

# Exploring Open Science

John Dupuis  
Steacie Science & Engineering Library  
York University

<http://tinyurl.com/dupuisbrockoaw>

Brock University, Open Access Week  
October 20, 2010



If I have seen a little further it is by standing  
on the shoulders of Giants.

-Isaac Newton

Imagine a scientific culture

Based on fairness

# Collaboration and sharing

Openness

Where the reward and incentive structures are aligned with those goals.

It's about  
building things



Openness isn't just an end in  
itself

It's also a means to  
an end.

Openness isn't only about  
breaking down  
old systems and old  
ways of doing things

It's about  
building something new and  
looking to a  
better future.

Not just for science and  
scientists but for society as a  
whole.

Some thoughts

ARE YOU COMING TO BED?

I CAN'T. THIS  
IS IMPORTANT.

WHAT?

SOMEONE IS WRONG  
ON THE INTERNET.



**The internet offers us the first major opportunity to improve [the] collective long-term memory [of science], and to create a collective short-term working memory, a conversational commons for the rapid collaborative development of ideas.**

**[-Michael Nielsen](#)**



The process of scientific discovery - how we do science - **will change more over the next 20 years than in the past 300 years.**

-Michael Nielsen

This change will not be achieved without great effort. From the outside, **scientists currently appear puzzlingly slow to adopt many online tools.**

-Michael Nielsen

**What is missing to make the vision a reality:** integration between data and publication, integration of authoring and publication, traditional publications being associated with podcasts and video, professional networking akin to social networking?

-[Cameron Neylon](#)  
(on FriendFeed)

**What kind of website do you wish there was that would help you with your work?**  
What sorts of tools and features would it have? What parts of your work/job would be greatly helped by a well designed website?

-[Corie Lok](#)  
(on Nature Network)

Writing papers in a fast and easy way is what scientists want, and if that happens to come with tagging and showing their collection of papers to the whole world, they'll do that too. Once that happens, **the concept of sharing will become more mainstream, and opening lab notebooks and data sharing can follow.**

-[Eva Amsen](#)  
(on Nature Network)

Any contradictions and challenges apparent in the preceding quotes?

# FIELDS ARRANGED BY PURITY

→  
MORE PURE

SOCIOLOGY IS  
JUST APPLIED  
PSYCHOLOGY

PSYCHOLOGY IS  
JUST APPLIED  
BIOLOGY.

BIOLOGY IS  
JUST APPLIED  
CHEMISTRY

WHICH IS JUST  
APPLIED PHYSICS.  
IT'S NICE TO  
BE ON TOP.

OH, HEY, I DIDN'T  
SEE YOU GUYS ALL  
THE WAY OVER THERE.



SOCIOLOGISTS

PSYCHOLOGISTS

BIOLOGISTS

CHEMISTS

PHYSICISTS

MATHEMATICIANS

<http://xkcd.com/435/>

A very selective tour of the  
kinds of things I'm talking  
about



The tools, products,  
movements, trends that  
affect open science

# A very selective tour of Cool Stuff

- Blogging

- [ScienceBlogs](#)
- [Scientopia](#)
- [Guardian Blogs](#)
- [PLoS Blogs](#)
- [Science 3.0](#)
- [Nature Network](#)
- [Discover Blogs](#)

- Aggregators

- [Scienceblogging.org](#)
- [ResearchBlogging.org](#)
- [Stanford Blog Directory](#)

- Social Bookmarking & Citation Management

- [Connotea](#)
- [Delicious](#)
- [CiteULike](#)
- [Mendeley](#)
- [Zotero](#)

