

**Faculty Name:**

Gordana Vunjak-Novakovic

**Faculty Email:**

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**Lab:**

Laboratory for Stem Cells and Tissue Engineering

**Project Title:**

Studying autoimmune mediated-myocarditis using engineered hiPSCs-cardiac tissue models.

**Description:**

Myocardial injury develops in approximately 25-50% of systemic lupus erythematosus (SLE) patients and presentation ranges from asymptomatic to heart failure. While the diverse landscape of patient autoantibodies may explain a significant fraction of clinical heterogeneity, their direct contribution to myocardial injury remains unknown. This study aims to use a human iPSC-derived model of the human heart to study the effects of autoantibodies isolated from SLE patients with and without myocardial inflammation. This project will involve using tissue engineering techniques and stem cell biology to delineate the role of autoantibodies on cardiac tissue performance. Student must have basic knowledge in stem cell culture, tissue engineering, and microscopy. Knowledge in R or Python is a bonus.

**Location of Research:**

On-Site

**# of hrs/week:**

35

**Department/Program:**

Biomedical Engineering

**Eligibility:**

MS

**To apply, please contact:**

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