Keynote

Advancing Open Science through Bioimaging – Evaluating OMERO Plus as a Research Data Management Solution

Richard Dennis, University of Copenhagen

Abstract

Bioimaging data's increasing volume and complexity in stem cell research pose significant challenges in data management, governance, and accessibility. At reNEW, where over 85% of research data originates from bioimaging workflows, the absence of structured data governance and standardized management practices has created inefficiencies in research reproducibility and Open Science initiatives.

This presentation explores the implementation and evaluation of OMERO Plus, a scalable and FAIR-compliant bioimaging data management platform, as part of a Proof of Concept (POC) at reNEW. We will discuss the current challenges in bioimaging data organization, the need for structured workflows, and how OMERO Plus supports Open Science principles by improving findability, accessibility, interoperability, and reusability (FAIR) of research data.

The POC methodology, including stakeholder engagement, technical implementation, and researcher-driven feedback, will be outlined to demonstrate how OMERO Plus enhances data workflows, metadata management, and research efficiency. Furthermore, this presentation will highlight the strategic importance of developing a Data Catalog and Discovery solution, ensuring compliance with institutional data policies and European Open Science initiatives.

By integrating OMERO Plus into reNEW's research ecosystem, we aim to establish a scalable, sustainable, and Open Science-driven approach to bioimaging data management, ultimately facilitating better collaboration, data sharing, and long-term research impact.

Richard Dennis is a Data Steward, Data Manager, and Data Champion Coordinator at the Novo Nordisk Foundation Center for Stem Cell Medicine - reNEW. With a strong background in librarianship, data stewardship, and research data management, he specializes in developing scalable and FAIR-compliant (Findability, Accessibility, Interoperability, and Reusability) data infrastructures that seamlessly integrate into research workflows. His work ensures that researchers can focus on their science while maintaining data integrity, compliance, and long-term usability.

Richard is an advocate for open science and collaborative data stewardship, actively contributing to several European Open Science Cloud (EOSC) initiatives, including FAIR-IMPACT EU, the EOSC FAIR Metrics and Data Quality Task Forces, RDA TIGER, and Skills4EOSC. He employs an Agile and researcher-driven approach to data management, ensuring that solutions are both flexible and aligned with the evolving needs of the scientific community. Through his work, Richard is committed to enhancing research reproducibility, accessibility, and innovation in data management and open science.