

CURRICULUM VITAE: Yoseph Warren Dance

Boston University
Department of Biomedical Engineering
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Boston, MA 02215
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Born July 4, 1995 in Houston, TX

EDUCATION AND TRAINING

- 2017-present Boston University
Ph.D., biomedical engineering (2022, expected)
- 2017-2020 Boston University
M.S., biomedical engineering
- 2013-2017 Drexel University, Pennoni Honors College, GPA 3.74
B.S., biomedical engineering, biomaterials and tissue engineering concentration

HONORS AND AWARDS

NIH/NCI CURE Supplement Program (U01 CA214292S1; 2019-present), NIH/NIGMS Training Program in Quantitative Biology & Physiology (T32 GM008764; 2017-present), Drexel University AJ Drexel Scholarship (2013-2017), Drexel University Dean's List (2013-2017), Colonial Athletic Association Commissioner's Academic Award (2014, 2015, 2016, 2017), CAA All-Academic Golf Team (2015, 2016, 2017), *Philadelphia Inquirer* Academic All-Area Men's Golf Performer of the Year (2017), Cleveland Golf/Srixon D1 All-American Scholar (2016), Drexel University Athletics: *I Am a Dragon Award* (2016), Drexel University Student-Athlete Advisory Committee Service Award (2016), *Philadelphia Inquirer* Academic All-Area Men's Golf Team (2015, 2016), AP Scholar with Distinction (2013)

EXPERIENCE

- Boston University Boston, MA
Graduate Researcher with Prof. Joe Tien May 2018 to Present
(Dept. of Biomedical Engineering)
• Three-dimensional *in vitro* models of breast tumor invasion and escape
- Beth Israel Deaconess Medical Center Boston, MA
Rotation Graduate Researcher with Dr. Ramaswamy Krishnan April to May 2018
(Center for Vascular Biology Research)
• Elastic membrane synthesis, testing for biomechanical cell-stretching protocols
- Boston University Boston, MA
Rotation Graduate Researcher with Prof. Bela Suki January to March 2018
(Dept. of Biomedical Engineering)

- Bi-axial stretching, biochemistry, microscopy of human airway smooth muscle cells

Johnson & Johnson
Janssen Supply Chain Co-op
Technical Operations

Spring House, PA
March to September 2016

- Modeling and analysis of tablet dissolution profiles and process parameters
- Measurement of tablet near-infrared (NIR) spectra on Bruker: MPA
- Management of chemometric life cycle data, protocols, and reports
- Projection of lab freezer storage capacities for large molecule products
- Creation of a NIR calibration model database

RESEARCH INTERESTS

Microfluidics; breast cancer; obesity; regenerative medicine; pharmaceuticals

PUBLICATIONS

1. **Dance, Y.W.**, Obenreder, M.C., Seibel, A.J., Meshulam, T., Ogony, J.W., Lahiri, N., Radisky, D.C., Layne, M.D., Farmer, S.R., Nelson, C.M., and Tien, J., "Adipose cells, independently of obesity status, induce escape from an engineered human breast microtumor". In preparation.
2. Seibel, A.J., Kelly, O.M., **Dance, Y.W.**, Nelson, C.M., Tien, J., "Role of lymphatic endothelium in vascular escape of engineered human breast microtumors". Submitted to *Cell. Mol. Bioeng.*
3. Tien, J., **Dance, Y.W.**, "Protein-based microfluidic models for biomedical applications". In *Handbook of the Extracellular Matrix: Biologically-Derived Materials* (eds. Maia, F.R., Reis, R.L. & Oliveira, J.M.), in press (Springer, Berlin).
4. **Dance, Y.W.**, Meshulam, T., Seibel, A.J., Obenreder, M.C., Layne, M.D., Nelson, C.M., Tien, J., "Adipose stroma accelerates the invasion and escape of human breast cancer cells from an engineered microtumor". *Cell. Mol. Bioeng.*, 15, 15-29 (2022).
5. Tien, J., **Dance, Y.W.**, Ghani, U., Seibel, A.J., Nelson, C.M., "Interstitial hypertension suppresses escape of human breast tumor cells via convection of interstitial fluid". *Cell. Mol. Bioeng.*, 14, 147-159 (2021).
6. Tien, J., **Dance, Y.W.**, "Microfluidic biomaterials". *Adv. Healthc. Mater.*, 10, 2001028 (2021).
7. Tien, J., Ghani, U., **Dance, Y.W.**, Seibel, A. J., Karakan, M.C., Ekinici, K.L., Nelson, C.M., "Matrix pore size governs escape of human breast cancer cells from a microtumor to an empty cavity". *iScience*, 23, 101673 (2020).

