West. "Harnessing Macrophages for Vascularization in Tissue Engineering." Annals of biomedical engineering 47.2 (2019): 354-365.
- **Moore, E. M.**, and J. L. West. "Bioactive Poly (ethylene Glycol) Acrylate Hydrogels for Regenerative Engineering." Regenerative Engineering and Translational Medicine (2018): 1-13.
- **Moore, E. M.**, Suresh, V., Ying, G. and J. L. West. "M0 and M2 macrophages enhance vascularization of tissue engineering scaffolds." Regenerative Engineering and Translational Medicine 4, no. 2 (2018): 51-61.
- **Moore, Erika M.**, Grace Ying, and J. L. West. "Macrophages influence vessel formation in 3D bioactive hydrogels." Advanced Biosystems 1.3 (2017): 1600021.

- Nsiah, B. A., **Moore, E. M.**, Roudsari, L. C., Virdone, N. K., and West, J. L. "Angiogenesis in hydrogel biomaterials." *Biosynthetic Polymers for Medical Applications*. Woodhead Publishing, 2016. 189-203.
- Peters, Erica B., N. Christoforou, **Moore, E.**, West, J L., and Truskey, G. A. "CD45+ cells present within mesenchymal stem cell populations affect network formation of blood-derived endothelial outgrowth cells." *BioResearch open access* 4, no. 1 (2015): 75-88.
- Hutton, D.L., Kondragunta, R., Moore, E.M., Hung, B.P., Jia, X., & Grayson, W.L. Tumor Necrosis Factor Improves Vascularization in Osteogenic Grafts Engineered with Human Adipose-Derived Stem/Stromal Cells. *PLoS one*. 9(9): e107199. 2014.
- Hutton DL, Logsdon EA, **Moore EM**, Mac Gabhann F, Gimble JM, Grayson WL. Vascular morphogenesis of adipose-derived stem cells is mediated by heterotypic cell-cell interactions. *Tissue Eng Part A*. 2012 Aug;18(15-16):1729-40. doi: 10.1089/ten.tea.2011.0599. Epub 2012 May 9. PubMed PMID: 22462659; PubMed Central PMCID: PMC3419853.
- Kim JJ, Buchbinder N, Ammanuel S, Kim R, **Moore E**, O'Donnell N, Lee JK, Kulikowicz E, Acharya S, Allen RH, Lee RW, Johnston MV. Cost-effective therapeutic hypothermia treatment device for hypoxic ischemic encephalopathy. *Med Devices (Auckl)*. 2013;6:1-10. doi: 10.2147/MDER.S39254. Epub 2013 Jan 3. PubMed PMID: 23319871; PubMed Central PMCID: PMC3540914.
- Hutton DL, **Moore EM**, Gimble JM, Grayson WL. Platelet-derived growth factor and spatiotemporal cues induce development of vascularized bone tissue by adipose-derived stem cells. *Tissue Eng Part A*. 2013 Sep;19(17-18):2076-86. doi: 10.1089/ten.TEA.2012.0752. Epub 2013 May 17. PubMed PMID: 23582144; PubMed Central PMCID: PMC3725877.

MANUSCRIPTS IN PREPARATION

- **Moore, E.**, Allen, J, Mulligan, C, and Wayne, E. "Let's Talk About Race: A call to Report Ancestry in In Vitro Models"; Invited submission for *Nature Reviews Materials*, Resubmission in Sept. 2021.
- Jha, A. and Moore, E. "Collagen-derived peptide, DGEA, inhibits pro-inflammatory macrophages in biofunctional hydrogels", *Journal of Materials Research*, Revision submitted in Sept. 2021.
- Silberman, J. and Moore, E. "A model of Aging: Interrogating monocyte contribution to vascular development," CTO, invited submission, to be submitted Oct. 2021

PRESENTATIONS

INVITED PRESENTATIONS, SEMINARS, CONFERENCE PROCEEDINGS (PODIUM)

1. **Moore EM**. Leveraging Biomaterials for Immune Cell Tuning and Disease Modeling. BMES 2021. Invited keynote speaker for Session.
2. **Moore EM**. Manipulating Immune Cells for Tissue (re)Generation. N.I.H. National Institute of Aging. April 2021.
3. **Moore EM**. Manipulating Immune Cells for Tissue (re)Generation. Howard University. February 2021.
4. **Moore EM**, Maestas DR, Comeau, HY, Elisseeff, JH. Biomaterials alter the B cell response in injury. Biomedical Engineering Society. October 2020.
5. **Moore EM**. Manipulating Immune Cells for Tissue (re)Generation. AfroBiotech Conference. October 2019.

