

JISC



# SPACEBOOK

A test application for SKUA

# Content



2

- Where the Spacebook idea comes from
  - ▣ Web 1.0, 2.0, 3.0
  - ▣ How it ties into SKUA
- Current ideas
  - ▣ Structure & content of app
- Issues & questions
- Collaboration

# Web 1.0, 2.0, 3.0



3

## □ From RWW

(<http://tinyurl.com/3y9m89>)

- Web 1.0: Centralised Them
- Web 2.0: Distributed Us
- Web 3.0: Decentralised Me

## □ Tim Berners-Lee

(from ERCIM, Jan'08, p3: <http://tinyurl.com/3ceup7>)

- Web of Real Things is built on the...
- Web of Documents which is built on the...
- Network of Computers

# Semantics



4

## □ TB-L again:

(<http://tinyurl.com/29ejpw>)

- *So, if only we could express these relationships, such as my social graph, in a way that is above the level of documents, then we would get re-use. That's just what the graph does for us. We have the technology -- it is Semantic Web technology, starting with RDF OWL and SPARQL.*

## □ My view:

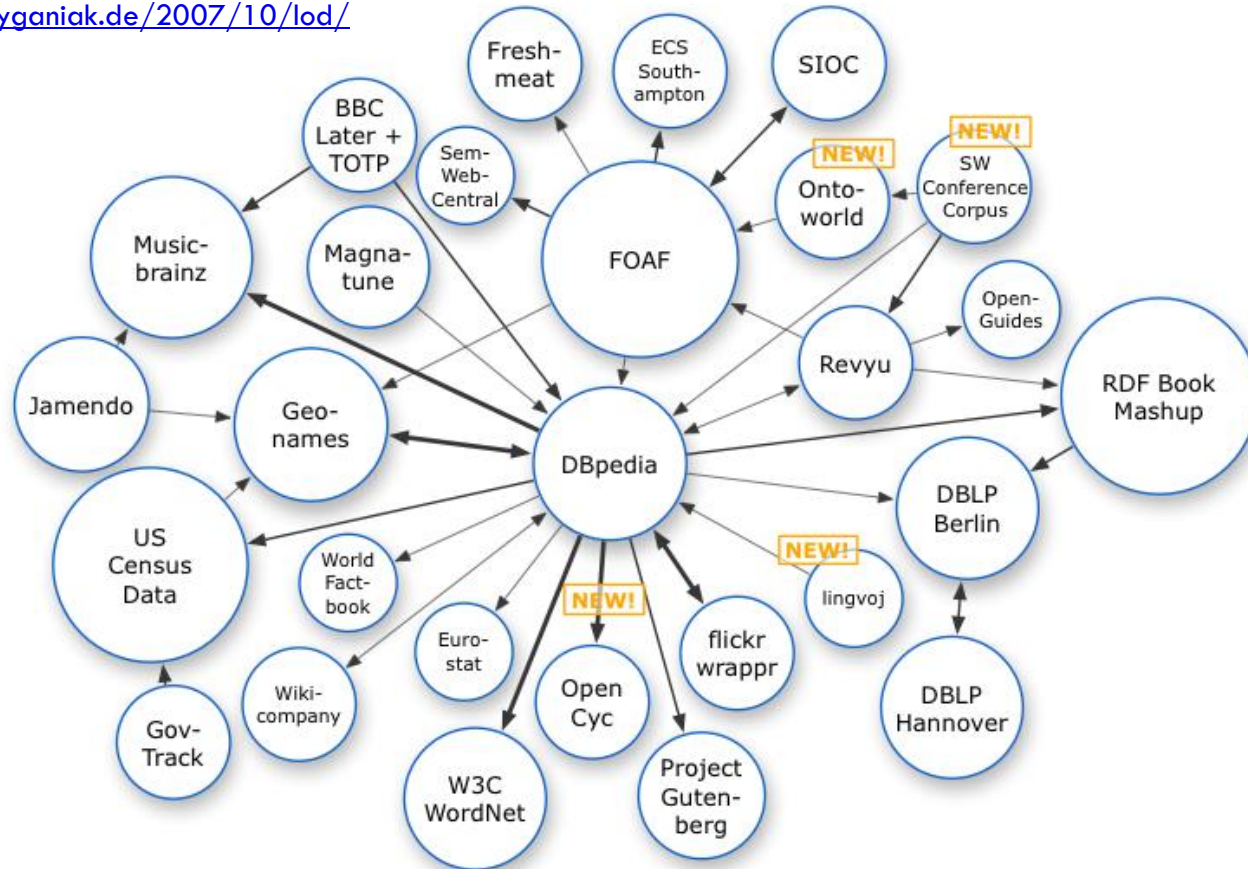
- Web 1.0: semantics in the text
- Web 2.0: semantics in the API
- Web 3.0: semantics in the metadata
  - → **Linked Data**

