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Assistant Professor of Chemical Engineering
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Education

2014 - 2021: Ph.D., Chemical Engineering, Auburn University, Auburn, AL, USA
2010 - 2012: M.Sc., Chemical Engineering, Sharif University of Technology, Tehran, Iran
2006 - 2010: B.Sc., Chemical Engineering, Persian Gulf University, Bushehr, Iran

Research and Professional Experience

2023 – Present: Assistant Professor of Chemical Engineering, Tuskegee University, Tuskegee, AL 36088
2021 – 2022: Postdoc Fellow, Johns Hopkins University School of Medicine, Baltimore, MD
2014 – 2021: Graduate Research Assistant, Department of Chemical Engineering, Auburn University, Auburn, AL
2014 – 2021: Graduate Teaching Assistant, Department of Chemical Engineering, Auburn University, Auburn, AL
2011 – 2012: Graduate Research Assistant, Department of Chemical Engineering, Sharif University of Technology, Tehran, Iran
2008 – 2010: Teaching Assistant, College of Engineering, Persian Gulf University, Bushehr, Iran

Research Interests

Biomaterials, Biomimetic Materials, Tissue Engineering, Cancer, Metastasis, Cancer-on-a-Chip Platforms, Patient-Derived Xenograft, Vascularization, Heart Tissue Engineering, iPSC Cardiac Differentiation, Adipose-derived MSCs, Adipocytes

Publications – Peer-Reviewed Journals

1. **I. Hassani**, B. Anbiah, A.L. Moore, P.T. Abraham, I.A. Odeniyi, N.L. Habbitt, M.W. Greene, E.A. Lipke, Establishment of a tissue-engineered colon cancer model for comparative analysis of cancer cell lines, *Journal of Biomedical Materials Research Part A*, (2023) DOI:10.1002/jbm.a.37611
2. N.L. Habbitt, B. Anbiah, J. Suresh, L. Anderson, M.L. Davies, **I. Hassani**, T.M. Ghosh, M.W. Greene, B. Prabhakarandian, R.D. Arnold, E.A. Lipke, Ratiometric inclusion of fibroblasts promotes both castration-resistant and androgen-dependent tumorigenic progression in engineered prostate cancer tissues, *Advanced Healthcare Materials*, (2023) DOI: 10.1002/adhm.202301139

3. **I. Hassani**, B. Anbiah, P. Kuhlers, N.L. Habbitt, B. Ahmed, M.J. Heslin, J.A. Mobley, M.W. Greene, E.A. Lipke, Engineered colorectal cancer tissue recapitulates key attributes of a patient-derived xenograft tumor line, *Biofabrication*. 14 (2022) 045001. DOI: 10.1088/1758-5090/ac73b6.
4. N.L. Habbitt, B. Anbiah, L. Anderson, J. Suresh, **I. Hassani**, M. Eggert, A. Brannen, J. Davis, Y. Tian, B. Prabhakarpanthian, P. Panizzi, R.D. Arnold, E.A. Lipke, Tunable three-dimensional engineered prostate cancer tissues for in vitro recapitulation of heterogeneous in vivo prostate tumor stiffness, *Acta Biomater*. 147 (2022) 73–90. DOI: 10.1016/j.actbio.2022.05.011.
5. **I. Hassani**, B. Anbiah, B. Ahmed, N.L. Habbitt, M.W. Greene, E.A. Lipke, In vitro recapitulation of in vivo obesity-promoted colorectal cancer growth using a patient-derived xenograft engineered tumor model, *Cancer Res*. 79 (2019) 2844. DOI: 10.1158/1538-7445.AM2019-2844.
6. S. Pradhan, A.M. Smith, C.J. Garson, **I. Hassani**, W.J. Seeto, K. Pant, R.D. Arnold, B. Prabhakarpanthian, E.A. Lipke, A Microvascularized Tumor-mimetic Platform for Assessing Anti-cancer Drug Efficacy, *Sci. Rep.* 8 (2018) 3171. DOI: 10.1038/s41598-018-21075-9.
7. S. Pradhan, **I. Hassani**, W.J. Seeto, E.A. Lipke, PEG-fibrinogen hydrogels for three-dimensional breast cancer cell culture, *J. Biomed. Mater. Res. A*. 105 (2017) 236–252. DOI: 10.1002/jbm.a.35899.
8. S. Pradhan, **I. Hassani**, J.M. Clary, E.A. Lipke, Polymeric biomaterials for in vitro cancer tissue engineering and drug testing applications, *Tissue Eng. Part B Rev.* 22 (2016) 470–484. DOI: 10.1089/ten.TEB.2015.0567.

