Joshua Mayourian

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EDUCATION

Icahn School of Medicine at Mount Sinai Anticipated May 2020
M.D./Ph.D. Candidate
Ph.D. in Biomedical Sciences (Concentration in Biophysics and Systems Pharmacology) Completed January 2018
Overall GPA: 3.9/4.0

Cooper Union for the Advancement of Science and Art May 2014
M.E., B.E. in Chemical Engineering; Minor in Biomedical Engineering
Overall GPA: 3.9/4.0; Major GPA: 3.9/4.0

PUBLICATIONS

Mathiyalagan P, Adamiak M, **Mayourian J**, Sassi Y, Liang Y, Agarwal N, Jha D, Zhang S, Kohlbrenner E, Chepurko E, Chen J, Trivieri MG, Singh R, Bouchareb R, Fish K, Ishikawa K, Lebeche D, Hajjar RJ, Sahoo S. FTO-Dependent m6A Regulates Cardiac Function During Remodeling and Repair. Circulation. 2018; in press.

Turnbull IC, **Mayourian J**, Murphy JF, Stillitano F, Ceholski DK, Costa KD. Cardiac Tissue Engineering Models of Inherited and Acquired Cardiomyopathies. Methods in Molecular Biology. 2018;1816:145-159.

Mayourian J, Sobie EA, Costa KD. An Introduction to Computational Modeling of Cardiac Electrophysiology and Arrhythmogenicity. Methods in Molecular Biology. 2018;1816:17-35.

Ceholski DK, Turnbull IC, Kong CW, Koplev S, **Mayourian J**, Gorski PA, Stillitano F, Skodras AA, Nonnenmacher M, Cohen N, Bjrkegren JLM, Stroik DR, Cornea RL, Thomas DD, Li RA, Costa KD, Hajjar RJ. Functional and transcriptomic insights into pathogenesis of R9C phospholamban mutation using human induced pluripotent stem cell-derived cardiomyocytes. JMCC. 2018;119:147-154.

Golberg-Smith P. **Joshua Mayourian**:Rising to the Challenge. Circulation Research. 2018;122(11):1494-1495.

Mayourian J, Ceholski DK, Gorski P, Mathiyalagan P, Murphy JF, Salazar SI, Stillitano F, Hare JM, Sahoo S, Hajjar RJ, Costa KD. Exosomal microRNA-21-5p Mediates Mesenchymal Stem Cell Paracrine Effects on Human Cardiac Tissue Contractility. Circulation Research. 2018;122(7):933-944.

Mayourian J, Ceholski DK, Gonzalez DM, Cashman TJ, Sahoo S, Hajjar RJ, Costa KD. Physiologic, Pathologic, and Therapeutic Paracrine Modulation of Cardiac Excitation-Contraction Coupling. Circulation Research. 2018; 122(1),167-183.

Mayourian J, Cashman TJ, Ceholski DK, Johnson BV, Sachs D, Kaji DA, Sahoo S, Hare JM, Hajjar RJ, Sobie EA, Costa KD. Experimental and Computational Insight into Human Mesenchymal Stem Cell Paracrine Signaling and Heterocellular Coupling Effects on Cardiac Contractility and Arrhythmogenicity. Circulation Research. 2017;121(4),411-423.

Mayourian J, Savizky RM, Sobie EA, Costa KD. Modeling Electrophysiological Coupling and Fusion between Human Mesenchymal Stem Cells and Cardiomyocytes. PLoS Comput Biol. 2016;12(7):e1005014. doi:10.1371/journal.pcbi.1005014

ABSTRACTS/PRESENTATIONS

Mayourian J, Ceholski DK, Costa KD.Exosomal microRNA-21-5p Mediates Mesenchymal Stem Cell Paracrine Effects on Human Cardiac Tissue Contractility. Mount Sinai Medical Student Research Day. 2018 (Poster Presentation & Abstract).

Mayourian J, Ceholski DK, Turnbull IC, Costa KD. The Role of Exosomes in Mesenchymal Stem Cell Mediated Enhancement of Cardiac Contractility. ISEV. 2017 (Podium Presentation & Abstract).

Mayourian J, Ceholski DK, Costa KD. Human Mesenchymal Stem Cells Increases Cardiac Tissue Contractility Through Exosomal Paracrine Signaling. Mount Sinai Medical Research Day. 2017 (Podium Presentation & Abstract).

Mayourian J, Ceholski DK, Turnbull IC, Costa KD. Human Mesenchymal Stem Cells Enhance Cardiac Contractility Through Exosomal Paracrine Signaling. NYSTEM. 2017 (Poster Presentation & Abstract).

Mayourian J, Cashman TJ, Johnson BV, Sachs D, Kaji DA, Sobie EA, Costa KD. Human Mesenchymal Stem Cell Paracrine Signaling Counteracts Heterocellular Coupling Effects on Cardiac Contractility and Arrhythmogenicity. Biophysical Society. 2017; 112(3): Supplement 1:162a (Podium Presentation & Abstract).

Mayourian J, Savizky RM, Sobie EA, and Costa KD. Modeling Electrophysiological Coupling and Fusion between Human Mesenchymal Stem Cells and Cardiomyocytes. APSA. 2016 (Poster Presentation & Abstract).

Mayourian J, Savizky RM, Sobie EA, and Costa KD. Modeling Electrophysiological Interactions Between Mesenchymal Stem Cells and Cardiomyocytes for Improved Cell Delivery Cardiotherapeutics. Biophysical Society. 2016; 110(3): Supplement 1:271a (Poster Presentation & Abstract).

