Contribution ID: **39** Type: **Talk**

# HARMONise –Enhancing interoperability of marine biomolecular (meta)data across Helmholtz Centres

*Friday 5 April 2024 11:45 (15 minutes)*

Biomolecules, such as DNA and RNA, provide a wealth of information about the distribution and function of marine organisms, and biomolecular research in the marine realm is pursued across several Helmholtz Centers. Biomolecular (meta)data, i.e. DNA and RNA sequences and all steps involved in their creation, exhibit great internal diversity and complexity. However, high-quality (meta)data management is not yet well developed and harmonized in environmentally focused Helmholtz Centers. As part of the HMC Project HARMONise, we develop sustainable solutions and digital cultures to enable high-quality, standards-compliant curation and management of marine biomolecular metadata at AWI and GEOMAR to better embed biomolecular science into broader digital ecosystems and research domains. Our approach builds on a relational database that aligns metadata with community standards such as the MIxS (Minimum Information about any (x) sequence) supported by the International Nucleotide Sequence Database Collaboration (INSDC) to promote global interoperability. At the same time, we ensure the harmonization of metadata with existing Helmholtz repositories (e.g. PANGAEA). A web-based hub enables the standardized export and exchange of core metadata, e.g. with the Marine Data Portal (https://marine-data.de/), which will enhance the **findability** and **accessibility** of biomolecular (meta)data within and across research areas. The alignment of HARMONise-hosted metadata with domain-specific standards and the provision of data in the relevant exchange formats will facilitate **interoperability** with the Helmholtz knowledge graph (UNHIDE, https://docs.unhide.helmholtz-metadaten.de/intro.html) and global digital ecosystems (Ocean Info Hub of the UNESCO Ocean Data and Information System, https://oceaninfohub.org/). HARMONise thus specifically targets the advancement of F, A, and I in FAIR for biomolecular (meta)data, and supports Helmholtz researchers in delivering high-quality metadata to international data repositories. HARMONise connects with high-level international projects in the Ocean Biomolecular Observing Network (OBON) Programme of the UN Decade of Ocean Science, to further align our developments with global strategies and ensure Helmholtz-to-global interoperability. The project HARMONise (ZT-I-PF-3-027) is funded by the Initiative and Networking Fund as part of the Helmholtz Metadata Collaboration Project cohort 2021.

**Primary authors:** BIENHOLD, Christina (AWI Helmholtz Centre for Polar and Marine Research); BAYER, Till (GEOMAR); HARMS, Lars; KOPPE, Roland; NEUHAUS, Stefan; SANDER, Christian (AWI); SCHINDLER, Sophie (GEOMAR); SIEBERT, Isabell

**Presenter:** BIENHOLD, Christina (AWI Helmholtz Centre for Polar and Marine Research)

**Session Classification:** Session 4: Data Initiatives

**Track Classification:** Data Initiatives