Publications – Peer-Reviewed Conference Proceedings

1. **I. Hassani**, B. Anbiah, N. Habbitt, B. Ahmed, M.W. Greene, E. Lipke, Tissue Engineered Cancer Models for Recapitulating the Tumor Microenvironment, *AIChE*, 2019.
2. **I. Hassani**, B. Anbiah, B. Ahmed, N.L. Habbitt, M.W. Greene, E.A. Lipke. 3D Engineered Patient-Derived Xenograft Tumors to Recapitulate the Obese Colorectal Cancer Tumor Microenvironment, *Transactions of the 42nd Annual Meeting of the Society For Biomaterials*. 2019; 40:501.
3. B. Anbiah, **I. Hassani**, N.L. Habbitt, R.D. Arnold, B. Prabhakarpanthian, E.A. Lipke. High and Low Perfusion Microvascular Breast Tumor Mimetic Chip for Anti-Cancer Drug Screening, *Transactions of the 42nd Annual Meeting of the Society For Biomaterials*. 2019; 40:1066.
4. N. Habbitt, B. Anbiah, L. Anderson, J. Suresh, **I. Hassani**, M. Eggert, S. Jasper, B. Prabhakarpanthian, R. Arnold, E. Lipke. Microfluidic Prostate Tumor-on-a-Chip Model for *in vitro* Recapitulation of the Tumor Microenvironment, *Transactions of the 42nd Annual Meeting of the Society For Biomaterials*. 2019; 40:506.

5. **I Hassani**, B Anbiah, B Ahmed, NL Habbitt, MW Greene, EA Lipke. Three-Dimensional Engineered Tumor Tissues Using Patient-Derived Colorectal Cancer Xenografts, Transactions of the 41st Annual Meeting of the Society For Biomaterials. 2018; 39:166.
6. B Anbiah, **I Hassani**, NL Habbitt, S Jasper, M Egghert, B Prabhakarparandian, RD Arnold, EA Lipke. 3D *in vitro* Recapitulation of the Native Breast Tumor Microenvironment in a Vascularized Tumor Mimetic Microfluidic Chip, Transactions of the 41st Annual Meeting of the Society For Biomaterials. 2018; 39:457.
7. NL Habbitt, B Anbiah, **I Hassani**, M Eggert, S Jasper, B Prabhakarparandian, RD Arnold, EA Lipke. *In Vitro* Bioengineered Prostate Tumor Model for Recapitulation of the Native Tumor Microenvironment, Transactions of the 41st Annual Meeting of the Society For Biomaterials. 2018; 39:165.
8. S Pradhan, AM Smith, CJ Garson, **I Hassani**, K Pant, RD Arnold, B Prabhakarparandian, EA Lipke Microfluidic cancer-on-a-chip platform for assessing anti-cancer drug efficacies, AACR 107th Annual Meeting. 2016.

