JONATHAN TAYLOR

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https://publons.com/researcher/AAF-3537-2020/

Profile

Condensed matter physicist with and excellent track record in leadership at research infrastructures with expertise in neutron instrumentation, scientific computing, research data management and project management. Co-author of over 120 publications.

Experience

2023 - Neutron Scattering Division Director ORNL

Responsible for leading the division that operates 30 state of the art neutron scattering instruments at the Spallation Neutron Source and High Flux Isotope reactor to deliver the scientific user program for NScD.

2022 - 2023 Program Manager for Neutron Data and Computing Neutron Sciences Directorate ORNL

Responsible for coordination of activities that deliver scientific data and data services to support the scientific user program of the Spallation Neutron Source and the High Flux Isotope reactor at ORNL.

2021 - 2022 Neutron Scattering Systems (NSS) Head of Division and NSS sub project leader.

Responsible for the ESS subproject to deliver 15 state of the art Neutron instruments, bunker shielding and target interface systems. NSS budget 361€M. The role includes significant leadership within ESS and with the ESS in-kind partners (In-kind scope 209€M). My objective was to re-optimize the NSS subproject project structure and its interface and relationship with in-kind partners. During the period I was a key member of the team responsible for the re-baseline of the ESS project which secured financial stability for ESS and added considerable updates to the project reporting methodology.

2017 - 2021 Head of Data Management and software Centre (DMSC) European Spallation Source ERIC.

Responsible for the delivery of the scientific computing scope for the European spallation Source ERIC. The objective of the DMSC and my objective as head of DMSC is to provide ESS with world leading scientific computing and develop an environment that allows science and staff to flourish at a greenfield research infrastructure. The role included significant project and budget management responsibility.

2014 - 2017 Instrument Data Group Leader DMSC European Spallation Source.

Responsible for the ground up development of the ESS experiment control system and data processing pipeline and data chain.

2010 - 2014 **Senior Scientist ISIS Pulsed Neutron and Muon Facility Rutherford Appleton Laboratory.**

Responsible for delivery of the the MARI science program, construction and commissioning of the Merlin and LET spectrometers, development of 3He polarized neutron capability for ISIS. Project lead for the Mantid project at ISIS responsible for staffing, scientific stagey and budget planning (2011-2014).

2002 - 2010 **Instrument Scientist ISIS Pulsed Neutron and Muon Facility Rutherford Appleton Laboratory.**

1999 - 2002 **Research Fellow Magnetic Compton Scattering Group, Department of Physics, University of Warwick.**

Education

2000 PhD Condensed Matter Physics Loughborough University UK

1996 BSc (Hons) Physics - DeMontfort University Leicester UK

Professional Responsibilities and Awards

- Advanced Photon Source Computing Advisory Committee Chair 2024 -
- Advanced Light Source Scientific advisory committee member 2023 -
- JPARC neutron advisory committee member 2022 - .
- Executive Board member for the Photon and Neutron Open Science Cloud project (EU grant agreement No 823852) (2019-2022)
- Member of the STFC Pace Project Governance Board 2018 - .
- Visiting Professor, Niels Bohr Institute, Copenhagen University 2017-2022
- Reviewer for the Department of Energy Office of basic science AI/ML for RIs and early careers proposals
- Chair of Assessment of the Effectiveness of Data Collection, Reduction, and Analysis review panel for Oak Ridge National Lab neutron sciences. (2018)
- Member of the Data Acquisition and Analysis review board for NSLSII
- Referee for PRL, Phys RevB NIMA.
- Referee for beam time access panels at NCNR- NIST neutron scattering centre.
- Co supervision of 10+ students at PhD and Masters level

Grants, Awards.

2023 - Co PI DOE BES Illumine project

2020 -2022 Co-investigator SOLID Imaging. Danish Ministry for Research Lighthouse program.

2020 -2022 Co-investigator Q-MAT Strongly correlated electrons systems Danish Ministry for Research Lighthouse program.

2018 - 2022 Co-Investigator Photon and Neutron Open Science Cloud (EU grant agreement No 823852)

2011-2014 EPSRC, Spin density and Fermiology EP/J002496/1

Selected Publications H index 27 https://publons.com/researcher/AAF-3537-2020/

1. Chen, S., Hauser, N., Hester, J. et al. Opportunities and challenges in data sharing at multi-user facilities. Nat Rev Phys 5, 83–86 (2023).

2. The instrument suite of the European Spallation Source. Andersen et al Nima Volume 957, 21 March 2020, 163402

3. Is artificial intelligence magic dust for big-science facilities? Heloisa N. Bordallo, Christina Lioma, Jonathan Taylor and Dimitri N. Argyriou IUCrJ (2020). 7, 1–2

4. Extreme Fermi surface smearing in a maximally disordered concentrated solid solution H Robarts et al Phys. Rev. Lett. 124, 046402 (2020)

5. Phase transition of H2 in sub-nanometer pores observed at 75 Kelvin. Olsen, Raina; Gillespie, Andrew; Contescu, Cristian; Taylor, Jonathan; Pfeifer, Peter; Morris, James. ACS Nano, 11 (11), pp 11617 (2017)

6. The hows and whys of data. J. Taylor. Physics World. Focus on neutron science October 2 2017

7. Vacancies, disorder-induced smearing of the electronic structure, and its implications for the superconductivity of anti-perovskite MgC0.93Ni2.85. David Ernsting, David Billington, Thomas E. Millichamp, Rebecca A. Edwards, Hazel A. Sparkes, Nikolai D. Zhigadlo, Sean R. Giblin, Jonathan W. Taylor, Jonathan A. Duffy & Stephen B. Dugdale. Scientific Reports, 7(1), 10148. (2017)

8. Thermodynamic and Kinetic Fragility of Freon 113: The Most Fragile Plastic Crystal. A. Vispa, M. Romanini, M. A. Ramos, L. C. Pardo, F. J. Bermejo, M. Hassaine, A. I. Krivchikov, J. W. Taylor, and J. Ll. Tamarit. Phys. Rev. Lett. 118, 105701 (2017)

9. Magnetic frustration, short-range correlations and the role of the paramagnetic Fermi surface of PdCrO2. David Billington, David Ernsting, Thomas E. Millichamp, Christopher Lester, Stephen B. Dugdale, David Kersh, Jonathan A. Duffy, Sean R. Giblin, Jonathan W. Taylor, Pascal Manuel, Dmitry D. Khalyavin & Hiroshi Takatsu. Scientific Reports 5, Article number: 12428 (2015)

10. Mantid—Data analysis and visualisation package for neutron scattering and μSR experiments. O. Arnold, et al., NIM A, 764, 11 156 (2014).

11. Spin Waves and Revised Crystal Structure of Honeycomb Iridate Na2IrO3. S. K. Choi, R. Coldea, A. N. Kolmogorov, T. Lancaster, I. I. Mazin, S. J. Blundell, P. G. Radaelli, Yogesh Singh, P. Gegenwart, K. R. Choi, S.-W. Cheong, P. J. Baker, C. Stock, and J. Taylor. Phys. Rev. Lett. 108, 127204 (2012)

12. LET, a cold neutron multi-disk chopper spectrometer at ISIS. Bewley, RI, Taylor, JW, Bennington, SM. NIM A 637 128 (2011)