6. **Moore EM.** Immune-informed biomaterial design. Bowie State University, Department of Natural Sciences. September 2019.
7. **Moore EM.** Immune-informed biomaterial design. University of Maryland, Department of Biomedical Engineering. September 2019.
8. **Moore EM.** Utilizing Poly(ethylene glycol)-based Hydrogels to Manipulate Immune Cells in Vessel Development. National Institute on Aging. June 2019.
9. **Moore EM.** Utilizing Poly(ethylene glycol)-based Hydrogels to Manipulate Immune Cells in Vessel Development. Future Research Leaders Conference of the National Institutes of Health. May 2019.
10. **Moore EM.** Utilizing Poly(ethylene glycol)-based Hydrogels to Manipulate Immune Cells in Vessel Development. Johns Hopkins Biomedical Engineering Seminar Series. Nov 2018.
11. **Moore EM, West JL.** A Reductionist PEG-based System to Elucidate the Role of Macrophages in Vascular Development. World Biomaterials Congress. 2016. (Lecture)
12. **Moore EM, West JL.** Macrophages Effect Vessel Development when Encapsulated with Endothelial Cells in a 3D Biomimetic PEG-based Hydrogel. Biomedical Engineering Society. 2015.
13. **Moore EM, West JL.** Utilizing PEG Hydrogels to Investigate the Role of Macrophage Phenotype on Vascular Development. Society for Biomaterials. 2015.

CONFERENCE PROCEEDINGS (POSTER)

1. Ryan, H., Segal, M., Morel, L., **Moore, E.** Contribution of Ancestral Background to Monocyte Activation in Systemic Lupus Erythematosus. (Oct 2021). Biomedical Engineering Society Annual Meeting.
2. Silberman J., **Moore E.** Immune Cells from Elderly Patients Inhibit Vasculogenesis in Poly-Ethylene Glycol Hydrogels. (Oct 2021) Biomedical Engineering Society Annual Meeting.
3. Jha A, Ludtka C, Allen J, **Moore E.** Assessing endothelial cell response during vasculogenesis in microgravity. Biomedical Engineering Society Annual Meeting(Oct 2021).
4. Ryan, H., Segal, M, Morel, L., and **Moore, E.** Characterization of monocyte activation states in patients with systemic lupus erythematosus. Research Day- MD/PhD. University of Florida CTSI. May 2021.
5. Silberman, J., **Moore, E.** Biomaterial Effects on Macrophage-Endothelial Cell Interactions. Biomaterials Day. University of Florida. March 2021.
6. Ryan, H., **Moore, E.** Characterization of monocyte activation states in patients with systemic lupus erythematosus. Biomaterials Day. University of Florida. March 2021.
7. Jha, Aakanksha., **Moore, E.** Designing a biomaterial to stop macrophages from being inflammatory. Biomaterials Day. University of Florida. March 2021.
8. **Moore EM, Ying G, West JL.** Exploiting Macrophages for Vessel Development. TERMIS. Dec 2017.
*2017 TERMIS Student Scientist Award

UNIV OF CENTRAL FLORIDA SPACE INST

OR-DRPD-SRI2019: A 3D hydrogel model to assess endothelial cell-macrophage interactions in simulated microgravity

The proposal contained herein seeks to examine the effect of simulated microgravity on important cell-cell interactions that govern vascular health. Our interest lie in endothelial cell (EC) and macrophage cell interactions. We are proposing to first understand how microgravity effects the macrophage and EC function or pro-healing capabilities. Next, we plan to develop a 3D tissue regeneration model in which macrophages and ECs are co-cultured in a hydrogel matrix. Utilizing this model, we will assess how microgravity influenced macrophage-EC interactions in 3D. We will assess EC tubule volume (or blood vessel development), macrophage spreading and their interactions with endothelial tubule sprouts. This model will serve as a critical foundation for future grant opportunities as it allows the assessment of tissue regeneration and vascular health in a 3D tissue microenvironment.

Role: PI

Rhines Rising Star Larry Hench Professor Moore (Awardee) 7/1/2020 – present
University of Florida, Herbert Wertheim College of Engineering

This endowed professorship was created to recruit and retain premier junior faculty whose early career achievements have already begun to make a notable impact in their fields, as well as their engineering college departments. Dr. Moore is the first honoree from the Materials Science and Engineering department: <https://mse.ufl.edu/erika-moore-shines-as-a-rhines-rising-star-larry-hench-assistant-professor/>

Provost's Post-Doctoral Fellow Moore (Awardee) 7/1/2018- 6/30/2020
The Johns Hopkins University

This fellowship was created to "seek to locate, promote, and nurture the work of outstanding early career postdoctoral scholars at Johns Hopkins University". The program prepares participants for faculty positions in fields where there are fewer women or members of underrepresented minorities.