# Linked Open Data



5

<http://richard.cyganiak.de/2007/10/lod/>



# But...



6

- Open?
  - *'The Open Data Movement aims at making data freely available to everyone.'*
  - Not, I think, what we want
- How to link to data?
  - Use existing schema
    - Which ones?
    - What if they go away?
  - Create own schema
    - How to link data?
      - owl:sameAs
- What does the astronomy metadata graph look like?
  - And how might we present it

# Astronomy social app



7

- Uses metadata from multiple sources
  - And queries (SPARQL)
- Allows URI-based access to owned metadata
  - Securely
- Manages metadata on behalf of people, groups, projects
- Presents all metadata in coherent way
  - Owned
  - Managed
  - Sourced
  - NOT 'is twittering'
- Only presents the metadata

# Which metadata



8

- Bookmarks
  - Comments on resources (resource = any URI)
  - Resource ratings
  - Queries
  - Workflows
  - Knows about external metadata
    - Registry contents
    - FOAF, DOAP, ...
- } Results metadata?

# Claim types



9



**skua**  
Semantic Knowledge Underpinning Astronomy

TonyLinde@googlemail.com | [Settings](#) | [What's new?](#) | [Help](#) | [My Account](#) | [Sign out](#)

Search Projects

Search the Web

[Project Home](#) | [Downloads](#) | [Wiki](#) | [Issues](#) | [Source](#) | [Administer](#)

[New Page](#) | Search  Current Pages  for   | [Edit This Page](#) | [Delete This Page](#)

## Claim Types

List of all types of claim to be developed by SKUA

Updated Nov 06, 2007 by [TonyLinde](#)

## Introduction

A **claim** in SKUA is an aggregation of RDF triples (assertions) which make up some type of statement which will be stored in a [SAC](#). This wiki page will list other wiki pages in which claim types are described.

An application built around SACs will likely create its own claim types.

## Claim types

- [BookmarkClaim](#)
- [CommentClaim](#)
- [RatingClaim](#)

NOTE: each of the above wiki pages should be labelled *Claim-Type* so allowing a list of claim types to be generated from <http://code.google.com/p/skua/w/list?q=label:ClaimType>

Enter a comment:

### Wiki Markup Help

[hide](#)  
=Heading1=  
==Heading2==  
===Heading3===  
  
\*bold\*  
\_italic\_

# What does SKUA provide



10

- SACs hold the metadata
- Can be queried using SPARQL
- Supports onward queries
  - Federation
  - Up to & including Registry
    - Need to build Registry as SAC
    - Harvest-only
  
