

PARTICULARS OF APPOINTMENT

THE UNIVERSITY OF MANCHESTER

FACULTY OF SCIENCE & ENGINEERING

HENRY ROYCE INSTITUTE

DATA CURATOR – CULTURAL FOCUS

VACANCY REF: SAE-030117

Salary:	£37,694 to £46,049 per annum depending on relevant experience
Hours:	Full-time (35 hours per week / 1.0 FTE)
Duration:	Fixed-term until 31 st March 2027
Location:	Hybrid working – The University of Manchester and working from home
Responsible to:	Dr Sarah-Jane Clelland (Senior Facility Manager)

Enquiries about the vacancy, shortlisting and interviews:

Name: Sarah-Jane Clelland

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Background:

The [Henry Royce Institute](#) (Royce), a UKRI-funded national institute, supports advanced materials research and innovation. With its Hub at The University of Manchester, the Institute has spokes at ten Partner and Associate organisations: the Universities of Sheffield, Leeds, Liverpool, Cambridge, Cranfield, Oxford and Imperial College London, as well as at the UK Atomic Energy Authority, the National Nuclear Laboratory and the Advanced Forming Research Centre Catapult. Royce’s vision of ‘advanced materials for a sustainable society’ is delivered through:

- Enabling national materials research, collaboration, fore-sighting and strategy
- Providing access to world-leading facilities and research expertise
- Catalysing industrial collaboration and accelerating translation
- Fostering materials science skills development, innovation, training and outreach

Materials science is at the beginning of a necessary cultural shift that will see increasing use of materials informatics approaches. Critical to this is wider availability of the research data, stored in accordance with modern principles of open and reproducible research. This will require new data infrastructures (both hardware and software) and a change in the way that people work. Royce has a key role to play in driving this change in culture and practice and in advocating

for support from government. Following the completion of a series of short (four-month) pilot projects funded by a grant from the Engineering and Physical Sciences Research Council (EPSRC) we have started to establish processes and systems for the long-term storage of, and access to, materials research data. To implement, develop and promote a data infrastructure we procured funding to support two 'Data Curators' for 12 months in the first instance and we are now continuing this project into the longer term with bids submitted for a CDT and AI Hub.

Overall Purpose of the Role:

The Data Curation Team have complementary skills. Together they will form a team to achieve two tasks:

1. To act as a bridge between the academic and the data repository project
2. To help develop the data archiving and retrieval infrastructure, its functionality and capability

The Curators will also be required to engage with national and international materials research data infrastructure initiatives. They will be expected to act as advocates for these new ways of working – helping those of us who are enthusiastic for a change in culture, encouraging those who are suspicious of the benefits of storing their data for wider consumption to take part, and helping to find ways to lower barriers to adoption of best practice.

There is a focused role description for each curator, one with a bias towards technical aspects of research data management (Data Curator – Technical Focus) and the other with a bias to towards supporting cultural change and advocating best practice (Data Curator – Cultural Focus). **This role is for Data Curator – Cultural Focus and the post holder will be the lead curator for cultural and advocacy responsibilities.** They will also support responsibilities of the Data Curator – Technical Focus and there will be shared responsibilities core to both roles.

Data Curation Team Objectives

- Development of Royce guidelines for Data Management Plans and ongoing support in research data management for research proposals and ongoing research via regular drop-in clinics and responsive assistance.
- Data Indexing: Roll-out of Ampletracks indexing system to the whole of Royce (including bringing the system within the university IT ecosystem and finalising a fully-documented open-source release of the code) with month-on-month acceleration in addition of entries and new users.
- PSDI: Successful delivery of an informal materials pilot as part of Phase 2 of PSDI and incorporation of a materials pilot in the core of Phase 3.
- Support for Royce-led applications in the Materials 4.0 area (currently the AI Hub for Materials and the Materials 4.0 CDT, but to include future bids).
- Development of an initial training offering in open science and materials data for Royce, including the development of six bespoke primers on key topics and the curation / collation of a larger quantity of pre-existing material.
- Delivery of four training events in open science and materials data.
- Completion of first phase of the online data handbook hosted by Royce.
- Creation of an online platform to link together all elements of Royce data, e.g., handbook, training resources, link to Ampletracks.
- Delivery of the Materials 4.0 seminar series, with gradually improving attendance.
- Provision of quarterly management reports on the performance of Royce researchers against key open science metrics.
- Provide representation on PSDI team and in Royce Modelling and Simulation theme steering group.

Further team objectives have been defined if successful in our CDT and/or AI Hub Bids.