Teaching Experience

- 2024-Present **Instructor**, Fluid Mechanics, Tuskegee University, Tuskegee, AL
- 2023-Present **Instructor**, Heat Transfer, Tuskegee University, Tuskegee, AL
- 2023-Present **Instructor**, Thermodynamics I, Tuskegee University, Tuskegee, AL
- 2023-Present **Instructor**, Thermodynamics II, Tuskegee University, Tuskegee, AL
- 2023-Present **Instructor**, Process Control and Instrumentation, Tuskegee University, Tuskegee, AL
- 2023-Present **Instructor**, Process Control and Instrumentation Laboratory, Tuskegee University, Tuskegee, AL
- 2022, **Guest Lecturer**, Microphysiological Systems and Laboratory, Johns Hopkins University School of Medicine, Baltimore, MD
- 2021 **Lecturer**, Application of Math Techniques, Department of Chemical Engineering, Auburn University, Auburn, AL
- 2019: **Guest Lecturer**, Chemical Engineering Analysis, Chemical Engineering, Auburn University, Auburn, AL
- 2014 – 2021 **Teaching Assistant**, Department of Chemical Engineering, Auburn University, Auburn, AL
- Biomedical Engineering (Graduate student)
 - Process Equipment and Plant Cost (Sophomore class)
 - Phase and Reaction Equilibria (Sophomore class)
- 2008 – 2010 **Teaching Assistant**, Department of Engineering, Persian Gulf University, Bushehr, Iran,

- Process Control (Senior class)
- Unit Operations (Senior class)
- Chemical Reaction Engineering (Senior class)
- Engineering Mathematics (Senior class)
- Fundamentals of Electricity I (Sophomore class)

National Conference Presentations

1. **I. Hassani**, B. Anbiah, N.L. Habbit, B. Ahmed, M.W. Greene, E.A. Lipke, Tissue Engineered Cancer Models for Recapitulating the Tumor Microenvironment, 2019 AIChE Annual Meeting, Orlando, FL, November 2019 **(by invitation)**
2. **I Hassani**, B Anbiah, B Ahmed, NL Habbit, MW Greene, EA Lipke. Engineered Colorectal Cancer Model Employing Patient-Derived Xenografts Mimics *In Vivo* Tumor Growth. Biomedical Engineering Society 2018 Annual Meeting, Atlanta, GA, October 2018.
3. B Anbiah, **I Hassani**, NL Habbit SL Jasper, M Eggert, RD Arnold, B Prabhakarpanthian, EA Lipke. An *In Vitro* Breast Tumor Mimetic Microfluidic Chip to Evaluate the Anti-cancer Drug Efficacies. Biomedical Engineering Society 2018 Annual Meeting, Atlanta, GA, October 2018.
4. NL Habbit, B Anbiah, **I Hassani**, M Eggert, SL Jasper, B Prabhakarpanthian, RD Arnold, EA Lipke. Engineered Prostate Tumor-on-a-Chip Model for *in vitro* Recapitulation of the Tumor Microenvironment. Biomedical Engineering Society 2018 Annual Meeting, Atlanta, GA, October 2018.
5. MW Greene, EA Lipke, B Ahmed, **I Hassani**, B Anbiah, AM O'Neill, and NL Habbit. Obesity stimulates tumor growth in a novel paired *in vitro* and *in vivo* model using patient-derived colorectal cancer xenografts, AACR Obesity and Cancer: Mechanisms Underlying Etiology and Outcomes, Austin, TX, January 2018.
6. S Pradhan, KA Keller, **I Hassani**, WJ Seeto, B Prabhakarpanthian, EA Lipke, JH Slater. Bioengineering the Tumor Microenvironment for Implementation of Anti-Cancer Drug Testing Platforms. Gordon Research Conference (Biomaterials and Tissue Engineering) 2017, Holderness, NH, 2017
7. S Pradhan, AM Smith, **I Hassani**, K Henderson, RD Arnold, B Prabhakarpanthian, EA Lipke. Three-dimensional Vascularized Tumor-fibroblast Co-culture Platform for Drug-testing Applications, Biomedical Engineering Society 2015 Annual Meeting, Tampa, FL, 2015.

Reviewer for Scientific Journals and Proposals

NSF's proposal review panel
 Applied Physics Letters
 APL Bioengineering

Professional Membership

Tuskegee University Center for Biomedical Research/Research Centers in Minority Institutions (TU CBR/RCMI) (2024-Present)

Biomedical Engineering Society (BMES) (2018-Present)

Society for Biomaterials (SFB) (2018-Present)

American Association for Cancer Research (AACR) (2018-Present)

Auburn University Research Initiative in Cancer (AURIC) (2015-Present)