- INFRASTRUCTURE

# Key Spacebook goals



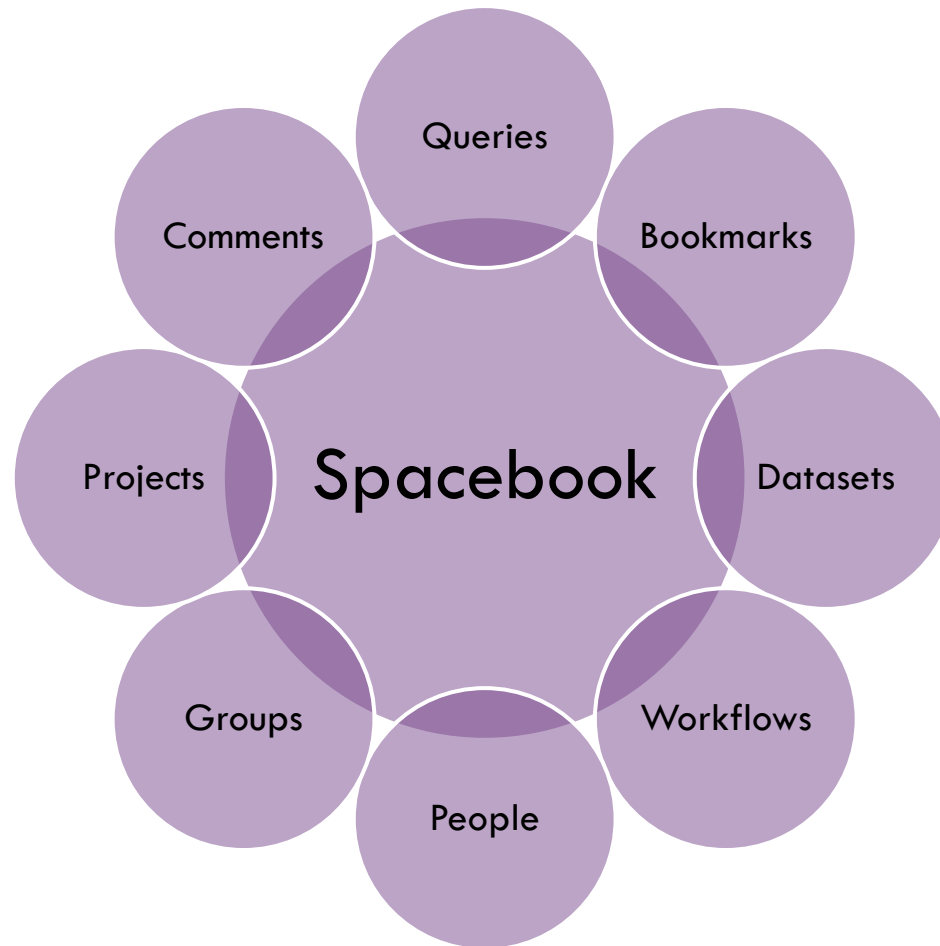
11

- Test SKUA implementations
  - App build on top of SACs
- Explore social network / VRE for astronomers
  
- But also explore:
  - What can be done with semantic information
  - How to get information from data
    - via SPARQL queries of linked data