- Work with CDT team to bring together existing training and data resources within CDT structure.
- Work with CDT team to extend training (and other) resources on offer to fulfil needs of CDT students and other stakeholders.
- Provide representation to CDT Management Committee.
- Ensure data and reproducibility related activity in the AI Hub is integrated into Royce's broader activity.
- Support AI Hub team in developing policy and practice guidelines for all researchers funded by the AI Hub.
- Support AI Hub team with training of researchers.
- Provide representation to AI Hub management group

Data Curation Team: Key Shared Responsibilities, Accountabilities and Duties:

Royce is an evolving, dynamic organisation and the appointees will therefore be expected to demonstrate flexibility and adaptability to meet its developing needs. The indicative range of duties is expected to include, but is not limited to, the following:

- To have an understanding of materials science and its associated diversity of data, leading to an appreciation of the complexity and challenges of the data produced and how it is consumed
- To own and deliver specific projects, alone or as part of a team, applying knowledge, skills and experience to successfully deliver against agreed objectives
- To establish and nurture relationships with stakeholders across the wider materials community to comprehend experiences and identify their requirements, both current and future
- To demonstrate an understanding of the issues of interest to materials scientists and propose viable solutions, taking into account their needs and requirements
- Develop strong working relationships with colleagues across the Royce Partners and at The University of Manchester
- Undertake the above duties in accordance with the requirements of the University's and Royce's equality & diversity policies, health & safety policies, and their financial regulations
- Maintain confidentiality of information in line with data protection requirements and University policy and ensure information governance disciplines are embedded within working practice
- Engage in continuous personal and professional development in line with the demands of the role, including undertaking relevant training and development activities
- Undertake any other duties commensurate with the grade

Primary Responsibilities for Data Curator – Cultural and Advocacy Focus:

- To collaborate with the Royce team and academic leaders (at all career stages) to find ways to drive the required culture change.
- To support grant holders and funding applicants with establishing best practice in research data management within their teams and to develop a package of resources to assist with this.
- To own the development of a Royce Institute "Research Data Management Portal", which aggregates the RDM handbook, links to training, a calendar of internal and external training events, links to resources at Royce partners (e.g., University of Manchester library resources).

- To support the Royce team in investigating, curating and developing a training offering for various parts of the UK materials community, including as part of a possible future AI Hub or CDT.
- To investigate and report on the current barriers to full compliance with funders' requirements on data sharing and retention.
- To propose ways to overcome barriers to research data best practice (such as new policies, processes and educational activities) and implement these solutions.
- To develop and inhabit the role of "Materials data advocate", becoming an ambassador for proper, compliant open-data practice.
- To seek to expand upon the current programme of engagement with new and varied activities and events to promote best practice in materials research data.
- To contribute to the team's wider programme of activities that will broaden interest in research data management within both Royce and the wider materials science community.
- To track the growth of the community and report on key developments and performance metrics.

Secondary Responsibilities for this role (Technical focus):

- To drive the ongoing development of Ampletracks, including bringing the platform within the university's IT system and to work with other software providers as required to help create, maintain and develop a research data infrastructure for the Royce Institute.
- To support integration of a materials science case study into the PSDI project and assist the academic representative in championing materials science's needs within PSDI.
- To work with research groups in identifying their technical requirements with respect to research data, including developing fit-for-purpose processes for digital lab books and meta-data specifications for published data.
- To keep up to date on techniques and trends in technical aspects of research data management and to communicate these developments to the Royce community.
- To propose, scope and deliver improvements to Royce infrastructure to facilitate research data best practice, e.g., edge compute services for key facilities, automatic Ampletracks indexing of data collection sessions.
- To maintain and develop personal technical skills in aspects of research data management and data science as appropriate and with agreement with manager.
- To propose ways to overcome barriers to research data best practice (such as new infrastructure, software tools) and implement these solutions.
- To lead on developing, and then delivering, strategies and business cases for future Royce activities in this area
- To provide technical assistance to other Royce teams in developing performance metrics and dashboards for various areas of Royce activity (e.g., analysis of equipment usage)

Essential Knowledge, Skills and Experience:

- Degree (or an equivalent qualification) in a physical sciences, engineering or related discipline
- Postgraduate degree in a physical sciences, engineering or related discipline or equivalent industry/research experience
- A good understanding of scientific and academic training and career pathways
- Proven ability both to work strategically and to solve operational problems in a timely and balanced manner using initiative and creativity working within a team or individually
- Excellent numeracy and IT skills, including the ability to evaluate and analyse quantitative data

- Excellent planning and organisation – determining a course of action by breaking it down into smaller steps and by planning and resourcing each of these, making allowance for potential problems
- Demonstrated experience of community engagement and moderation activities
- Demonstration of networking, collaboration and relationship building with those of similar interests
- Project management skills, with the ability to manage multiple events simultaneously, resolve problems and ensure optimal use of time and resources
- Outstanding presentation skills, both oral and written, in delivery of complex and conceptual ideas
- Effective communication and interpersonal skills (both orally and written), with the ability to adapt styles to suit different stakeholders and audiences
- Ability to act on own initiative and with autonomy to make independent decisions
- Time management skills to effectively and efficiently plan activities, and to work accurately and precisely under pressure to strict deadlines
- Knowledge of equality, diversity and inclusion, including of widening participation, and the issues that need to be considered in relation to training, skills and outreach

Desirable Knowledge, Skills and Experience:

- Experience of budget management and the ability to interpret financial information
- Experience of handling confidential information and communications sensitively
- Prior experience in community engagement or management work