CONFERENCE ABSTRACTS

1. **Dance, Y.W.**, Obenreder, M.C., Seibel, A.J., Meshulam, T., Ogony, J.W., Lahiri, N., Radisky, D.C., Layne, M.D., Farmer, S.R., Nelson, C.M., Tien, J., "An engineered 3D microfluidic model to assess how adipocyte hypertrophy alters breast cancer escape" [poster], Biomedical Engineering Society 2022 (San Antonio, TX; planned).
2. Seibel, A.J., Kelly, O.M., **Dance, Y.W.**, Nelson, C.M., Tien, J., "Tumor cells ablate

lymphatic endothelium during vascular escape of engineered breast microtumors” [poster], Biomedical Engineering Society 2022 (San Antonio, TX; planned).

3. Seibel, A.J., Kelly, O.M., **Dance, Y.W.**, Nelson, C.M., Tien, J., “Lymphatic endothelium slows invasion and vascular escape of engineered human breast microtumors” [poster], National Institutes of Health/National Cancer Institute Cancer Tissue Engineering Collaborative Investigators Meeting (Madison, WI; 2022).
4. **Dance, Y.W.**, Obenreder, M.C., Seibel, A.J., Meshulam, T., Ogony, J.W., Radisky, D.C., Layne, M.D., Nelson, C.M., Tien, J., “Escape of human breast cancer cells through a 3D adipose stroma derived from lean or obese donors” [poster], Northeast Bioengineering Conference 2022 (New York City, NY; 2022).
5. Seibel, A.J., Kelly, O.M., **Dance, Y.W.**, Nelson, C.M., Tien, J., “Role of lymphatic endothelium in vascular escape of engineered human breast microtumors” [poster], Northeast Bioengineering Conference 2022 (New York City, NY; 2022).
6. **Dance, Y.W.**, “Adipose stroma accelerates human breast cancer cell invasion and escape in a 3D microfluidic model” [presentation], QBP/TRB/SB2 Graduate Research Symposium (Boston, MA; 2021).
7. **Dance, Y.W.**, Obenreder, M.C., Seibel, A.J., Ogony, J.W., Meshulam, T., Radisky, D.C., Nelson, C.M., Tien, J., “How obesity affects human breast cancer cell invasion and escape in a 3D microfluidic model” [presentation], Biomedical Engineering Society 2021 (Orlando, FL; 2021).
8. Seibel, A.J., Kelly, O.M., **Dance, Y.W.**, Nelson, C.M., Tien, J., “Lymphovascular escape of engineered human breast microtumors” [presentation], Biomedical Engineering Society 2021 (Orlando, FL; 2021).
9. **Dance, Y.W.**, Obenreder, M.C., Seibel, A.J., Ogony, J. W., Meshulam, T., Radisky, D.C., Nelson, C.M., and Tien, J. “How the obesity-associated microenvironment affects invasion and escape of engineered human breast microtumors” [poster/presentation], National Institutes of Health/National Cancer Institute Cancer Tissue Engineering Collaborative Investigators Meeting (virtual; 2021).
10. Seibel, A.J., Kelly, O. M., **Dance, Y.W.**, Nelson, C. M., Tien, J., “Lymphatic endothelium slows tumor progression in a tissue-engineered model of human breast cancer” [poster/presentation], National Institutes of Health/National Cancer Institute Cancer Tissue Engineering Collaborative Investigators Meeting (virtual; 2021).
11. **Dance, Y.W.**, Meshulam, T., Seibel, A.J., Obenreder, M.C., Layne, M.D., Nelson, C.M., Tien, J., “Invasion and escape of human breast cancer cells through an adipose stroma” [poster/presentation], Northeast Bioengineering Conference 2021 (virtual; 2021).
12. Seibel, A.J., **Dance, Y.W.**, Kelly, O. M., Nelson, C. M., Tien, J., “Lymphovascular escape of human breast microtumors” [poster/presentation], Northeast Bioengineering Conference 2021 (virtual; 2021).
13. **Dance, Y.W.**, Meshulam, T., Ghani, U., Parikh, N., Nelson, C.M., Tien, J., “A 3D