# Spacebook: content ideas



12

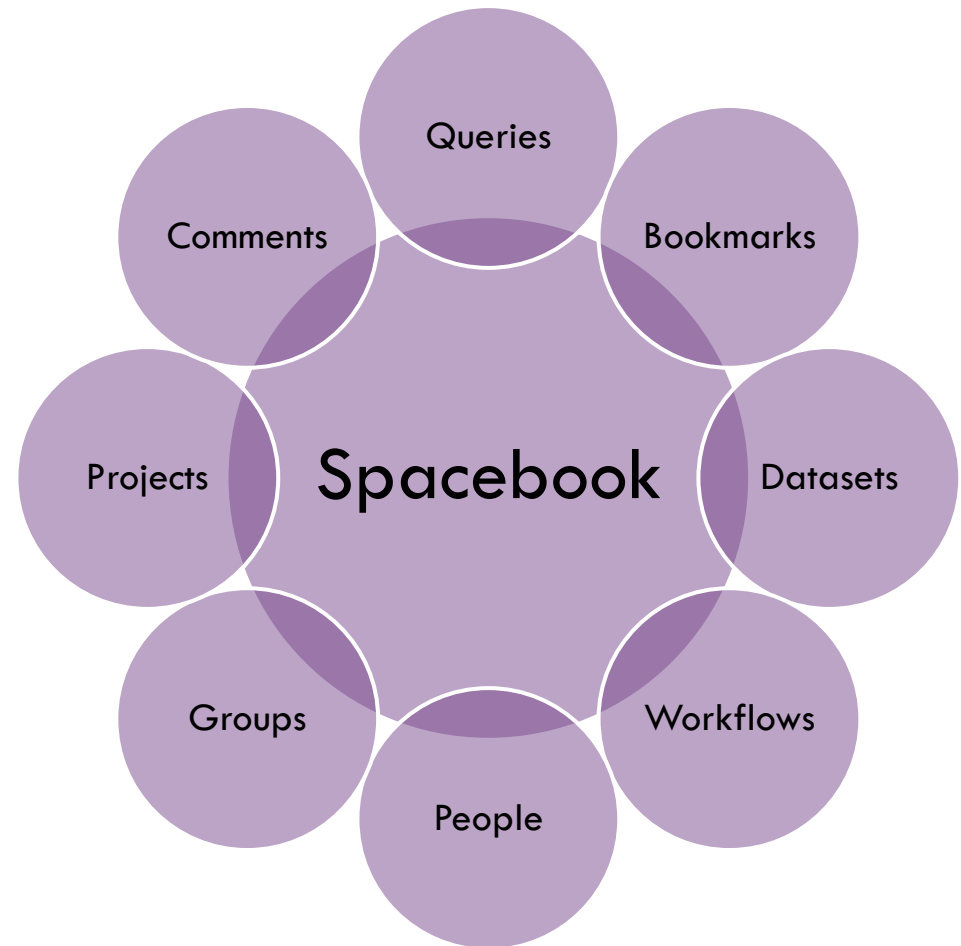


# Linked data



13

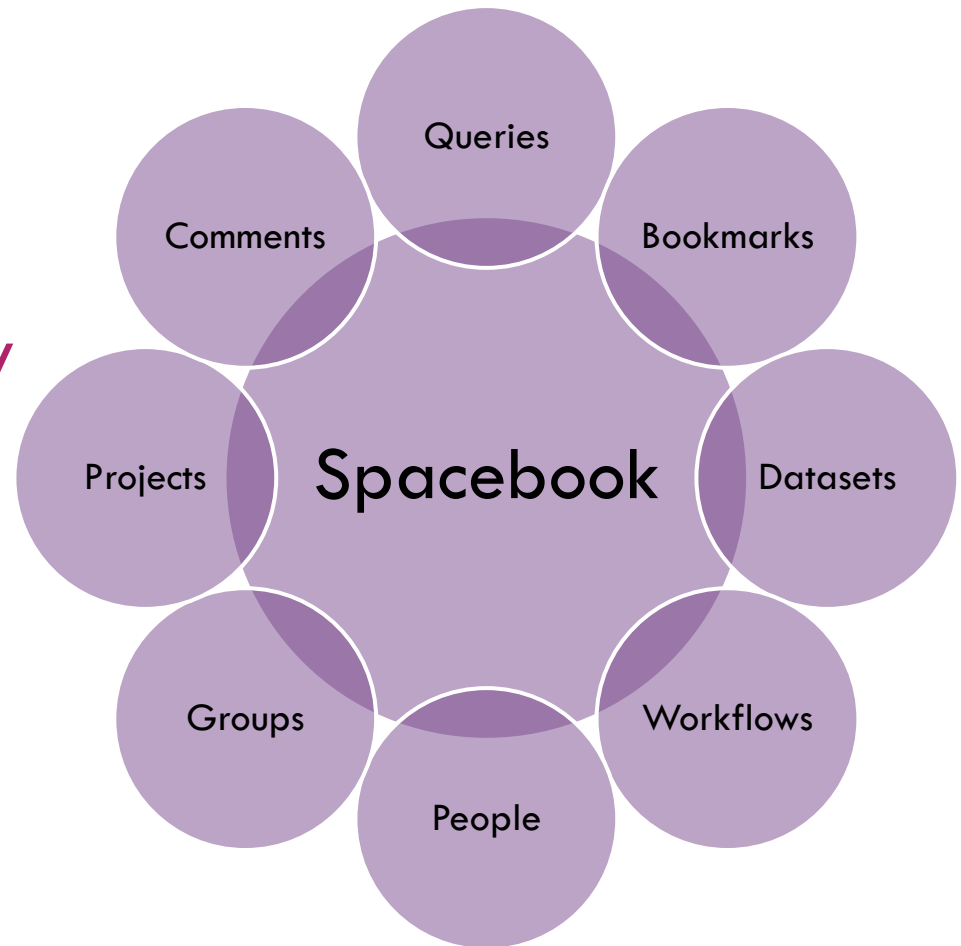
