Publishing Transparent & Reproducible Computational Research with Whole Tale

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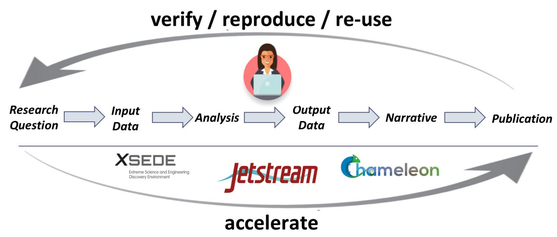
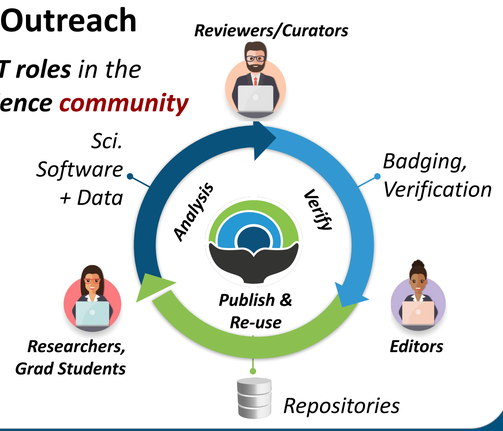
What is **Whole Tale**?

- NSF-funded **Data Infrastructure Building Blocks** (*DIBBs*) project*
- Open source platform to support **computational transparency** & **reproducibility**
- Simplifies the process of **creating, publishing & verifying** computational research artifacts (which we call **tales**)
- **Whole Tale = Infrastructure + Education + Outreach**

Whole Tale (WT)** from the **user's perspective



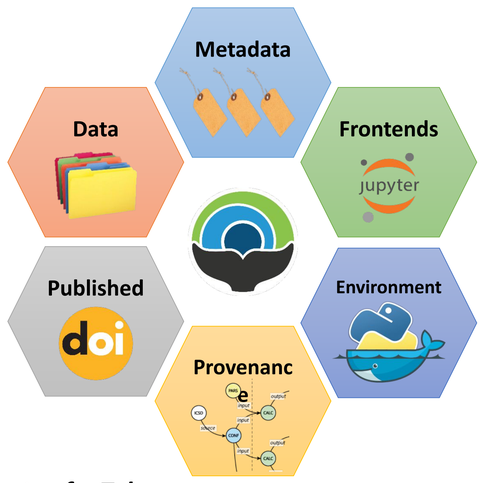
WT roles** in the **science community



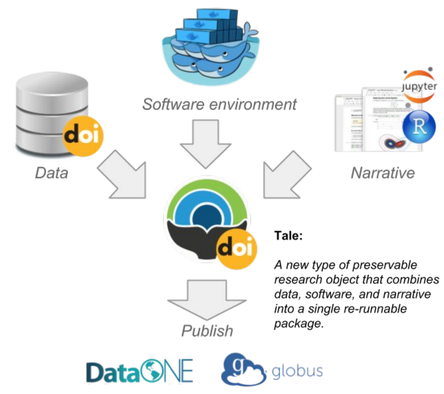
*#1541450: Merging Science & Cyberinfrastructure Pathways: The Whole Tale

What's **in** a Tale?

- **Tale** = executable **research object** that captures **data**, **code**, and complete **software environment** along with the (traditional) science **narrative**
- Standards-based tale **format**: BagIt-RO, JSON-LD metadata, …

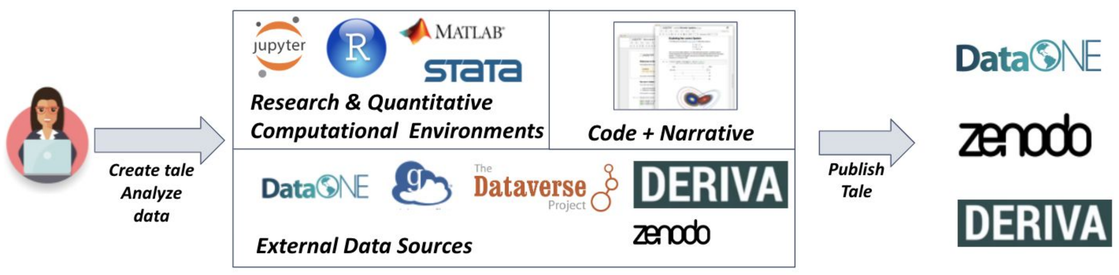


***Elements** of a Tale*

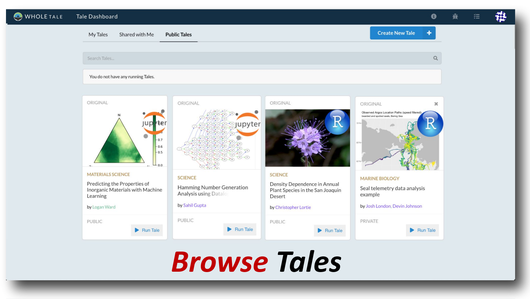


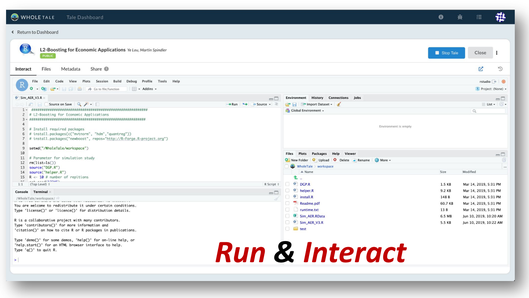
***Publishing** a Tale to DataONE, Globus, Zenodo, …*

