# genSpace: Community-Driven Knowledge Sharing in geWorkbench

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- Prior work on collaboratories for computational scientists
  - Tool and Data sharing (e.g., caBIG, caGrid from NCI)
  - Terminology sharing (e.g., BiomedGT from NCICB et al.)
- ✓ We seek to introduce knowledge sharing
  - What tools should I use?

Visualization

MARKUS result v

ANOVA Result Vie CNKB Result Vie MARINa result vie

Cytoscape 

Tabular Microarra

PDB File Viewer

Dendrogram plus

T-test result viewer

Your Recommended Workflows

My Networks

My Friends

Chat

iberty:∼ mike\$ cd Deskto

eworkbenchWidgetset.gwt.xml

ubversion-1.7.9\_10.8.x.pkg

liberty:Desktop mike\$ cd cmdline\_log/

iberty:cmdline\_log mike\$ vi typscript iberty:cmdline\_log mike\$ vi typescrip

test.exmp

iberty:cmdline\_log mike\$ python script-upload.p

iberty:cmdline\_log mike\$ ls

Notes for invoking CuffLinks: New seq dataset. Pretty exciting liberty:cmdline log mike\$ □

SmartSVN 7.5.

glimmer3.02

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ture clipping 2.pictClipping

iberty:Desktop mike\$ ls

- Which tools work together?
- Where does this tool fit in the workflow?
- How can I get help?
- How to make my colleagues know what I am working on?
- How to annotate my results with flexible privacy?

Web Interface

Command Line Logger

My First Name: Jonathan

My Last Name: Bell

genspace-common.iar

genspace-ejbEAR.ear
genspace-ready
qlimmer302.tar.tar.qz

hors-ligne.png icepush-0.2.1.zip

msn-mobile.png

new-clipart-298x300.png

protobuf-2.3.0.tar.tar.gz

smartsvn-macosx-10\_56-7\_5\_4.t

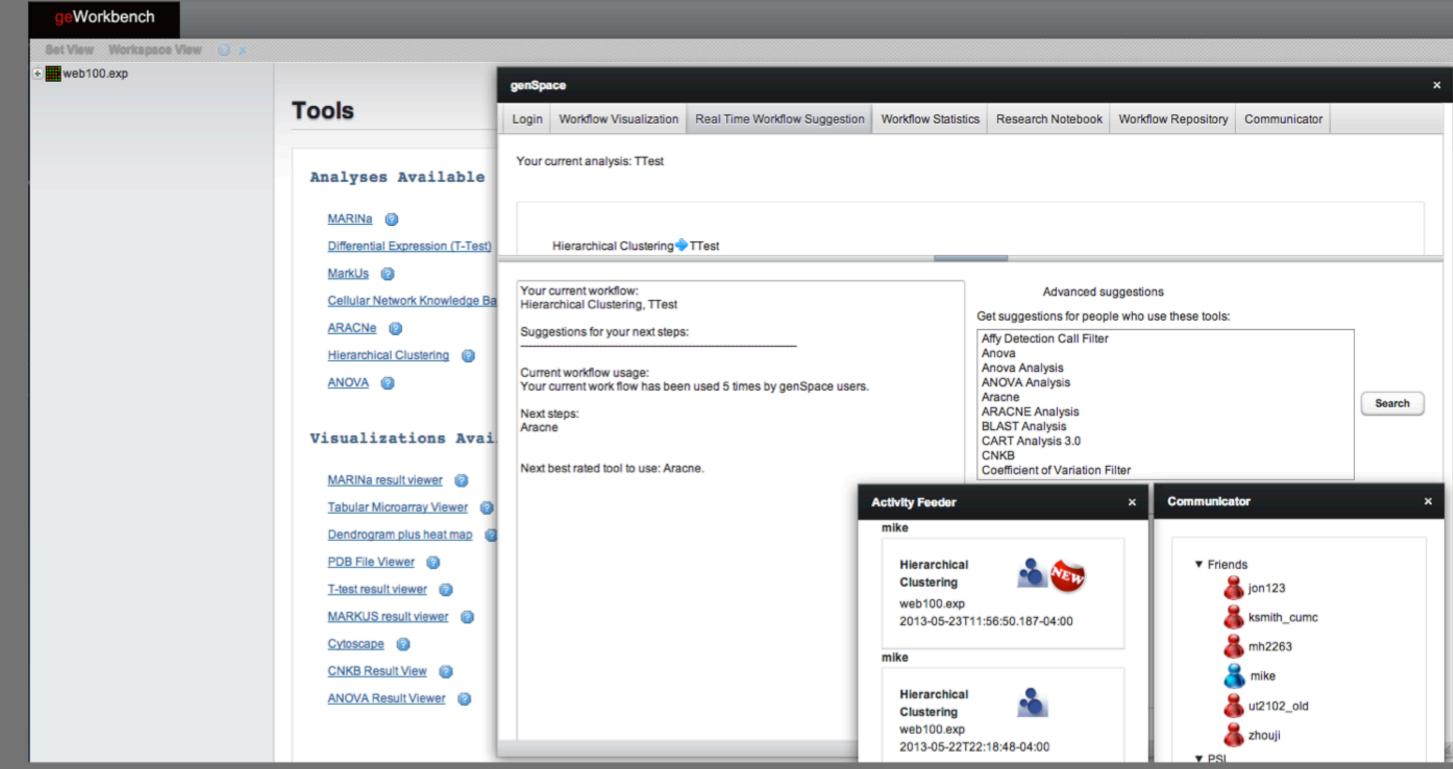
Please select or input username for search