microfluidic model of human breast tumor invasion and escape through fibro-fatty stroma” [presentation], Biomedical Engineering Society 2020 (virtual; 2020).

14. **Dance, Y.W.**, Meshulam, T., Ghani, U., Parikh, N., Nelson, C.M., Tien, J., “A 3D microfluidic model of human breast tumor invasion and escape through adipose stroma” [poster], National Institutes of Health/National Cancer Institute Physical Sciences-Oncology Network Annual Investigators Meeting (virtual; 2020).
15. **Dance, Y.W.**, Nelson, C.M., Tien, J., “A 3D breast tumor-on-a-chip for analysis of tumor cell escape under flow” [poster], Biomedical Engineering Society 2019 (Philadelphia, PA; 2019).
16. **Ghani, U., Dance, Y.W.**, Nelson, C.M., Tien, J., “Effect of matrix concentration on breast cancer cell escape from a microtumor into an empty cavity” [poster], Biomedical Engineering Society 2019 (Philadelphia, PA; 2019).
17. **Nelson, C.M.**, Ghani, U., **Dance, Y.W.**, Tien, J., “Interstitial fluid pressure controls invasion and escape of metastatic human breast cancer cells” [presentation], Biomedical Engineering Society 2019 (Philadelphia, PA; 2019).
18. **Ghani, U., Dance, Y.W.**, Nelson, C.M. & Tien, J., “Matrix concentration affects the rate at which breast cancer cells escape from an engineered microtumor into a cavity” [poster], National Institutes of Health/National Cancer Institute Cancer Tissue Engineering Collaborative Investigators Meeting (Cambridge, MA; 2019).
19. **Tien, J.**, Ghani, U., **Dance, Y.W.** & Nelson, C.M., “Interstitial hypertension suppresses escape in human breast tumors” [poster & presentation], National Institutes of Health/National Cancer Institute Cancer Tissue Engineering Collaborative Investigators Meeting (Cambridge, MA; 2019).
20. **Kourouklis, A.P.**, Ghani, U., Han, S., **Dance, Y.W.**, Tien, J. & Nelson, C.M., “Tumor invasion and escape from an engineered solid-like aggregate of human breast cancer cells into a cavity” [presentation], American Association for Cancer Research 2019 Annual Meeting (Atlanta, GA; 2019).

COURSES TAUGHT

Teaching assistant at Boston University for:

ENG BE435 Transport Phenomena in Living Systems
Spring 2019, Fall 2019

ACTIVITIES

Member, Drexel University Varsity Golf Team, 2013-2017 (Captain 2016-2017)
Events Chair, Drexel Student-Athlete Advisory Committee, 2014-2017
Member, Fellowship of Christian Athletes at Drexel University, 2014-2017
Member, Delta Epsilon Iota Academic Honor Society, 2015-2016
Member, Dragon Leadership Academy at Drexel University, 2015-2017

Member, Drexel Biomedical Engineering Undergraduate Association, 2016-2017
Public Relations Officer, National Honor Society at the American School of Doha, 2011-2013
Member, American School of Doha Varsity Club Council, 2012-2013
Captain, American School of Doha Men's Varsity Basketball Team, 2011-2013