JOHNS HOPKINS
BIOMEDICAL ENGINEERING

BME Virtual Seminar Series

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Monday, September 13th, 2021
1:30 p.m.
Held via Zoom

Faculty host: Joshua Doloff

Functional Tunable Biomimetics for Engineering of Ovarian Tissue

Abstract: Our current research focuses on treatment solutions for premature ovarian insufficiency (POI), which is a common complication of cytotoxic treatments due to extreme ovarian chemo- and radiation sensitivity. POI causes sterility and loss of ovarian endocrine function leading to premature osteopenia, muscle wasting, and accelerated cardiovascular diseases. The unique challenges associated with fertility preservation in females are rooted primarily in limited and non-renewable ovarian reserves. None of the options for fertility preservation, that are clinically available can either restore the lost ovarian endocrine function or are suitable for children and young adults. In our laboratory we aim to create biomimetic constructs that direct tissue regeneration and restore biological function by combining approaches from engineering, materials, chemistry and life sciences. To achieve this, we design biomaterial-based matrices that support the development of ovarian follicles cultured *in vitro* or transplanted *in vivo*

Bio: Ariella Shikanov joined the Department of Biomedical Engineering at the University of Michigan in 2012. She completed her postdoctoral fellowship at Northwestern University in Chicago in a multidisciplinary collaboration called the Oncofertility Consortium, which was created to address infertility induced by chemotherapy in cancer survivors. Dr. Shikanov is the recipient of The Harwell Foundation (2014), NSF CAREER (2016), Cellular and Molecular Bioengineering Young Innovator (2018) awards and is funded by several R01s from NIBIB and NICHD. Dr. Shikanov was also nominated for the Golden Apple Teaching award (2017) and was voted an Outstanding Undergraduate Research Opportunity Program mentor (2014).2019 Rising Stars in Biomedical.