U.N.C.F./Merck Undergraduate Research Fellow Moore (Awardee) 5/1/2012- 5/1/2013
United Negro College Fund and Merck Inc.

This fellowship awarded \$25,000 as well as an internship at Merck Inc. This program was created to encourage African American undergraduate students in furthering their science education and pursuing biomedical science careers by providing tuition support and opportunities for research experience in a state-of-the-art industrial laboratory.

Teaching Experience

Biomaterials: Structure and Properties (EMA 4061) August 2021- December 2021
Department of Materials Science and Engineering, University of Florida

- 31 undergraduate student course, focused on basic biomaterial function and applications (with specific consideration for guest lectures including representatives from Sharklet Technologies, Amend Surgical, and United Therapeutics)

Biomaterials: Structure and Properties (EMA 4061) August 2020- December 2020
Department of Materials Science and Engineering, University of Florida

- 22 undergraduate student course, focused on basic biomaterial function, property and applications (with specific consideration for UF based discoveries such as bioglass)
- Student Evaluation: 5.00 (College of Engineering Average- 4.07)

Advanced Biomaterials (BME 590) January 2016- May 2016
Department of Biomedical Engineering, Duke University
Professor Jennifer L. West

Curriculum Vitae (as of 10/21)

Erika Moore

- Conducted recitation sessions and lectures in absence of course coordinator

Applied Math for Engineering (CEE 501)

January 2015- May 2015

Department of Civil and Environmental Engineering, Duke University

Professor Z.J. Kabala

- Teaching assistant for a class of 80 students; tutorial sessions of Mathematica to solve complex algorithms

Mentoring/Advising

Graduate Students:

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| 1. Justin Silberman, PhD student, University of Florida | Feb 2020- Present |
| 2. Holly Ryan, MD/PhD student, University of Florida | July 2020- Present |
| 3. Aakanksha Jha, PhD student, University of Florida | July 2020- Present |
| 4. Hannah Y. Comeau, MS Student, Johns Hopkins University | Jan 2019- June 2020 |
| 5. Jithakrishna Prakash, MS Student, University of Florida | October 2021- Present |

Undergraduate Students:

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| 1. Talia Abbate, 2 nd year student, University of Florida | Feb 2020- Present |
| 2. Daniel Bister, 3 rd year student, University of Florida | Jan 2019- June 2020 |
| 3. Jessica Boehlein, 3 rd year student, University of Florida | Jan 2019- June 2020 |
| 4. Sophia Holliday, 3 rd year student, University of Florida | Jan 2019- June 2020 |
| 5. Grace Ying, 2 nd -4 th year, Duke University | Jan 2014- May 2016 |

Committee Service for Graduate Students:

- | | |
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| 1. PhD Committee: Adrienne E Widener, University of Florida | July 2021- Present |
| 2. PhD Committee: Juanpablo Olguin, University of Florida | June 2021- Present |
| 3. MS Committee: Heather Ursino, University of Florida | Jan 2020- Aug 2021 |

Professional Service Positions

- 2019 Member, American Institute of Chemical Engineers
- 2018 National Science Foundation Graduate Research Fellowship Panelist, N.S.F. GRFP
- 2017 *Trustee, Duke University Board of Trustees (end of term June 2019)*
- 2016 Member, Biomedical Engineering Society (BMES) Diversity Committee
- 2015 Founder, Engineering a Community (mentoring program), Pratt School of Engineering
- 2014 Member, National Society of Black Engineers

Selected Media Highlights

- July 28th, 2021: Congratulations to Holly for being awarded the UF-FIU research fellowship. Check out the press release here: UF and FIU tackling Lupus through Innovative Partnership.
 - <https://mse.ufl.edu/uf-fiu-lupus-partnership/>
- April 20th, 2021: UF Highlights the Moore Lab in a cool video! Check out the video here: <https://twitter.com/UF/status/1384581333872103425?s=20> . \
 - Link to YouTube: <https://www.youtube.com/watch?v=a9Zpl9NSsm4>
- December 2020: Read Dr Moore's chat with Gator Nation News after being named to Forbes magazine's

30 Under 30 health care experts to watch in 2021: A “RISING STAR’ SHINES IN FORBES

- https://www.uff.ufl.edu/gatornation/a-rising-star-shines-in-forbes/?utm_source=gnn&utm_medium=email&utm_campaign=gnn213&scid=
- Forbes 30 Under 30 Profile: <https://www.forbes.com/profile/erika-moore/?sh=773b06dd3e76>
- October 26, 2018: Read about Dr. Moore’s position and the goals of the Moore Lab! Dr Moore was interviewed about her position at UF!
 - <https://mse.ufl.edu/erika-moore-shines-as-a-rhines-rising-star-larry-hench-assistant-professor/>