- Mobile Apps

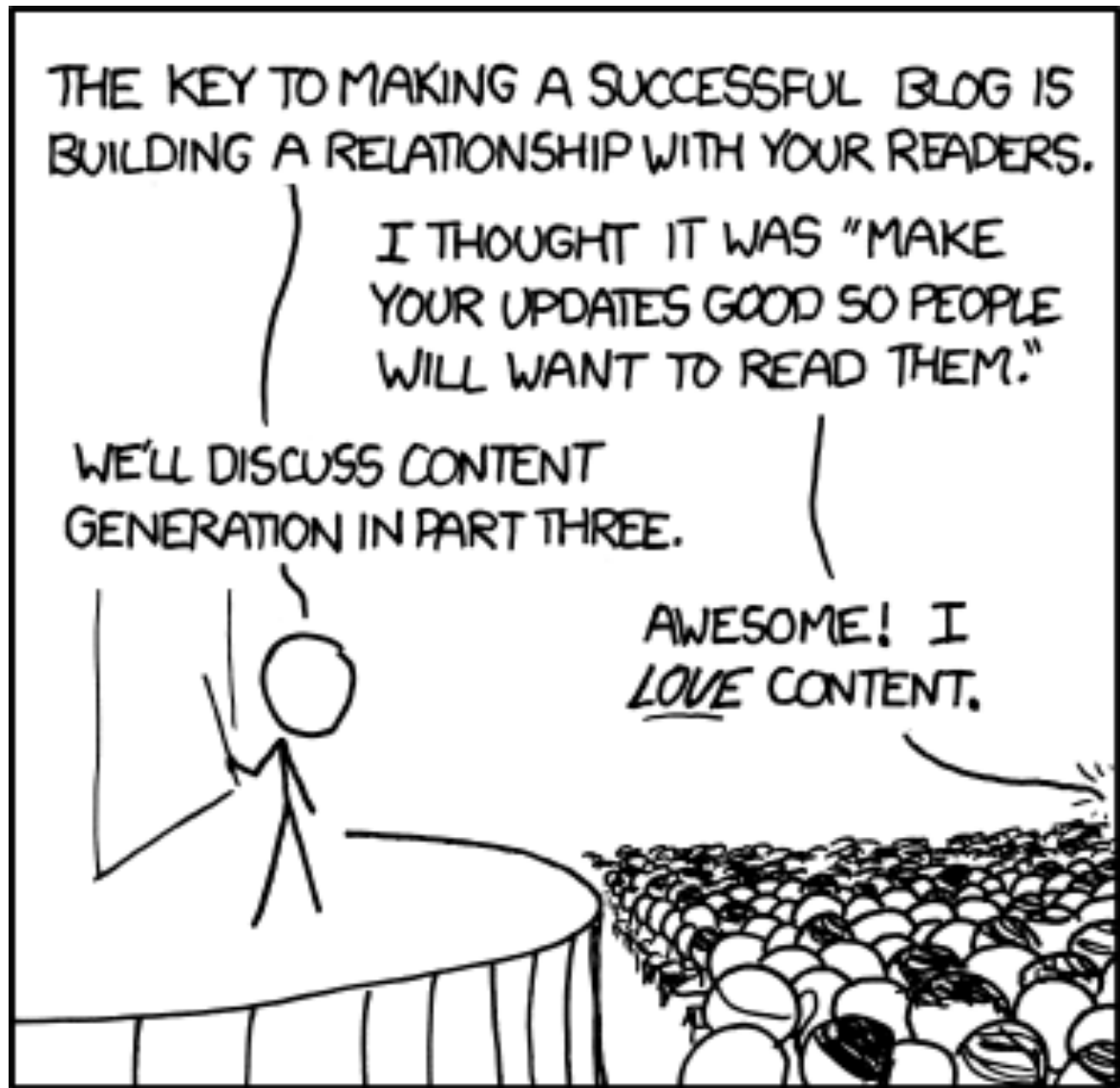
- [Nature Mobile](#)
- [IEEE Xplore Mobile Digital Library](#)
- [iPhone apps every biologist needs](#)
- [Medical apps for mobile devices](#)

- Open Access
  - PLoS
  - BioMedCentral
  - Open Access Directory
  - Budapest Open Access Initiative
  - Directory of Open Access Journals
- Open Access Mandates & policies
  - NIH Public Access Policy
  - Harvard Faculty of Arts & Science resolution
- Open Data
  - Panton Principles for Open Data in Science
  - SSHRC Research Data Archiving Policy
  - Sloan Digital Sky Survey
  - Entrez Genome Database

- Social Networks
  - [Nature Network](#)
  - [Science 3.0](#)
  - [FriendFeed](#)
- Mass Collaboration/Citizen Science
  - [Polymath Project](#)
  - [Galaxy Zoo](#)
  - [Foldit](#)
- Repositories
  - [arxiv](#)
  - [Nature Precedings](#)
- [Open Notebook Science](#)
  - [Useful Chemistry](#)
  - [Cameron Neylon](#)