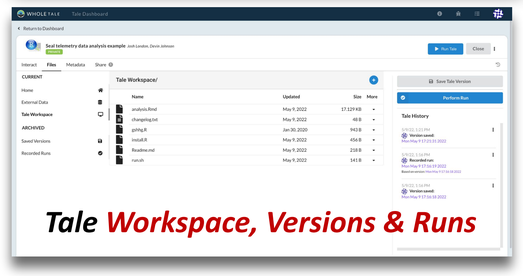
Whole Tale **Platform**

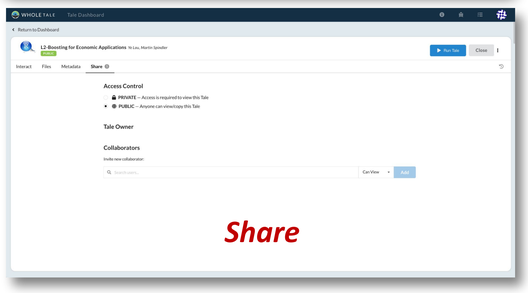


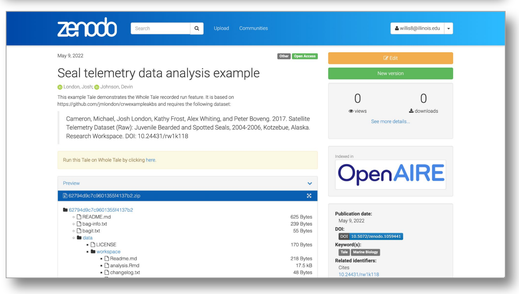
- **Authenticate** using your institutional identity
- **Access** commonly-used **computational environments** including **licensed** software
- Easily **customize** your environment
- Create or upload **your data and code**
- Cite and access externally **published data**
- **Share** with other users
- Deposit to **archival repositories**
- Get a **persistent identifier**



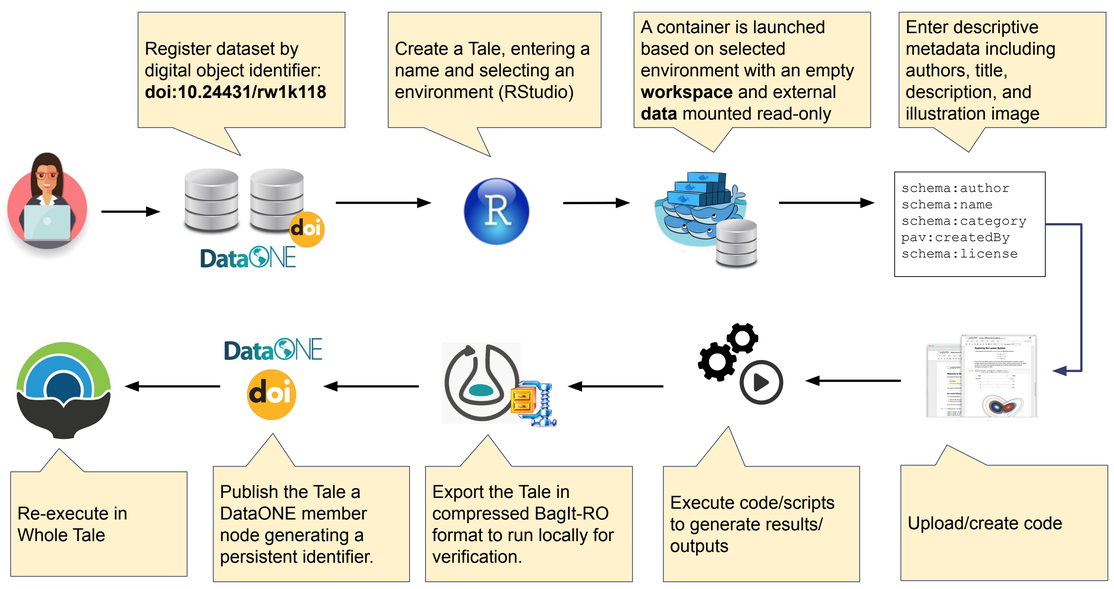








Tale Creation **Workflow**



Key Features

- Web-based platform for interactive and exploratory data-driven and computational- analysis using popular environments (JupyterLab, RStudio, MATLAB, Stata)
- Versioning, sharing, exporting, and publishing
- "Recorded runs" ensure that the specific version of code and data are captured along with outputs/results for publication
- Integration with popular research repositories
- Creates standards-based archival research artifacts

Additional Features (coming soon)

- Publishing container images
- Support for larger-scale computations (memory/cores)
- Improved accessibility/universal design
- Support for VS Code

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https://wholetale.org
https://dashboard.wholetale.org
https://github.com/whole-tale