

PROJECT SUMMARY

The goal of Mantle is to create a software platform that enables non-data scientists to easily and efficiently apply metadata to their own datasets. Mantle is a free and open-source research and software development project, developed under the Apache License 2.0, with all code hosted on GitHub. Mantle will be an open-source web platform designed for the curation, integration, and sharing of public health related data. By incorporating previously developed metadata standards and public health ontologies, and automating their application, Mantle will be designed to meet the data needs of a wide variety of public health users. Public health researchers, in the office, field, or the lab, will be able to upload a wide variety of unstructured and structured datasets to Mantle in a variety of commonly used formats.

Mantle's users can belong to organizations and teams, and individual datasets can be grouped together into larger projects, all with group-level access permissions. These features enable scientists to collaborate across geographic, institutional, and disciplinary boundaries to accomplish large-scale data collection efforts not otherwise possible. Mantle will also include a number of open-access datasets from EcoHealth Alliance's partners, and biosurveillance data, that are openly available for users to combine with their own data or content.

Users of Mantle will be able to set fine-grained sharing and privacy controls on uploaded datasets to share or protect their data and industry best practices will be employed to protect all data uploaded to Mantle. Once users create and sign into their user account, Mantle users will be able to examine publicly available and obfuscated datasets (to protect privacy) in a number of views appropriate to their content, including tables, maps, and charts. Additionally, Mantle will display datasets from different data sources alongside one another and save and export combined datasets. Users with export privileges will be able to download data in a number of formats for use with external software (e.g., .xlsx, .csv, .txt, .shp, .shx, .dbf, etc.).

Mantle will uniquely provide free access to high fidelity infectious disease data, which will help enable scientists, practitioners, and policymakers to tackle the world's biggest infectious disease threats. Furthermore, Mantle will enable faster response to infectious disease threats as data can be continuously uploaded, validated, and contextualized via Mantle's API, rather than waiting for data to be collected and integrated after infectious disease threats are identified. Open access health data and open source biosurveillance software will help infectious disease and biosurveillance research advance, and Mantle will fill a critical gap in emerging infectious disease knowledge and infectious disease preparedness. Mantle will generalize across scientific fields as more big data ontologies are created, and will be able to be used broadly.