curriculum vitæ of
Jacob Bringewatt

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Education

2018 – present **Ph.D.** in physics — University of Maryland, College Park

I'm a 3rd year PhD student, DOE Computational Science Graduate Fellow (2018-2022), and QuICS Lanczos Graduate Fellow (2018-2020) in theoretical physics. I'm also affiliated with the Joint Quantum Institute (JQI) and the Joint Center for Quantum Information and Computer Science (QuICS). My advisor is Alexey Gorshkov.

2014 – 2018 **B.S.** in physics (cum laude with high honors in physics) — University of Maryland, College Park

Banneker/Key Scholar

Publications

6. T Qian, **J Bringewatt**, I Boettcher, P Bienias, A V Gorshkov. "Optimal measurement of field properties with quantum sensor networks." Phys. Rev. A (Letter) Accepted. (2021) [arXiv:2011.01259]

5. **J Bringewatt**, N Sato , W Melnitchouk, J Qiu, F Steffens, M Constantinou. "Confronting lattice parton distributions with global QCD analysis." Phys. Rev. D. 103, 016003 (2021) [arXiv:2010.00548]

4. **J Bringewatt**, M Jarret. "Effective gaps are not effective: quasipolynomial classical simulation of obstructed stoquastic Hamiltonians." Phys. Rev. Lett. 125, 170504 (2020), [arXiv:2004.08681]

3. **J Bringewatt**, W Dorland, SP Jordan. "Polynomial time algorithms for estimating spectra of adiabatic Hamiltonians." Phys. Rev. A 100 (3), 032336 (2019), [arXiv:1905.07461]. Editors' Suggestion.

2. **J Bringewatt**, W Dorland, SP Jordan, A Mink. "Diffusion Monte Carlo approach versus adiabatic computation for local Hamiltonians." Phys. Rev. A 97 (2), 022323 (2018), [arXiv:1709.03971]

1. K Pushkin, C Akerlof, D Anbajagane, J Armstrong, M Arthurs, **J Bringewatt**, T Edberg, C Hall, M Lei, R Raymond, M Reh, D Saini, A Sander, J Schaefer, D Seymour, N Swanson, Y Wang, W Lorenzon. "Study of radon reduction in gases for rare event search experiments." Nucl. Instrum. Methods Phys. Res., Sect. A 903, 267-276 (2018), [arXiv:1805.11306]

Talks and Posters – By Project

- "Optimal measurement of field properties with quantum sensor networks." Talk at APS March Meeting 2021 and posters at QuICS Stakeholder Day (Mar. 2021) and QuICS admitted student day (Mar. 2021).

- "Estimating multiple functions with quantum sensor networks." Poster at QuICS 5-year Anniversary Symposium (Jan. 2020) and talk at Gorshkov Group Meeting (Jan. 2021)

- "Lattice data in the JAM framework" and "Confronting lattice parton densities with global analysis." Talks at Jefferson Lab weekly seminar (Aug. 2019), at DNP 2019 (Oct. 2019), at AI for Nuclear Physics Workshop - Bayesian Inference for Quantum Correlation Functions Working Group (Mar. 2020) and at Amherst Center for Fundamental Interactions (ACFI) Workshop on QCD Real-Time Dynamics and Inverse Problems (Oct. 2020)

- "Effective gaps are not effective." Poster at FAR-QC kickoff meeting (Nov. 2019) and talk at Gorshkov Group Meeting (April 2020)

- "Polynomial time algorithms for estimating spectra of adiabatic Hamiltonians." Poster at STAQ kickoff meeting, Duke University (Nov. 2018) and QIP2019 (Jan. 2019) and at DOE Computational Science Graduate Fellowship Annual Program Review (July 2019)
- "Diffusion monte carlo approach versus adiabatic computation for local Hamiltonians." Poster at QIP2018 (Jan. 2018) and at DOE Computational Science Graduate Fellowship Annual Program Review (July 2018) and talk at NIST SURF program final review and for undergraduate honors thesis defense (May 2018)

Honors

- Department of Energy Computational Science Graduate Fellow (2018-2022)
- Joint Center for Quantum Information and Computer Science (QuICS) Lanczos Graduate Fellow (2018-2020)
- DOE Computational Science Graduate Fellowship Communicate Your Science Essay Contest Winner (2019)
- Banneker/Key Scholar at University of Maryland, College Park (2014-2018)

Service To The Scientific Community

- Speaker Organizer for QuICS-JQI-CMTC Friday Seminar (2020-2021)
- Graduate Panelist for Conference for Undergraduate Underrepresented Minorities in Physics (cu2mip) 2021
- Referee for Quantum.

Teaching

- Math tutor at University of Maryland (2016-2018)
- TA for Philosophy of Quantum Mechanics course at University of Maryland (Fall 2016)

Mentorship

- Timothy Qian (Montomery Blair High School) - Regeneron Science Talent Search finalist (Summer 2020)
- Victoria Adebayo (Howard University) - GRAD-MAP Winter Workshop 2021 (Winter 2021)