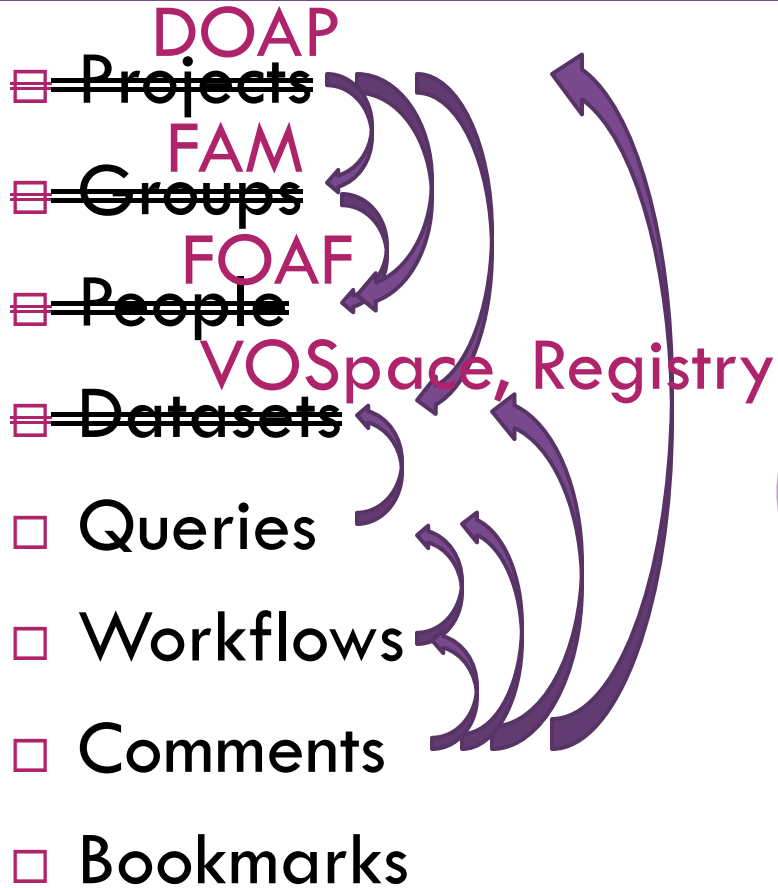
- Projects
  - Groups
  - People
  - Datasets
  - Queries
  - Workflows
  - Comments
  - Bookmarks
- 



