

# Jack F. Murphy

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## Education

### Trinity College Dublin, The University of Dublin

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

Dublin, Ireland

Expected Graduation: 2023

## Publications

### 2019

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://jack.engineering/#publications>

## Research Experience

### Costa Lab, Icahn School of Medicine at Mount Sinai

RESEARCH ASSISTANT

- 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.

New York City, USA

March 2017 – Present

### Monaghan Lab, Trinity Centre for Bioengineering

RESEARCH ASSISTANT

- Stain and analyze 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.

Dublin, Ireland

September 2018 – Present

### Center for Excellence in Youth Education at Mount Sinai

RESEARCH SCHOLAR

- 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.

New York City, USA

September 2016 – June 2018

### Dean Lab, Columbia University

LAB ASSISTANT

- 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.

New York City, USA

June 2017 – December 2017

## Volunteer Experience

### Voluntary Tuition Program

MATHS TUTOR

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

Dublin, Ireland

September 2018 - May 2018

### Key Club

VOLUNTEER

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

New York City, USA

September 2015 - June 2018

## Skills

**Programming:** C++, Python

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

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

**CAD:** Autodesk Inventor, Revit, Fusion 360

**Microscopy:** Cell and Tissue Staining, Polarized Light, Confocal