

**iPlant Cyberinfrastructure and Phenomics**  
**Wed, 4:00 PM**

Ramona Walls

- I. Overview of iPlant
  - A. What is cyberinfrastructure (CI) and why does it matter for field phenomics?
    1. CI is hardware, software, and people
    2. Technological and sociological solutions to the challenges of large-scale computational biology
    3. Discussion of computational bottlenecks in field phenomics
  - B. iPlant tools and services
    1. Data Store
    2. Discovery Environment
      - a) Data management
      - b) Analyses
    3. Atmosphere (Cloud computing)
    4. Bisque (image storage and analysis)
    5. Application Programming Interfaces (APIs)
- II. Data Store hand-on exercise
  - A. Managing data with the Discovery Environment
  - B. Metadata templates
  - C. Other methods for managing data
    1. iCommands - on the command line
    2. iDrop Desktop - syncing with your desktop
- III. Building work flows - hands-on exercise
  - A. Stringing together complex, intensive data processing in a manner that is robust, self-documenting and repeatable
  - B. Exercise: Building a workflow in the Discovery Environment
  - C. Workflows in Atmosphere (time allowing)
- IV. Questions and answers

## References

iPlant home page: <http://www.iplantcollaborative.org/>

Getting started with iPlant:

<https://pods.iplantcollaborative.org/wiki/display/start/Getting+Started+with+iPlant>

Storing and accessing data on the iPlant Data Store:

<https://pods.iplantcollaborative.org/wiki/display/start/Storing+and+Accessing+Your+Data+in+the+Data+Store>

iCommands help page:

<https://pods.iplantcollaborative.org/wiki/display/start/Using+icommands>

Discovery Environment: <http://preview.iplantcollaborative.org/de/>

Discovery Environment Manual:

<https://pods.iplantcollaborative.org/wiki/display/DEmanual/Table+of+Contents>

Atmosphere: <https://atmo.iplantcollaborative.org/login/>

Atmosphere manual:

<https://pods.iplantcollaborative.org/wiki/display/atmman/Atmosphere+Manual+Table+of+Contents>

Bisque: <http://bisque.iplantcollaborative.org>

Bisque manual:

<https://pods.iplantcollaborative.org/wiki/display/BIS/Using+the+Bisque+Image+Analysis+System>