# Not all data is owned



14



# Understand the semantics



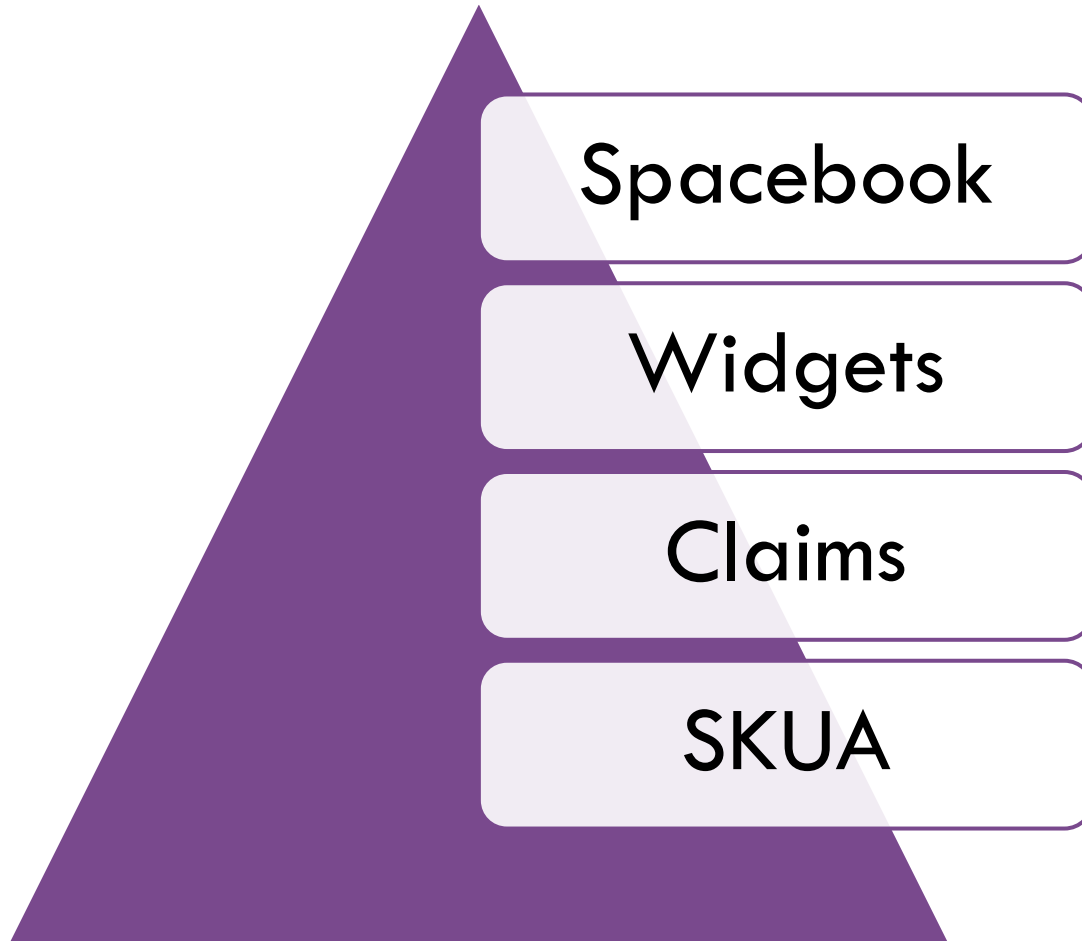
15

- Spacebook must understand the semantics
- What is a person + What is a project
  - foaf:Person, foaf:maker
  - doap:homepage, doap:Version
- And which links indicate
  - Person manages project
  - Person works on project
  
- And then present it coherently

# Spacebook: app structure



16





myExperiment makes it really easy to find, use and share scientific workflows and other research objects, and to build communities.

[Let Me In!](#) | [myExperiment Wiki](#) | [Mailing List](#) | [myGrid / Taverna](#) | [Give us Feedback](#)

Spacebook

### Quick Start:

[Look at a Workflow](#)

[Find Workflows](#)

OR

[Register / Sign Up](#)

[Forgot Password?](#)

Widgets

### About:



The myExperiment Virtual Research Environment enables you and your colleagues to share digital items associated with your research — in particular it enables you to share and execute scientific workflows.

You can use [myexperiment.org](#) to find publicly available workflows. If you want further access, and the ability to upload and share workflows, you will need to [sign up](#).

The software that powers [myexperiment.org](#) is downloadable so that you can run your own myExperiment instance.

See the [myExperiment Wiki](#) for further information about myExperiment and how to join the user and developer communities.

### News:

- We are pleased to announce that myExperiment moved to **open beta** on 12th November 2007
- Please give us your feedback using the "Give us Feedback" link.
- You can also report any problems to [bugs@myexperiment.org](mailto:bugs@myexperiment.org)
- For more info about myExperiment please see the [myExperiment Wiki](#)
- Thank you to everyone who participated in testing!

# myExperiment



18

The screenshot shows the myExperiment user profile for Tony Linde. The page layout includes a navigation bar with links for Home, Users, Groups, Workflows, Files, Blogs, and Forums. A search bar is located in the top right. The main content area is divided into several sections:

- Profile Summary:** Name: Tony Linde, Joined: Tuesday 30 October 2007 @ 17:32:30 (GMT), Email (public): Tony Linde [at] leicester.ac.uk, Website: Not specified, Location: United Kingdom.
- Statistics:** 0 Friends, 2 Groups (admin), 0 Groups (member), 1 Blogs. A note states: "Tony Linde has been credited 0 times".
- My Profile:** A box containing private information: Username: tonylinde, Openid url: http://tony.linde.myopenid.com/, and a note that no email address is registered.
- Other contact details:** Not specified.
- Interests:** Open development, Community building, Semantic stuff, Social software.
- Field/Industry:** IT.
- Occupation/Role(s):** Programme/Project Manager.
- Organisation(s):** University of Leicester.