2013-05-24T00:45:24.333-04:00

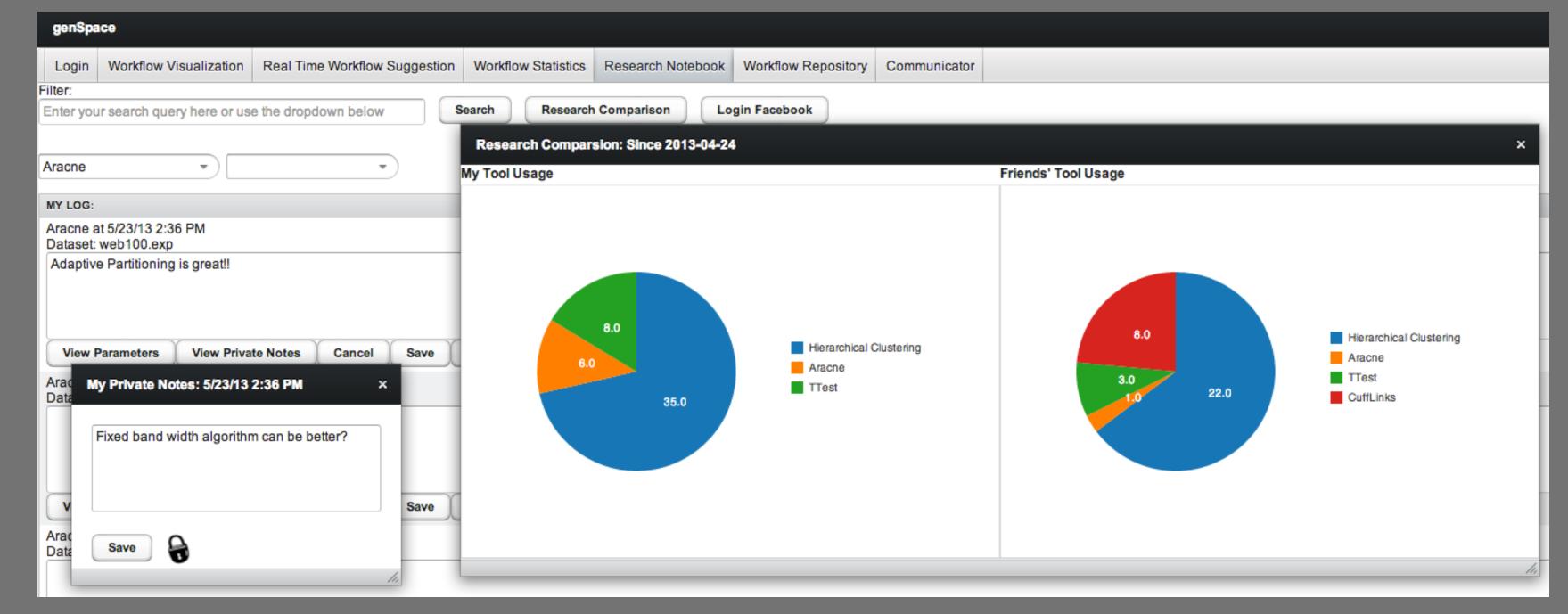
2013-05-24T00:37:58-04:00

- Social Networking facilitates Collaborative Filtering
  - What movies would I like?
  - Who also likes this book?
  - Where does this song fit in the playlist?
  - Which songs my friends are listening to?
  - When was this restaurant last reviewed?
  - How can I get help?
- Investigate Social Networking Models as an approach to Scientific Knowledge Sharing
  - Implemented prototype for geWorkbench
  - Logging Module released in geWorkbench v.1.6.3 (8 January 2009)
  - Recommendations Module released in geWorkbench v.1.7.0 (17 July 2009)
  - Chat and workflow repository released in geWorkbench v2.2 (19 May 2011)
  - "People Like You" with options for divers recommendations (to avoid the filter bubble effect) released in geWorkbench v2.3 (16 March 2012)
  - Web-based genSpace with activity feeder and private notes will be released in webinized geWorkbench(June 2013)

