**Developers’ Workshop**

*Day 1: We will focus on understanding existing tools, how they fit in the reproducibility pipeline, their benefits and limitations. Although there are a number of tools that support different aspects of reproducibility, they are not widely known. One of our goals is for the developers to better understand these tools, their capabilities and limitations. We will have demos/presentations of the tools interspersed with discussions. A tentative agenda follows.*------------------------------------------------------------------------------------------------------  
  
9:00 - 9:30 Welcome and broad overview and discussion on the different levels of reproducibility and the key requirements for a reproducibility framework  
  
9:30 - 10:30 Talks and demos of tools that capture the specification of experiments, including scientific workflows and notebooks

Brian Granger - iPython

Carole Goble – Taverna

Andrew Davison – Sumatra

Ian Foster - Sole

10:30 - 10:45  Coffee break   
  
10:45 - 11:30 Talks and demos of tools that capture the specification of experiments, including scientific workflows and notebooks

Anton Nekrutenko - Galaxy

Sergey Fomel - Madagascar

David Koop - VisTrails

11:30 – 12:30 Discussion on important features and limitation of the tools  
  
12:30 -- 1:30  Lunch   
  
1:30 -- 2:15 Talks on environment capture and virtualization

Fernando Chirigati - ReproZip

Mahadev Satyanarayanan – VMs

?James Frew - ES3

2:20 -- 3:05 Talks on publishing code and data

Johanthan Marcow – DuraSpace

Merce Crosas – Data Verse

Geoffrey Brown – Virtual CD-ROM Collections

3:05 – 3:15 Coffee break

3:15 – 4:00 Talks on test/validation, requirements and practices

Brian Nosek and Jeff Spies – Open Science Framework

Matthias Troyer – Reproducibility in Quantum Physics

Kyle Cranmer – Reproducibility in High-Energy Physics  
  
4:00 – 5:00 Open Discussion  
           Possible topics: How do existing tools fit together? What are their limitations? How handle versioning large data? How to simplify the process of capturing and sharing experiments? How to handle large data sets? How to archive experiments? How to reproduce experiments that require specialized hardware?

5:00 – 6:00 Poster session: Tool developers will have the opportunity to give one-on-one demos to workshop participants  
  
6:30 Dinner

*Day 2: We will focus on the design of a blueprint for a unified reproducibility framework and discuss models for creating and sustaining a community of developers for reproducibility tools.*  
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9:00 - 10:30   Breakout groups to define the ideal architecture of a reproducibility framework

*3 groups: capture/representation, archival, test/validation*

10:30 - 11:00  Coffee break

11:00 – 12:30 Discussion on the proposed architecture, how the existing tools fit in the architecture, and what the gaps are; start to draft white paper with findings

12:30 – 1:30 Lunch (catered lunch at NYU Poly)   
  
1:30 – 3:00 Discussion on how to create and sustain a community of developers of reproducibility tools

3:00 – 3:30 Coffee break

3:30 – 5:00 Finalize white paper