

Jack F. Murphy

Biomedical Engineering Student

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Education

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

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. <i>Methods Mol Biol</i> 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. <i>Circ Res</i> 122(7): 933-944	

Research Experience

Lab Assistant <i>September 2018 - Present</i>	Monaghan Lab, Trinity Biomedical Sciences Institute 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 <i>September 2016 - June 2018</i>	Costa Lab, Icahn School of Medicine at Mt. Sinai 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 <i>June 2017 - December 2017</i>	Dean Lab, Columbia University 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 <i>September 2018 - Present</i>	Voluntary Tuition Program (VTP), Trinity College Dublin 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 <i>September 2015 - June 2018</i>	Key Club, HSMSE 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 <i>June 2015 - June 2018</i>	Mentoring Program, HSMSE 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 individually to help them in English and Algebra.	

Key Skills

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