

Jack F. Murphy

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Education

Trinity College Dublin, The University of Dublin

Dublin, Ireland

BACCALAUREUS IN ARTE INGENIARIA (B.A.I) + MAGISTER IN ARTE INGENIARIA (M.A.I) IN BIOMEDICAL ENGINEERING

Expected Graduation: 2023

Publications

MURPHY, JACK F ET AL. "ADULT HUMAN CARDIAC STEM CELL SUPPLEMENTATION EFFECTIVELY INCREASES CONTRACTILE FUNCTION AND MATURATION IN HUMAN ENGINEERED CARDIAC TISSUES." STEM CELL RESEARCH & THERAPY VOL. 10,1 373. 4 DEC. 2019, DOI:10.1186/S13287-019-1486-4

For full list of publications visit
<https://pubs.jack.engineering>

Research Experience

Costa Lab, Icahn School of Medicine at Mount Sinai

New York City, USA

RESEARCH ASSISTANT

March 2017 – Present

- Maintained human induced-Pluripotent stem cells, mesenchymal stem cells, and cardiac stem cells in culture.
- Differentiated induced-Pluripotent stem cells into cardiomyocytes and fabricated 3-D human engineered cardiac tissues.
- Used LabView and MatLab to collect and analyze data on cardiac function.
- Designed and printed 3-D accessories using Autodesk Fusion 360 to help with the data collection process.

Monaghan Lab, Trinity Centre for Bioengineering

Dublin, Ireland

RESEARCH ASSISTANT

September 2018 – Present

- Stained and analyzed tissues using polarized light microscopy to understand the effects of a silicone implant.
- Helped to develop a testing apparatus to determine if a scaffold propagates an electric pulse between tissue samples.

Center for Excellence in Youth Education at Mount Sinai

New York City, USA

RESEARCH SCHOLAR

September 2016 – June 2018

- Helped guide middle school students through dissections of the heart, eye, and kidney.
- Participated in the New York City Science and Engineering Fair with research carried out in the Costa Lab.

Dean Lab, Columbia University

New York City, USA

LAB ASSISTANT

June 2017 – December 2017

- Exfoliated graphite to get a monolayer of graphene.
- Created a device with graphene insulated by boron nitride and used atomic force microscopy (AFM) to identify imperfections.

Volunteer Experience

Voluntary Tuition Program

Dublin, Ireland

MATHS TUTOR

September 2018 - May 2018

- Met with a primary school student each week to aid them in their understanding of maths.

Key Club

New York City, USA

VOLUNTEER

September 2015 - June 2018

- Volunteered for over 200 hours at community events such as soup kitchens, restoration efforts, fundraisers, and marathons.

Skills

Programming: C++, Python

Cell Culture: human induced-Pluripotent stem cells, mesenchymal stem cells, cardiac stem cells

Data Analysis: ImageJ/FIJI, MatLab, LabView, Excel, Graphpad Prism 8

CAD: Autodesk Inventor, Revit, Fusion 360

Microscopy: Cell and Tissue Staining, Polarized Light, Confocal