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Beyond the ELN: RSpace as an Integrator for Data and Metadata in the Research Data Lifecycle

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Research data management increasingly requires seamless integration of multiple components across the entire research lifecycle. While Electronic Laboratory Notebooks (ELNs) provide crucial functionality for experimental documentation, today's data-intensive research demands more comprehensive solutions that connect primary data generation, analysis, and preservation workflows.

This presentation explores how RSpace functions not merely as an ELN but as a central integrator that bridges the gap between everyday research activities and institutional RDM requirements. We demonstrate two practical implementation cases that showcase vertical interoperability illustrating how researchers can maintain focus on their scientific workflows while simultaneously enhancing data interoperability through machine-readable formats and standardized metadata.

Our first use case examines field collection data management, demonstrating how RSpace improves the FAIRness of physical samples and sample metadata by using globally resolvable identifiers throughout the entire research lifecycle. The second showcases RSpace's unique Data Management Plan (DMP) integration capabilities, allowing researchers to fulfill reporting requirements directly within their working environment rather than treating them as separate administrative exercises.

Both examples highlight RSpace's role in creating an infrastructure where persistent identifiers, standardized metadata, and repository connections coexist within researchers' daily workflows. This approach transforms data stewardship from an administrative burden into an integrated component of the research process, ultimately ensuring the reproducibility of research data and results without disrupting scientific productivity.

The presentation will also address collaboration with the NFDI, specifically highlighting RSpace as a reference example in the ELN focus group of PID4NFDI, creating synergies that provide practical tools for researchers across Germany. By sharing these concrete implementations, we aim to contribute to the broader conversation about practical data stewardship solutions that serve both individual researchers and institutional RDM objectives.

Abstract

Poster

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