

# RORY O'DWYER

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## EDUCATION

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### Stanford University

Pursuing Phd in Physics

*September 2020-Present*

### Texas A&M University

MS in Mathematics

*Dec 2019-August 2020*

Summa Cum Laude with BS in Physics (Honors) and Mathematics (Honors)

*August 2016-Dec 2019*

## RESEARCH AND LEADERSHIP EXPERIENCE

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### Stanford Graduate Workers Union (SGWU)

*First Elected Leadership, BC, IGC, Treasurer, Area Chief Steward*

October 2023 - present

*Stanford, California*

### LDMX Project

*Graduate Researcher*

December 6, 2020 - present

*Stanford, California*

### HPS Project

*Graduate Researcher*

July 12, 2021 - present

*Stanford, California*

### Stanford Schnitzer Lab

*Graduate Researcher*

May 5, 2020 - December 6, 2020

*Stanford, California*

### Texas A&M University High Energy Lab

*Undergraduate Researcher*

September 4, 2018 - August 1, 2020

*College Station, Texas*

### Texas A&M University Department of Mathematics

*Graduate Researcher*

January 3, 2018 - August 1, 2020

*College Station, Texas*

### CERN CMS Project (TAMU Branch)

*Undergraduate Researcher*

June 20, 2019-August 23, 2019

*Geneva, Switzerland*

### Texas A&M University Cyclotron Institute

*Undergraduate Researcher*

August 30, 2017 - May 30, 2019

*College Station, Texas*

### Texas A&M University Computational Physics

*Undergraduate Researcher*

Jan 1, 2019-August 23, 2019

*College Station, Texas*

## PUBLICATIONS

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### 0.1 Peer Reviewed Journal Articles

- 1.Zamora, J. *Direct Fusion Measurement of the  $^8\text{B}$  Proton-Halo Nucleus at Near-barrier Energies.*  
*Physics Letters B.* 29 March, 2021.

available at <https://www.sciencedirect.com/science/article/pii/S0370269321001969>

- 2.E. Koshchiiy et. al, *TexAT: Texas Active Target Detector System for Experiments with Rare Isotope Beams*. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment* Volume 957, 21 March 2020.  
available at <https://www.sciencedirect.com/science/article/pii/S0168900220300073>
- 3. J. Bishop et. al, *Beta-delayed charged-particle spectroscopy using TexAT*. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*. Volume
- 4. Parker Duncan, Rory O'Dwyer and Eviatar B. Procaccia. *An Elementary Proof for the Double Bubble problem in 1 Norm*. *Journal of Geometric Analysis*. Springer. 2022. Web,  
Available from <https://link.springer.com/article/10.1007/s12220-022-01008-9>
- 5. Parker Duncan, Rory O'Dwyer and Eviatar B. Procaccia. *Discrete 1 Double Bubble solution is at most ceiling+2 of the continuous solution*. *Journal of Discrete and Computational Geometry*. Springer. 2023. Web,  
Available from <https://link.springer.com/article/10.1007/s00454-023-00501-4>
- 6. O'Dwyer, Rory. *Stepping Stone Problem on Graphs*. *The Mathematics Enthusiast*. University of Montana. July, 2023  
Available from <https://scholarworks.umt.edu/tme/vol21/iss1/4/>
- 7. Akesson, T. et al. *Photon-rejection power of the Light Dark Matter eXperiment in an 8 GeV beam*. *Journal of High Energy Physics*. Springer. 2023. Web,  
Available from [https://link.springer.com/article/10.1007/JHEP12\(2023\)092](https://link.springer.com/article/10.1007/JHEP12(2023)092)
- 8. Sui Chin and J. Massey. *The Hardwall Method of Solving the Radial Schrodinger Equation and Unmasking Hidden Symmetries* *American Journal of Physics*, Vol 87, Issue 8. August, 2019.  
Available from <https://aapt.scitation.org/doi/full/10.1119/1.5111839>  
*This (8) is the only entry where not credited as an Author, but included in Acknowledgements for my contribution to the publication.*

## 0.2 Pre-Prints

- 1. O'Dwyer, Rory. *Relativistic Propagators on Lattices*. arXiv.org. Sep 18, 2023  
Available from <https://arxiv.org/abs/2309.09535>
- 2. O'Dwyer, Rory. *A Geometric Picture of Perturbative QFT*. arXiv.org. Oct 12, 2023  
Available from <https://arxiv.org/abs/2310.08695>
- 3. Parker, Duncan, Rory O'Dwyer, and Eviatar B. Procaccia. *The Double Bubble Problem in the Hexagonal Norm*. arXiv.org. Jan 18, 2024.  
Available from <https://arxiv.org/abs/2401.09893>

