

Sam Avery Norrell

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EDUCATION

University of Wisconsin–Madison	Madison, WI
Doctor of Philosophy in Physics	<i>Expected 2027</i>
Master of Arts in Physics	<i>May 2023</i>
Indiana University	Bloomington, IN
Bachelor of Science in Biology, <i>Highest Distinction</i>	<i>May 2021</i>
Bachelor of Arts in Chemistry, <i>Highest Distinction</i>	<i>May 2021</i>
Bachelor of Arts in Mathematics, <i>Highest Distinction</i>	<i>May 2021</i>

RESEARCH APPOINTMENTS

Graduate Research Assistant	2021 – present
<i>University of Wisconsin–Madison Department of Physics</i>	<i>Madison, WI</i>
– Experimental Quantum Computing; Atomic Physics	
– Advisor: Mark Saffman	
Undergraduate Research Assistant	2020 – 2021
<i>Indiana University Department of Physics</i>	<i>Bloomington, IN</i>
– Experimental Quantum Computing; Quantum Simulation	
– Advisor: Philip Richerme	
Undergraduate Research Assistant	2016 – 2020
<i>Indiana University Department of Biology</i>	<i>Bloomington, IN</i>
– Molecular Genetics in <i>D. melanogaster</i>	
– Advisor: Nicholas Sokol	

PUBLICATIONS AND PRESENTATIONS

REFERRED JOURNALS AND PREPRINTS

- 4. Interleaved dual-species arrays of single atoms using a passive optical element and one trapping laser**
C. Fang, J. Miles, J. Goldwin, M. Lichtman, M. Gillette, M. Bergdolt, S. Deshpande, S. A. Norrell, P. Huft, M. A. Kats, M. Saffman
[Science Advances **11**, eadw4166 \(2025\).](#)
- 3. Fast measurements and multiqubit gates in dual-species atomic arrays**
D. Petrosyan, S. Norrell, C. Poole, M. Saffman
[Physical Review A **110**, 042404 \(2024\).](#)
- 2. Quantum Computation of Hydrogen Bond Dynamics and Vibrational Spectra**

P. Richerme, M. C. Revelle, C. G. Yale, D. Lobser, A. D. Burch, S. M. Clark, D. Saha, M. A. Lopez-Ruiz, A. Dwivedi, J. M. Smith, [S. A. Norrell](#), A. Sabry, S. S. Iyengar
[The Journal of Physical Chemistry Letters](#), **14**, 7256 (2023).

1. **Coordinated repression of pro-differentiation genes via P-bodies and transcription maintains *Drosophila* intestinal stem cell identity**

K. Buddika, Y. Huang, I. S. Ariyapala, A. Butrum-Griffith, [S. A. Norrell](#), A. M. O'Connor, V. K. Patel, S. A. Rector, M. Slovan, M. Sokolowski, Y. Kato, A. Nakamura, N. S. Sokol
[Current Biology](#), **32**(2), 386 (2022).

TALKS

5. **Engineering Entangling Quantum Gates with Interacting Rydberg p States**
Wisconsin Quantum Institute Colloquium

Madison, WI

September 2025

4. **A Single-Wavelength Trap Array of Neutral Rubidium and Cesium Atoms**

54th Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics
Spokane, WA

June 2023

3. **Quantum Computing and Error Correction with Neutral Cesium and Rubidium Atoms**

Physics Department Special Research Colloquium

University of Wisconsin–Madison, Madison, WI

March 2023

2. **Programming Trapped-Ion Quantum Computers**

Society of Physics Students, Indiana University Chapter

Indiana University, Bloomington, IN

September 2020

1. **Purification of Trailer Hitch (TRAL) Antigen for Antibody Production**

2017 Integrated Freshman Learning Experience Research Symposium

Indiana University, Bloomington, IN

July 2017

POSTERS AND CONFERENCE PROCEEDINGS (AS PRESENTING AUTHOR)

6. **Towards fast error syndrome measurements in dual species atomic qubit arrays**

Sam Norrell, David Petrosyan, Cody Poole, Linipun Phuttitarn, Uday Singla, Trent Graham, Mohit Gupta, Swamit Tannu, Andreas Velten, Mark Saffman

56th Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics
Portland, OR

June 2025

5. **Progress Towards a Single-Wavelength Dual-Species Optical Atomic Trap Array**
Sam Norrell, Preston Huft, Ravikumar Chinnarasu, Trent Graham, Kais Jooya, Sanket Deshpande, Chengyu Fang, Mikhail Kats, Mark Saffman
6th Annual Chicago Quantum Summit
Chicago Quantum Exchange, Chicago, IL
November 2022
4. **Progress Towards a Single-Wavelength Dual-Species Optical Atomic Trap Array**
Sam Norrell, Preston Huft, Ravikumar Chinnarasu, Trent Graham, Kais Jooya, Sanket Deshpande, Chengyu Fang, Mikhail Kats, Mark Saffman
Midwest Cold Atom Workshop (MCAW) 2022
University of Wisconsin–Madison, Madison, WI
November 2022
3. **P-Body Alteration and Genetic Screening in Drosophila Intestinal Cells**
Sam Norrell, İlayda Altiok, Kasun Buddika, Nicholas Sokol
Fall 2019 Science, Technology and Research Scholars Research Symposium
Indiana University, Bloomington, IN
September 2019
2. **A Genome-Wide Screen for Necessary Stress Granule Protein Components in Drosophila Intestinal Cells**
Sam Norrell, Eunil Im, Mallory Sokolowski, Kasun Buddika, Nicholas Sokol
Fall 2018 Science, Technology and Research Scholars Research Symposium
Indiana University, Bloomington, IN
September 2018
1. **Regulatory RNA Pathways in Stem Cells and Differentiation**
Sam Norrell, Nicholas Sokol
2018 Summer Science Institute Poster Session
Indiana University, Bloomington, IN
June 2018