iPlant Collaborative
A Scalable Cyberinfrastructure for Life Science

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This demo showcases the free data storage, computation, and bioinformatics tools, developed by the iPlant Collaborative – a U.S. National Science Foundation funded cyberinfrastructure project (#DBI-0735191/ #DBI-1265383). iPlant cyberinfrastructure broadly democratizes access to supercomputing and iPlant services enable life science researchers and educators working in all domains of life to understand and make increasingly powerful predictions about biological systems. iPlant's mission empowers discovery at multiple levels - from making bioinformatics applications accessible to the “average bench-biologist” to enabling big-data science not otherwise possible.

The demo illustrates how investigators and educators can leverage these free resources for a variety of genomics related analyses (e.g. genome assembly and annotation, RNA-Seq, etc.) using the following iPlant platforms:

- **Discovery Environment:** Simple web portal for managing data, analyses, and workflows. Complex bioinformatics applications can be run without knowing command line programming; users can also integrate their own tools.
- **Data Store:** Scalable, secure, and reliable storage for terabyte-scale data. Fast and easy transfer of large datasets
- **Atmosphere:** One-click, on-demand cloud computing.

These resources are made available to scientists by providing access at multiple levels including application programming interfaces (APIs), RESTful services, and web-based systems for data access, tool integration, and analysis. We will also discuss how users can expand the capabilities of our open-source solutions and how collaboration (nationally and internationally) can allow all scientists to make use of them.

iPlant accounts are free to all users; register at our website www.iplantcollaborative.org.