

# ADAM LISTER | CV

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## CURRENT

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**Position** Scientist I, University of Wisconsin – Madison

**Interests** New Physics Searches • Neutrino Oscillations • Detector Physics • Calibration • LArTPC Detector Development

**Collaborations** NOvA • DUNE

**Leadership** NOvA NuX Convener • NOvA Executive Committee

**Projects** *NOvA Sterile Neutrino Search* • Planning and executing search for sterile neutrinos using neutrino and antineutrino mode data from the NuMI beam.

*BNB Neutrinos at NOvA* • Leader in understanding neutrinos from NOvA's second beamline, including flux simulation, integration into NOvA software, and developing data quality requirements. This dataset will further improve our sterile neutrino searches.

*LArTPC Test Stand* • Early stages of setting up a test stand to measure never-before-measured transverse component of diffusion of ionisation electrons in LArTPCs.

## EDUCATION AND EMPLOYMENT

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| 2024-present | <b>Scientist I</b>   | <i>University of Wisconsin – Madison, USA</i> |
|              | Collaborator on the NOvA and DUNE experiments  |   |
| 2019-2024    | <b>Postdoctoral Research Associate</b>   | <i>University of Wisconsin – Madison, USA</i> |
|              | Collaborator on the NOvA and DUNE experiments  |   |
| 2015-2019    | <b>PhD Experimental Particle Physics</b>   | <i>Lancaster University, UK</i>               |
|              | Collaborator on the MicroBooNE experiment  |   |
|              | Thesis: Constraint of Systematic Uncertainties in an Electron Neutrino Search Using Muon Neutrinos at MicroBooNE |   |
| 2013-2014    | <b>MSc Particles, Strings, and Cosmology</b>   | <i>Durham University, UK</i>                  |
|              | Thesis: Neutrino Oscillations in Long-Baseline Experiments   |   |
| 2010-2013    | <b>BSc Astrophysics (1st class)</b>  | <i>Aberystwyth University, UK</i>             |

## AWARDS

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- 2019 **Lancaster University Department Prize**
- 2018 **Fermilab Neutrino Physics Center Fellowship, \$10,000**
- 2017 **Poster Prize, 50th Annual Fermilab Users Meeting**

## LEADERSHIP

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- 2024-present **NOvA NuX Group Convener**  
Managing analyses searching for New Physics in neutrino oscillations. Currently six analyses underway, each targeting high-impact journals
- 2022-2024 **NOvA Detector Systematics Group Convener**  
Managed delivery of simulation improvements, including updated Geant4, improved neutron handling, and detector simulation improvements • Delivered updated calibration scheme which increased speed and reduced failure rates
- 2020-2022 **NOvA Production Group Convener**  
Managed delivery of largest ever file production • Maintained grid submission scripts • Developed new monitoring tools • Developed new production model, enabling backprocessing of 1 PB of cosmic data

## SERVICE & COMMITTEES

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- 2025 **Conference Session Chair**  
Session chair at Lepton-Photon 2025.
- 2025-present **NOvA Executive Committee**  
Elected by collaboration as early career member of executive committee. The executive committee advises the spokespeople on science and management.
- 2025-present **NOvA Public Website Manager**  
Manager of the public-facing website for the NOvA Collaboration.
- 2024-2025 **NOvA Workshop Organiser**  
Planned and hosted various workshops for the NuX group for the NOvA collaboration, focusing on supporting ongoing analyses.
- 2023-2025 **NOvA Analysis Review Committee**  
Internal reviewer for Seasonal variation of cosmic-ray muons analysis.
- 2022-2023 **DUNE Plot Style Committee**  
Delivered recommendations for a cohesive style that accounted for accessibility. This style is being used for DUNE publications.

## MENTORING

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- 2023-present **Shivam** *Graduate Student, Indian Institute of Technology, Guwahati*  
2021-present **Anna Cooleybeck** *Graduate Student, University of Wisconsin – Madison*  
2019-2022 **Harry Hausner** *Graduate Student, University of Wisconsin – Madison*

## PUBLIC OUTREACH & WORKSHOPS

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- 2025 **Featured in APS Physics Magazine, Physics World for NOvA Results**  
2024-present **NOvA Social Media Manager**  
2023-present **NOvA Experiment Facility Tour Guide**  
2022, 2024 **Marched with Fermilab LGBTQ+ group (Spectrum) at Pride parades**  
2018 **Saturday Morning Physics On-Site Coordinator**  
2018 **MicroBooNE Experiment Facility Tour Guide**  
2018 **“Particle Physics in the USA”, Lancaster University Masterclass**  
2017 **LAr and High Voltage Station, Fermilab Open House**  
2015-2016 **Special Relativity Workshop, Lancaster University Masterclass**

## PRESENTATIONS

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- Aug 2025 **Lepton-Photon 2025** *Contributed Talk*  
Beyond Standard Model Neutrino Oscillation Results from NOvA  
Jun 2025 **WIN 2025** *Contributed Talk*  
Beyond Standard Model Neutrino Oscillation Results from NOvA  
Apr 2025 **University of Chicago** *Invited Colloquium*  
Looking for Sterile Neutrinos with the NOvA Experiment  
Apr 2025 **University of Cincinnati** *Invited Seminar*  
Sterile Neutrinos with the NOvA Experiment: Where Do We Go From Here?  
Apr 2025 **University of Mississippi** *Invited Colloquium*  
Looking for Sterile Neutrinos with the NOvA Experiment  
Jun 2024 **Neutrino 2024** *Poster*  
Improving NOvA's Sterile Neutrino Search with the Booster Neutrino Beam  
Dec 2023 **NuPhys 2023** *Invited Talk*  
Neutrino Oscillations at NOvA  
Sep 2023 **Cornell University** *Invited Seminar*  
Searching For Sterile Neutrinos With The NOvA Experiment

- Dec 2022 **CPAD Workshop 2022** *Contributed Talk*  
Effects of Ionisation Electron Diffusion on Calibrations in LArTPCs
- Jun 2022 **55th Annual Fermilab Users' Meeting** *Invited Talk*  
Probing Neutrino Oscillations at The NOvA Experiment
- Jun 2020 **Neutrino 2020** *Poster*  
Event Selection and Systematics for the NOvA Sterile Neutrino Search
- Dec 2018 **University of Wisconsin – Madison** *Invited Seminar*  
MicroBooNE and the Path to Resolving the MiniBooNE Low-Energy Excess
- Mar 2018 **IOP HEPP and APP Meeting** *Contributed Talk*  
Measuring Electron Diffusion in MicroBooNE
- Jun 2017 **50th Annual Fermilab Users' Meeting** *Poster*  
Towards a Longitudinal Electron Diffusion Measurement in MicroBooNE
- Jul 2016 **Neutrino 2016** *Poster*  
Measurements of  $\nu_\mu$  CC Interactions by the MicroBooNE Experiment