## 0.3 Conference Series and Other

- 1. O'Dwyer, Rory V. *Radiation Hardness Assessment for muon System Electronics Installed in the 2020 CMS Upgrade*. *Undergraduate Research Scholars Program*.  
Available at <http://hdl.handle.net/1969.1/175438>

- 2. *State of the Art Measurements with TexAt Journal of Physics Conference Series. IOP Publishing Ltd. 2019. Web,*  
Available from <https://iopscience.iop.org/article/10.1088/1742-6596/1308/1/012006>
- 3. Nathan Baltzell, et al. “The Heavy Photon Search Experiment”/ *arXiv.org. March 16, 2022*  
Available from <https://arxiv.org/abs/2203.08324>
- 4. SGWU B.C. and Stanford University. *Agreement Between Stanford University and UE Local 1043 (SGWU). November 22, 2024.*  
Available from [https://sgwu.us/pdf/contract\\_2024\\_2027\\_scanned.pdf](https://sgwu.us/pdf/contract_2024_2027_scanned.pdf)

## RESEARCH PRESENTATIONS

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Rory O’Dwyer. “Optimization of the Full Reconstruction Chain of the HPS Experiment w.r.t. Its 2019 and 2021 Physics Runs”. APS. March 19, 2024.

Available from <https://summit.aps.org/events/APR-P10/7>

Rory O’Dwyer. “Triggering Firmware and T9 Testbeam Efficiency Evaluatations for the LDMX Trigger Sctinillator”. APS. April 5, 2024.

Available from <https://meetings.aps.org/Meeting/APR24/Session/P14.5>

R. O’Dwyer. “Commissioning High Rate Capabilities of the New CMS GE11 Muon Detector Readout System for the High Luminosity Operations at the Large Hadron Collider”. Undergraduate Research Scholars Virtual Presentation Session. March 27, 2020. Web.

R. O’Dwyer. “Radiation Hardness Assessment for Muon System Electronics Installed in the 2020CMS Upgrade”. Undergraduate Research Scholars Virtual Presentation Session. March, 2019. Web.

Bishop, Jack et. al. “Measurement of near-threshold states in  $^{12}\text{C}$  using beta-delayed charged particle decay”. 2019 Fall Meeting of the APS Division of Nuclear Physics. October 16, 2019. Web

available from <https://meetings.aps.org/Meeting/DNP19/Session/MB.5>

R. O’Dwyer, E. Procaccia. “Double Bubble Problem with  $R_2$  under  $L_1$ ”. pres at LA-TX Undergraduate Mathematics Conference. Baton Rouge, LA, October 2018.

R. O’Dwyer, E. Procaccia. “Double Bubble Problem with  $R_2$  under  $L_1$ ”. pres at Mathfest. Denver, CO, August 2018.

R.O’Dwyer. “Decreasing Non-Uniformity in Nuclear Physics” pres. at TAMU Undergraduate Research Week 2018, College Station, TX, March 2017

## HONORS AND AWARDS

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2023-2025 HEP-CAT Scholar

2019-2020 Recipient of the Philip and Doris Moses Fund Honors Scholarship

2019 Graduation with Departmental Physics Honors and Departmental Math Honors.

2018-2019 Undergraduate Research Scholar.

2018-2019 Recipient of the Philip and Doris Moses Fund Honors Scholarship

2018 AMC national math competition 4<sup>th</sup> place (Mathfest)

2017-2018 Departmental Awards for Math 411,416,409

2016-2019 Dean's list for 8 Semesters for Academic Excellence

## **CO-CURRICULAR ACTIVITIES**

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2023-2025 Stanford Graduate Student Union Bargaining Committee representative, Treasurer, and Communications Team

2023-2025 LDMX CHOCo (Collaboration Health and Outreach Committee) Co-Chair

2022 Referee for the Transactions of the American Mathematical Society

2018-present Member of Pi Mu Epsilon and Phi Kappa Phi (Mathematical and Academic Societies resp.)

2016-2018 Tutor for Math 411, 416, and Phys 331

2018-2020 TAMU Undergraduate Research Scholar

Treasurer (2018) and Safety Officer (2019) TAMU Wrestling Team

NAACP Wrestler 2016, 2017.