ADAM LISTER | CV

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CURRENT

Position Scientist I, Univeristy 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

2024-present **Scientist I** *University of Wisconsin – Madison, USA*
Collaborator on the NOvA and DUNE experiments

2019-2024 **Postdoctoral Research Associate** *University of Wisconsin – Madison, USA*
Collaborator on the NOvA and DUNE experiments

2015-2019 **PhD Experimental Particle Physics** *Lancaster University, UK*
Collaborator on the MicroBooNE experiment
Thesis Title: Constraint of Systematic Uncertainties in an Electron Neutrino Search Using Muon Neutrinos at MicroBooNE

2013-2014 **MSc Particles, Strings, and Cosmology** *Durham University, UK*
Thesis Title: Neutrino Oscillations in Long-Baseline Experiments

2010-2013 **BSc Astrophysics (1st class)** *Aberystwyth University, UK*
Dissertation Title: Dynamics of Solar Filaments

LEADERSHIP

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 an 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

AWARDS

2019 **Lancaster University Department Prize**

2018 **Fermilab Neutrino Physics Center Fellowship, $10,000**

2017 **Poster Prize, 50th Annual Fermilab Users Meeting**

MENTORING

2023-present **Shivam** *Graduate Student, Indian Institute of Technology, Guwahati*

2021-present **Anna Cooleybeck** *Graduate Student, University of Wisconsin – Madison*

2019-2022 **Harry Hausner** *Gradaute Student, University of Wisconsin – Madison*

PRESENTATIONS

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 Iionisation 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 ν_μ CC Interactions by the MicroBooNE Experiment

PUBLIC OUTREACH & WORKSHOPS

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**

SERVICE & COMMITTEES

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.