#### Real-time Recommendation



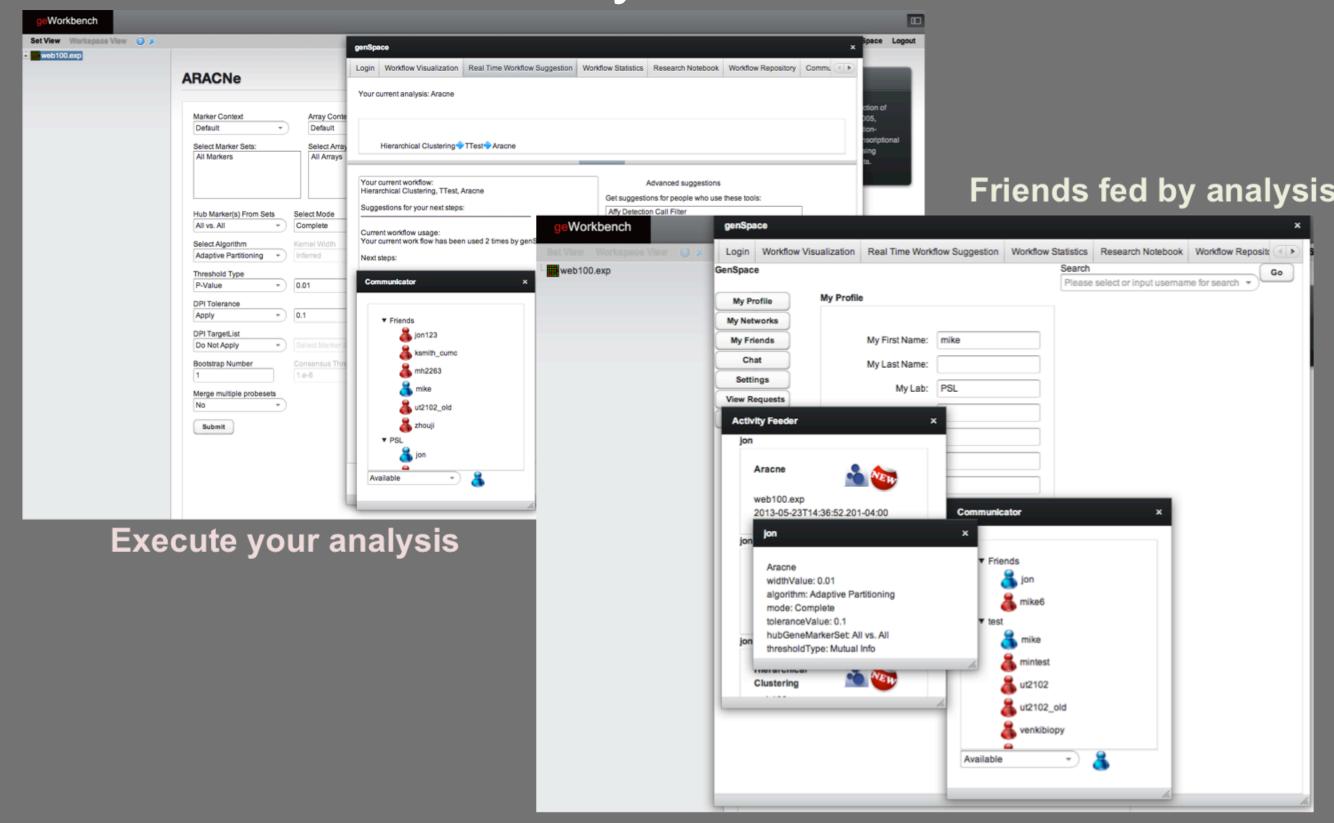
## Notebook+: Private Note, Tool Comparison



#### genSpace: Technical Approach

- genSpace is a geWorkbench plugin
- Instrument geWorkbench to record tool usage
- Aggregate event logs for communities of users
- Data mine usage patterns
- Visualize workflows that include or start with a particular tool
- Recommend popular workflows and most common tools
- Suggest next best tools based on tools just used
- Provide direct access to communicate with other scientists
- Create a permanent research log with flexible privacy setting
- Broadcast current tool usage to colleagues with no extra effort

## Activity Feeder



Usage Logs