On the right side, there are several widgets:

- New/Upload:** A workflow selection dropdown and a GO button.
- Profile Picture:** A small photo of Tony Linde.
- My Profile:** A list of links for My Profile, My Inbox, My Memberships, My History, and My News.
- My Stuff:** A summary of 0 friends, 2 groups, and 1 blogs.
- Groups:** A list of groups including Astronomy and SKUA.
- Blogs:** A list of blogs including myBlog.
- My Tags:** A list of 5 tags: annotation, astronomy, physics, semantic, social application.
- Popular Tags:** A list of 25 tags including AIDA, BioAID, bioassist\_nl, bioinformatics, biorange\_nl, BLAST, data-driven, demo, disease, genotype, kegg, nbiconworkflows, pathway, pathway-driven, pathways, phenotype, protein, sequence, shim, social sciences, text\_mining, text\_mining\_network, unprot, utley, VL-e.

At the bottom of the page, there is a footer with the text: "icons courtesy of: SK icon set 1.3 [http://www.famfamfam.com/lab/icons/sk/]"

# myExperiment



19

The screenshot displays the myExperiment website interface. At the top, there is a navigation bar with links for Home, Users, Groups, Workflows, Files, Blogs, and Forums. A search bar is located on the right side of the navigation bar. The main content area is titled 'Home » Workflows' and features a search bar with the word 'All' and a 'Search' button. Below the search bar, there are two buttons: 'Upload New Workflow' and 'View All Workflows'. A section titled 'Top 50 tags for Workflows' lists various tags such as affymetrix, AIDA, BioAID, bioassist\_nl, bioinformatics, biorange\_nl, BLAST, cel, clone, data-driven, ddbj, demo, disease, entrez, FASTA, floss, gene, gene identifier, genotype, iteration, kegg, list, microarray, nbiconworkflows, open source software, oss, pathway, pathway-driven, pathways, pdb, phenotype, protein, protein sequence, pubmed, scaffold, SEG, sequence, shim, similarity, social sciences, synonyms, test, text\_mining, text\_mining\_network, transcribe, transcription, ugi, uniprot, utility, and VL-e. Below the tags, there are four tabs: 'Latest', 'Last Updated', 'Most Viewed', and 'Most Downloaded'. The main content area displays a workflow card for 'BioAID\_DiseaseDiscovery' by 'Marco Roos'. The card includes the uploader's name, a profile picture, and a list of credits: 'Marco Roos' and 'AID'. The license is 'Creative Commons Attribution-Share Alike 3.0 License'. A description of the workflow is provided: 'This workflow finds disease relevant to the query string via the following steps: 1. A user query: a list of terms or boolean query - look at the Apache Lucene project for all details. E.g.: (EZ2 OR "Enhancer of Zeste" + (mutation chromatin) -clinical) 2. Retrieve documents: finds relevant documents (abstract+title) based on query (edit maxHits to change the default maximum number of documents returned); the AIDA service inside is based on Apache Lucene) 3. Discover proteins: extract proteins ...'. The card also shows a rating of 5.00/5 (1 rating), 1 version, 1 comment, 1712 views, and 499 downloads. The tags for this workflow are AIDA, BioAID, biorange\_nl, disease, pkna, protein, text\_mining, text\_mining\_network, and VL-e. On the right side of the interface, there is a sidebar with sections for 'New/Upload', 'My Profile', 'My Inbox', 'My Memberships', 'My History', 'My News', 'My Stuff', 'Friends (0)', 'Groups (Astronomy, SKUA)', 'Blogs (myBlog)', and 'My Tags (5 tags)'. The top right corner of the page has a 'Logout' button and a 'Give us Feedback' link.

# myExperiment: details



20

## About:

<http://www.myexperiment.org/>



The myExperiment Virtual Research Environment enables you and your colleagues to share digital items associated with your research — in particular it enables you to share and execute scientific workflows.

You can use [myexperiment.org](http://myexperiment.org) to **find** publicly available workflows. If you want further access, and the ability to upload and share workflows, you will need to **sign up**.

The software that powers [myexperiment.org](http://myexperiment.org) is downloadable so that you can run your own myExperiment instance.

See the [myExperiment Wiki](#) for further information about myExperiment and how to join the user and developer communities.

- 'myExperiment is principally funded by [JISC](#) under the Virtual Research Environments programme, with one strand of activity funded by Microsoft. The related Triana activity in Cardiff is supported by the OMII-UK Commissioned Software Programme. myExperiment builds on [myGrid](#) and [CombeChem](#), two of the UK e-Science Pilot Projects.'

