

Jack F. Murphy

Biomedical Engineering Student

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Education

Trinity College Dublin, The University of Dublin	Dublin, Ireland
B.A.I + M.A.I in Biomedical Engineering	Expected Graduation: 2023
The High School for Mathematics, Science, and Engineering (HSMSE)	New York City, United States
New York Regents Diploma with Honors	Graduated: 2018

Publications

Turnbull, I. C., Mayourian, J., Murphy, J. F. , Stillitano, F., Ceholski, D. K., & Costa, K. D. (2018). Cardiac Tissue Engineering Models of Inherited and Acquired Cardiomyopathies. Methods Mol Biol 1816: 145-159	
Mayourian, J., Ceholski, D. K., Gorski, P. A., Mathiyalagan, P., Murphy, J. F. , Hare, J. M., Sahoo, S., Hajjar, R. J., & Costa, K. D. (2018). MicroRNA-21-5p as an Exosomal Mediator of Mesenchymal Stem Cell Paracrine Effects on Human Engineered Cardiac Tissues Contractility. Circ Res 122(7): 933-944	

Research Experience

Lab Assistant (Unpaid)	Monaghan Lab, Trinity Biomedical Sciences Institute
September 2018 - Present	Dublin, Ireland
<ul style="list-style-type: none">Stain tissues for histological analysis.Analyze tissues using polarized light microscopy and ImageJ to understand the effects of a silicone implant.	
CEYE Research Scholar (Partially Paid June 2017 - September 2017)	Costa Lab, Icahn School of Medicine at Mt. Sinai
September 2016 - June 2018	New York City, United States
<ul style="list-style-type: none">Helped to guide middle school students through dissections of the heart, brain, eye and kidney.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.	
Lab Assitant (Unpaid)	Dean Lab, Columbia University
June 2017 - December 2017	New York City, United States
<ul style="list-style-type: none">Created a device with graphene insulated by a layer of boron nitride on each side.	

Volunteer Experience

Maths Tutor	Voluntary Tuition Program (VTP), Trinity College Dublin
September 2018 - Present	Dublin, Ireland
<ul style="list-style-type: none">During term, meet with a student for one hour each week to aid them in their understanding of maths.	
Volunteer	Key Club, HSMSE
September 2015 - June 2018	New York City, United States
<ul style="list-style-type: none">Volunteered at events such as community walks, soup kitchens, restoration efforts, and fundraisers.	
Big Sib and Tutor	Mentoring Program, HSMSE
June 2015 - June 2018	New York City, United States
<ul style="list-style-type: none">Mentored incoming freshman and assisted them in their transition to high school by meeting with them periodically.Worked with students both in small groups and indiviually to help them in English and Algebra.	

Key Skills

Culture of:	Proficient in:
<ul style="list-style-type: none">human induced-Pluripotent Stem Cells (hiPSC)human Mesenchymal Stem Cells (hMSC)human Cardiac Progenitor Cells (hCPC)	<ul style="list-style-type: none">LabView for data collectionMatLab for data analysisImageJ/FIGI for image analysisAutodesk Inventor, Revit, and Fusion 360Tissue staining for histologyPolarized light microscopy
Fabrication of:	
<ul style="list-style-type: none">human Engineered Cardiac Tissues (hECT)	