Thomas Samuel O'Leary

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Education

2019 – now	**Ph.D. Student, Biology**, Mentor: Dr. Brent Lockwood	University of Vermont
2016	**B.A. Biology**, *cum laude*	University of Vermont

Fellowships & Awards

2022 – now	**Research Assistantship**	University of Vermont
	ThermoFly EPSCoR Grant, National Science Foundation (NSF)	
2019 – now	**Research Traineeship Fellow**	University of Vermont
	QuEST, National Science Foundation (NSF)	
2012 – 2016	**Presidential Scholarship**	University of Vermont
	Awarded to out-of-state students who have demonstrated the highest academic performance	
2012 – 2016	**Track & Field Athletic Scholarship**	University of Vermont
	Awarded to high achieving prospective student athletes	
2015	**America East All-Academic Team**	University of Vermont
	Awarded to All-Conference athletes with a high cumulative grade point average	

Publications

10. Barefield DY, Tonino P, Woulfe, K, Rahmanseresht S, **O'Leary TS**, Wasserstrom JA, … & McNally E. (submitted for publication). Myosin binding protein H-like regulates myosin binding protein distribution and function in atrial cardiomyocytes.
9. Wood NB, Kelly CM, **O'Leary TS**, Marin JL, & Previs MJ (2022). Cardiac muscle thick filaments are maintained by stochastic protein replacement. *Molecular & Cellular Proteomics. 21* (10), 100274. 21https://doi.org/10.1016/j.mcpro.2022.100274
8. Previs MJ, **O'Leary TS**, Morley MP, Palmer BM, LeWinter M, Yob JM, … & Day, SM (2022). Defects in the Proteome and Metabolome in Human Hypertrophic Cardiomyopathy. *Circulation. Heart Failure* https://doi.org/10.1161/CIRCHEARTFAILURE.121.009521
7. Tsan YC, DePalma SJ, Zhao YT, Capilnasiu A, Wu YW, … **O'Leary TS**, ...Helms AS (2021). Physiologic biomechanics enhance reproducible contractile development in a stem cell derived cardiac muscle platform*. Nature Communications, 12* (1), 6167. https://doi.org/10.1038/s41467-021-26496-1
6. Rahmanseresht S, Lee KH, **O'Leary TS**, McNamara JW, Sadayappan S, Robbins J, Warshaw DM, Craig R, & Previs MJ (2021). The N Terminus of Myosin-Binding Protein C Extends toward Actin Filaments in Intact Cardiac Muscle. *The Journal of General Physiology,* 153 (3). http://dx.doi.org/10.1085/jgp.202012726
5. Lecheta MC, Awde DN, **O'Leary TS**, Unfried LN, Jacobs NA, Whitlock MH, ... Helms Cahan S (2020). Integrating GWAS and transcriptomics to identify the molecular underpinnings of thermal stress responses in *Drosophila melanogaster*. *Frontiers in Genetics, 11* (658), 1–17. http://dx.doi.org/10.3389/fgene.2020.00658
4. Daneshparvar N, Taylor DW, **O'Leary TS**, Rahmani H, Yeganeh FA, Previs MJ, & Taylor KA (2020). CryoEM Structure of *Drosophila* Flight Muscle Thick Filaments at 7Å

Resolution. *Life Science Alliance, 3* (8), e202000823. http://dx.doi.org/10.26508/lsa.202000823

3. Helms AS, Tang VT, **O'Leary TS**, Friedline S, Wauchope M., Arora A., … Day SM (2020). Effects of *MYBPC3* loss of function mutations preceding hypertrophic cardiomyopathy. *Journal of Clinical Insights, 5* (2), e133782. http://dx.doi.org/10.1172/jci.insight.133782
2. **O'Leary TS,** Snyder J, Sadayappan S, Day SM, & Previs MJ (2019). MYBPC3 truncation mutations enhance actomyosin contractile mechanics in human hypertrophic cardiomyopathy. *Journal of Molecular and Cellular Cardiology, 127*, 165–173. http://dx.doi.org/10.1016/j.yjmcc.2018.12.003
1. Li A, Nelson SR, Rahmanseresht S, Braet F, Cornachione AS, Previs S, **O'Leary TS**, ... Warshaw DM (2019). Skeletal MyBP-C isoforms tune the molecular contractility of divergent skeletal muscle systems. *Proceedings of the National Academy of Sciences*, *116* (43), 21882–21892. http://dx.doi.org/10.1073/pnas.191054911

Teaching Experience

Teaching Assistant

2022 spring **Molecular and Cellular Biology**
sophomore level for science majors, University of Vermont

2020 spring **Genetics**
sophomore level for science majors, University of Vermont

2019 & 2021 **Comparative Physiology**
senior level capstone course for biology majors, University of Vermont

Guest Lectures

2022 Acclimation to temperature through epigenetic regulation
Climate Change Genetics, University of Vermont

2021 Redox homeostasis & heat adaptation in *D. melanogaster* embryos
Comparative Physiology, University of Vermont

2019 Proteomics, *MYBPC3* truncation mutations, & hypertrophic cardiomyopathy
Comparative Physiology, University of Vermont

Committees

2022 – now **Co-Representative**
Graduate Student Affairs Committee, Department of Biology, University of Vermont

2020 **Cohort II Representative**
QuEST Leadership Team, University of Vermont

2020 – now **Biology Graduate Student Social Committee**
Department of Biology, University of Vermont

2020 – 2022 **Science Outreach and Communication Team**
QuEST, University of Vermont

Seminars & Presentations

2021 Maintaining redox balance during acute heat stress in *D. melanogaster* embryos
Graduate Seminar, University of Vermont

2021 Molecular mechanisms of heat adaptation in *D. melanogaster*
Graduate Seminar, University of Vermont

2021 *MYBPC3* truncation mutations and hypertrophic cardiomyopathy
Graduate Seminar, University of Vermont

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Skills

Coding R, python, and Matlab

Lab enzyme activity, proteomics, transcriptomics, RNA & DNA extraction, and sequencing, single-cell sequencing

Professional Experience

2018 – 2019 **Labratory Research Technician** University of Vermont
Previs Lab, Department of Molecular Physiology and Biophysics

2017 – 2018 **Labratory Research Technician** University of Vermont
Lockwood Lab, Department of Biology

2016 – 2017 **Labratory Technician I & II** Charles River Labs
Sequencing Team, Molecular Biology Department, Malvern, PA

Athletics

2017 – now **Volunteer Coach** University of Vermont
Varsity Cross Country and Track & Field

2014 – 2016 **Captain** University of Vermont
Varsity Cross Country and Track & Field

2012 – 2016 **Division I Athlete** University of Vermont
Varsity Cross Country and Track & Field