# My first myExperiment



21

The screenshot shows a web browser window with the URL `http://localhost:3000/home`. The browser tabs include `myExperiment.org - Users`, `myExperiment.org - Home`, and `Spacebook - Tony Linde - My...`. The page header features the SKUA logo (Semantic Knowledge Underpinning Astronomy) and navigation links for `Logout` and `Give us Feedback`. A navigation menu includes `Home`, `Friends`, `Networks`, `Activities`, and `Objects`. A search bar is located below the navigation menu.

The main content area is divided into several sections:

- Home »**: A breadcrumb trail.
- Site Announcements**: A section with a highlighted announcement: "Here I be" dated "06/02/08 @ 06:44:03 by Tonylinde".
- My News**: A section with the text "No news".
- Updated Items**: A section with a blog entry: "Blog: Tony Linde by Tonylinde (12 days ago)".
- Latest Groups**: A section with the text "None".
- Latest Tags**: A section with the text "None".
- New Users**: A section with a user profile for "Tonylinde".
- Latest Comments**: A section with the text "None".

The right sidebar contains a **New/Upload** section with a `Workflow` dropdown and a `GO` button. Below this is a user profile for "Tonylinde" with a silhouette icon and a list of links: `My Profile`, `My Inbox`, `My Memberships`, `My History`, `My News`, and `Manage Announcements`. The **My Stuff** section shows `0 friends | 0 groups | 1 Blogs`. The **Blogs** section lists a blog by "Tony Linde".

# What to change



22



- Top tabs
- Sidebars
- Widgets
- ...

# Use case #1



23

## Project web site

- Project SAC
  - Federate to registry & related projects
- Members permitted to use SAC
  - And federate queries to it from personal SAC
- Accepts queries, workflows, comments, ratings
- No information is public

# Use case #2



24

## Department web site

- Group SAC
  - Federated to registry & specialist public SACs
- Members permitted to use & federate to it
- Accepts comments, workflows, queries
- Workflows and results made public
  - So accepts federation for these claim types

# Use case #3



25

## Astronomy social network

- Has own SAC and multiple managed SACs
  - Federates own SAC to Registry
  - & managed SACs to own
  - & managed SACs to others (if approved)
- Anyone can join
- Members can
  - Create personal, project & group SACs
  - Add claims to permitted SACs
  - Federate SACs to others (if permitted)
- Data links via semantics (eg friends in FOAF)

# Bottom line



26

- Spacebook data all in SACs
  - ▣ So everything is SPARQL-able
  - ▣ But data can be *owned, managed* or *remote*
- Presentation of data is determined by semantics
  - ▣ Unknown semantics shown in key/value list
- User can add widgets
  - ▣ Specifying data for widget in SPARQL query
  - ▣ Widget refreshes when underlying data changes

# Questions / Issues



27

- How does user set context for an activity?
  - Eg which SAC does comment get added to?
- What is the equivalence to Facebook's privacy mechanism?
  - Match settings for what friends can see to settings for groups and projects person belongs to
  - Need access policy mechanism
- myExperiment blogs & forums
  - Leave them out : better done by others
  - But link up via OpenSocial
- How do widgets stay up to date?
  - Push or pull

# Watch us



28

- <http://myskua.org>
- Codebase, wiki, issue tracker
  - <http://code.google.com/p/skua/>
- Discussion groups
  - <http://groups.google.com/group/skua-announce>
  - <http://groups.google.com/group/skua-discuss>
- Blogs
  - <http://tonyonskua.blogspot.com/>

# Spacebook collaboration



29

- myExperiment (Ruby / Rails)
  - Hack to create Spacebook
  - Extend with OpenSocial
- Add widgets
  - Incorporate your VO services
    - Eg ADQL queries, cone searches, VOSpace access
- Add own claim types
  
- Talk to me ([Tony.Linde@leicester.ac.uk](mailto:Tony.Linde@leicester.ac.uk))

# Acknowledgements



30

- JISC e-Infrastructure programme
  - <http://tinyurl.com/36qn6z>
- University of Leicester, XROA department
  - <http://tinyurl.com/28mqr6>
- AstroGrid
  - <http://www.astrogrid.org>
- Euro-VO, VOTECH
  - <http://www.euro-vo.org/>
  - <http://eurovotech.org>
  
- Norman Gray
  - Who had the original idea