

Biographical Sketch

Name and Degree: Sharon Fleischer, Ph.D.

Current University: Columbia University, New York, NY, USA

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Research Interests: I am interested in the convergence of biology and engineering to develop advanced microphysiological systems that recapitulate the complexity of human organs. My goal is to harness these systems to elucidate molecular and cellular mechanisms regulating organ development, growth, and communication in health and disease. With a background and expertise in stem cell biology, biomaterials, microphysiological systems, and tissue engineering, I plan to develop application specific stem cell-derived tissues that will model complex pathological processes under highly controlled settings. I will further harness them to facilitate the development of diagnostic tools and use them as testbeds for potential therapeutic strategies to mitigate organ injury and disease.

Education and Training:

2017-2023 **Postdoctoral Scientist**, Vunjak-Novakovic Lab, Columbia University, NY, USA

2017 **Ph.D. in Biotechnology**, Dvir Lab, Tel Aviv University, Israel

2013 **M.Sc. in Biotechnology**, Dvir Lab, Tel Aviv University, Israel

2011 **B.Sc. in Biotechnology**, Tel Aviv University, Israel

Selected Publications (* denotes equal contribution):

- 1. Fleischer S***, Nash R.T*..., Vunjak-Novakovic G. An engineered human cardiac tissue model reveals direct contributions of systemic lupus erythematosus autoantibodies to myocardial injury. *Nature Cardiovascular Research*. Under review.
- 2.** Tamargo, M. A*, T. R. Nash*, **S. Fleischer***, Y. Kim, O. F. Vila, K. Yeager, M. Summers, Y. Zhao, R. Lock, M. Chavez, T. Costa and G. Vunjak-Novakovic (2021). "milliPillar: A Platform for the Generation and Real-Time Assessment of Human Engineered Cardiac Tissues." *ACS Biomater Sci Eng* **7**(11): 5215-5229.
- 3. Fleischer, S.**, D. N. Tavakol and G. Vunjak-Novakovic (2020). "From arteries to capillaries: approaches to engineering human vasculature." *Adv Funct Mater* **30**(37). (Cover article)
- 4. Fleischer, S.**, A. Shapira, R. Feiner and T. Dvir (2017). "Modular assembly of thick multifunctional cardiac patches." *Proc Natl Acad Sci U S A* **114**(8): 1898-1903.
- 5.** Tavakol, D.N., Nash, T.R., Kim, Y., He, S., **Fleischer, S.**, Graney, P.L., Brown, J.A., Liberman, M., Tamargo, M., Harken, A., Ferrando, A., Amundson, S., Garty, G., Azizi, E., Leong, K.W., Brenner, D.J., Vunjak-Novakovic, G (2023). "Modeling and countering the effects of cosmic radiation using bioengineered human tissues." *Biomaterials*.

Selected Awards/Honors (full list provided in CV):

Rising Star in Engineering in Medicine, Columbia Uni. & John Hopkins Uni. 2021

Rothschild Postdoctoral Fellowship, Yad Hanadiv, Israel. 2017

Postdoctoral Awards for Advancing Women in Science (WIS, VATAT, and Ruth Arnon). 2017

Awards for excellence in Biomedical Research (Rappaport, 2017), and **Medical Research** (Na'amat, 2016)

Adams Graduate Fellowship, The Israel Academy of Sciences and Humanities

Women in Science Scholarship, Israel Ministry of Science. 2013