

MANAGEMENT AND COORDINATION PLAN

1 Roles of Individuals Involved

Below, we identify the specific roles that each Investigator and Senior Personnel member will occupy.

1.1 University of Illinois

The University of Illinois will be the primary coordinating institution; tasked with the main development tasks, as well as the domain context development outside of weather and seismology/tomography, the primary development of `yt` will occur here.

Matthew Turk (PI): Turk will coordinate broad goals and conduct development, as well as act as a liaison and advisor for liaising between communities of researchers. He will also participate in conceptualization, development and implementation of the technical deliverables. Turk will be mentoring the funded graduate student at the iSchool at University of Illinois at Urbana-Champaign, where he is an assistant professor. Turk will be mentoring and supervising the funded postdoc, who will be split between domain research and development of `yt` functionality.

Nathan Goldbaum (Co-I): Goldbaum will be taking on the role of the funded Research Scientist. As a Research Scientist, he will be directly coordinating the work conducted in this proposal, conducting development himself (specifically on the technical aspects of domain contexts, non-spatial indexing, symbolic fields and non-local analysis) and leading development meetings and code review. Goldbaum will also coordinate meetings between the development team, the project manager and the advisory board. Goldbaum will also be coordinating workshops held at NCSA.

Kacper Kowalik (SP): Kowalik has designed, implemented and maintained the `yt` continuous integration system. He will be responsible for ensuring that the new datasets, new functionality and new tests are integrated into this continuous integration system.

Meagan Lang (SP): Lang has designed and implemented fast particle access methods for `yt`. As part of this proposal, she will be responsible for integrating those methods with incoming domain types, and working to ensure that the new domain contexts have their needs met by the existing particle infrastructure.

1.2 University of Wisconsin

Leigh Orf (PI): Orf will be coordinating the Weather domain context. This specifically includes the codification of jargon, outreach to domain scientists, and conducting development of the Weather domain context. Orf will also be applying `yt` to his own work, which will guide further development, and conducting direct and indirect outreach to other domain scientists in his field.

Christina Koch (SP): Koch will coordinate the development of curricula for Data Carpentry based on her previous experience training Software/Data Carpentry instructors and managing open source lesson development within Software Carpentry. This will include guiding the pedagogical aspects of training, instruction and curriculum content, as well as organizing the “hackathons” for building the curricula.

Tracy Teal (Subaward PI): Teal will coordinate interaction between the Data Carpentry organization and the curriculum development efforts at Wisconsin. This will include communication with Koch, other PIs/SP, and interactions with the Data Carpentry training cohort and advisory boards. Teal will ensure that curricula are developed in such a way as to ensure their sustainability within the Data Carpentry organization as a whole, and to ensure they meet the standards and processes of Data Carpentry.

1.3 Columbia University

Ben Holtzman (PI): Holtzman will be coordinating the Seismology and Tomography domain context. He will continue to develop applications for `yt` in visualization of seismic wave propagation

and tomographic images of the Earth’s interior, overseeing a postdoctoral researcher in the first two years of the project. They will codify methods for visualization of these two core aspects of seismology and teach them to seismologists at LDEO to develop Software Carpentry curricula for the broader research community. Holtzman will also be applying `yt` to his own work in public education through planetarium shows and other media, in collaboration with the postdoc and Turk’s group at NCSA. They will be ensuring that developments of `yt` in this domain context align with both research and outreach goals, including for development of material for planetariums and internet distribution.

2 Project Management and Coordination Mechanisms

The University of Illinois will host a project manager (budgeted at 20% time) focused on this project. This individual will coordinate in-person meetings (budgeted under “travel” in the proposal) as well as remote coordination meetings, deliverables and milestones, and development of plans for in-person working groups and workshops. The domain context advisory board will conduct virtual meetings no less than once a year, with much more frequent (monthly or more) progress reports and discussions occurring over asynchronous methods of communication such as email.

The `yt` project itself has a number of existing project mechanisms which will be augmented as part of this proposal. Where possible, existing mechanisms will be used; specifically, planning (YTEP documents), code review and bug tracking (Bitbucket), continuous integration and testing (Jenkins running on servers hosted at NCSA) project planning and coordination (Trello), and teleconference software (typically Google Hangouts).

In support of this project, we will deploy:

- A new public mailing list for discussion of domain context development and outreach progress
- Milestone and goal-setting tracker
- Public advisory board mailing list

These *augment* but do not replace the existing “developer” and “user” mailing lists for `yt`; whenever possible, we will direct traffic there. Additionally, `yt` has a very active, open-invitation Slack channel that will be utilized for coordination of this project.

We note here that by default, *all* communication regarding this project will be public. This includes goal-setting, milestone evaluation, and evaluation of components.

3 Budget Support

We identify the travel section, which will fund annual visits between research groups, as well as workshop funding at UIUC for in-person meetings, as budget items in support of this management plan. We will be utilizing cloud-hosted open source solutions, most of which are well within the “free” tier, for communication.