Mayourian J, and Costa KD. Computational and Human Engineered Cardiac Tissue Applications to Mesenchymal Stem Cell-Mediated Heart Therapies. IBM T.J. Watson Research Center, Multiscale Systems Biology and Modeling Group. 2015. (Invited seminar).

Cashman TJ, **Mayourian J**, and Costa KD. Secretion of Angiogenic and Anti-Apoptotic Factors Accompanies Mesenchymal Stem Cell-Mediated Enhancement of Contractile Function in Engineered Cardiac Tissues. Circulation Research. 2013;113(4): A130 (Abstract).

Mayourian J, Cashman TJ, and Costa KD. Role of Paracrine Signaling in Mesenchymal Stem Cells Improving Cardiomyocyte Function. BMES. 2012 (Podium Presentation & Abstract).

TEACHING EXPERIENCE

Head Medical School Cardiovascular Physiology TA, ISMMS	2016 - 2017
Sinai Health Innovation Program Guest Lecturer, ISMMS	2017
Bioelectricity TA, Cooper Union	2013

AWARDS AND HONORS

Mount Sinai Arthur Cederbaum Mentorship Award	2018
Mount Sinai Graduation with Research Distinction	2018
Circulation Research Trainee in the Spotlight	2018
Circulation Research Editor's Pick	2018
Circulation Research Editor's Pick	2017
International Society of Extracellular Vesicles (ISEV) Travel Award	2017
PLoS Computational Biology Editor's Pick	2016
PLoS Computational Biology Cover Photo	2016
American Physician Scientists Association (APSA) Travel Award, Icahn School of Medicine at Mount Sinai	2015
ISMMS Graduate School Travel Award, Icahn School of Medicine at Mount Sinai	2015-2016
Education Committee Travel Award, Biophysical Society	2016
Mount Sinai Institute of Technology Fellow, Icahn School of Medicine at Mount Sinai	2015
Rudin Fellow, Icahn School of Medicine at Mount Sinai	2014-2015
Accepted Early Assurance into the Icahn School of Medicine at Mount Sinai M.D./Ph.D. Program	2012
Elmer J. Badin Chemistry Award, Cooper Union	2013
Herbert Baldwin Fund Prize, Cooper Union	2013
Daniel Okrent Cooper Fund Scholar, Cooper Union	2013
Responsible for Greatness Award, Cooper Union	2013
Goldwater Scholarship Honorable Mention	2013
Deans List, The Cooper Union	2010-2014
Full-tuition Scholarship, The Cooper Union	2010-2014

GRANTS/FELLOWSHIPS

NIH/NHLBI 1 F30 HL134283-01A1	2017 - Present
Integrated Pharmacological Sciences Training Program T32, NIGMS	2016-2017
IBM Thomas J. Watson Internship, IBM Thomas J. Watson	2016
Mount Sinai Institute of Technology Fellowship, ISMMS	2015
N.I.H Fully-Funded Medical Scientist Training Program, ISMMS	2014
Rudin Fellowship, ISMMS	2014-2015

IN THE MEDIA

Trainees in the Spotlight: Joshua Mayourian, 2018
http://circres.ahajournals.org/content/122/11/1494
Circulation Research: Meet the First Authors, 2018
http://circres.ahajournals.org/content/122/7/904
Circulation Research: Meet the First Authors, 2017
https://circres.ahajournals.org/content/121/4/312
PLoS Computational Biology Cover Photo, July 2016
http://journals.plos.org/ploscompbiol/issue?id=info%3Adoi/10.1371/issue.pcbi.v12.i07
Cooper Union Senior Snapshot, 2014

http://cooper.edu/engineering/news/senior-snapshots-2014-albert-nerken-school-engineering
Joshua Mayourian, Personal Website
http://joshuamayourian.com

MEMBERSHIPS

Cooper Union Basketball Team, Former Starting Point Guard/Captain and Coach	2010 - 2017
American Heart Association, Member	2016 - Present
International Society of Extracellular Vesicles	2017 - Present
American Physician Scientists Association, Member	2014 - Present
Biophysical Society, Member	2013 - Present
Biomedical Engineering Society, Member	2012 - Present
Tau Beta Pi, Secretary, Member, Engineering Honors Society	2012 - 2014
Cooper Union Pre-Medicine Mentorship Club, Founder	2013 - 2014
Zeta Psi Fraternity, Treasurer and Athletic Chair	2011 - 2014
American Institute of Chemical Engineers, Member	2011 - Present

SKILLS

Laboratory Skills

· Cardiac tissue engineering, stem cell culture/differentiation, exosome isolation, calcium transient measurements, *in vitro* and *in silico* cardiac electrophysiology, computational modeling, numerical methods, finite element methods, machine learning.

Computer Languages and Programs

· Python, MATLAB, HTML, CSS, QBasic, LaTeX

· Chaste, Continuity 6, ParaView, CMGUI, CellML, COMSOL, Pro/II Processing Engineering Software, AutoCAD, Solidworks, Microsoft Office

Languages

· Fluent in Hebrew and English and conversant in Spanish and Persian

REFERENCES

Kevin D. Costa, PhD, Director of Cardiovascular Cell and Tissue Engineering — Mount Sinai
Phone: 212-241-7122; e-mail: kevin.costa@mssm.edu

Roger J. Hajjar, MD, Director of the Cardiovascular Research Center, Arthur and Janet C. Ross Professor of Medicine — Mount Sinai
Phone: 212-824-8901; e-mail: roger.hajjar@mssm.edu

Talia H Swartz, MD, PhD, Associate Director of MD/PhD Program — Mount Sinai
Phone: 212-241-6078; e-mail: talia.swartz@mssm.edu