- Outreach
  - [Inside Duke Medicine](#)
  - [MST Visions](#)
  - [Planet York](#)
  - [Stanford Blog Directory](#)
- Video
  - [SciVee](#)
  - [Journal of Visualized Experiments](#)
  - [Khan Academy](#) (YouTube math courses)
- Open Peer Review
  - [PLoS ONE](#)
  - [Nature experiment](#)
- Conferences
  - [Science Foo Camp](#)
  - [ScienceOnline](#)

- Wikis
  - [WikiProteins](#)
  - [Differential Geometry](#)
- Virtual Worlds
  - [Second Nature](#)
  - [International Spaceflight Museum](#)
- Collaboration Markets
  - [Innocentive](#)
- Licensing
  - [Science Commons](#)
- Microblogging
  - [Bora Zivkovic](#)
  - [Nature News](#)
  - [Sciencebase list of 600 science Twitterers](#)
  - [CERN/Large Hadron Collider](#)





# Some case studies

And I'm not worried about  
actually getting through all of  
them...

# Case Study: FriendFeed

- Lifestream aggregator
  - blog posts
  - Twitter & microblogging
  - Delicious & other book marks
  - Amazon, YouTube and other favourites
- Lying fallow since acquired by Facebook

## Home

- ▶ Favorites
  - ▶ Personal
  - ▶ Professional
- new list

## Me

## Rooms

- Crime and mystery...  
14 minutes ago
  - Data Mining  
23 minutes ago
  - ScienceOnline09  
26 minutes ago
- prefs | 22 more »

## Everyone

Post:  Message  Link  Photos |  Import site

View: **Standard** - Real-time - Best of day

 **Låura Harris**

"Yesterday, I wanted to search MeLCat, a consortial catalog. I knew there was a link on the "no results" page of OUR catalog, so I purposely typed a random string of characters in as a search query. Got the link to MeLCat, which then searched for that random string. It actually brought something up.."

 1 hour ago - Comment - Like - Hide - More ▾

 Sir Shuping liked this

 (For reference, the string was something like hjk.) I e-mailed the library and suggested that perhaps they didn't mean that hjkkkkkkkkk was an alternate title for the Muppet Sing-Along DVD. - Låura Harris

*4 more comments*

 DJF, you are in a maze of twisty little databases, all alike. - Phoney Steve

 Steve: the best part is that one actually finds things if that string is used in the right place. - DJF via twirl

 **Bora Zivkovic** - A Blog Around The Clock

[On a crusade to save us from bad statistical errors](#)

44 minutes ago - scienceblogs.com - Comment - Like - Hide - More ▾

 Ladybug Heather liked this

 **Vince DeGeorge** (**Hutch Carpenter** liked this)

"Twitter is failing me BIG TIME today. Trying to set up something for work for weather alerts and continue to get the fail whale. FAIL. FAIL. FAIL."

10 minutes ago - Comment - Like - Hide - More ▾

 Hutch Carpenter and AJ Batac liked this

 **Dion Hinchcliffe** (**Hutch Carpenter** liked this) - Twitter

## Home

- ▶ Favorites
  - ▶ Personal
  - ▶ Professional
- new list

## Me

## Rooms

- Crime and mystery...  
18 seconds ago
  - Data Mining  
33 minutes ago
  - ScienceOnline09  
35 minutes ago
- prefs | 22 more »

## Everyone



## Meg version M.0

Block Subscribe

Feed

Comments + Likes

Meg + Friends

Meg's subscriptions

« Back to Meg's feed

"Learning activities for basic research classes. What are yours? We mostly do lecture/demonstration and questions from students. That bores me."

October 27 at 11:09 am - Comment - Like - More ▾

Stephanie\_IsSoVeryHopeful, jokrausdu, Stephen Francoeur and 3 other people liked this

- Meg, what about brief demo, then break students into groups, have them explore, look for something and report back out - what they liked, didn't like - each group could use a diff database/library catalog/free internet? - ʌʌĈ
- If subject based, I'll pull a few dozen subject encyclopedias into the room and have them find/read article on their topic, pulling out keywords/search vocab and also use the "for further research" bibliography. Ideally, a cold search before, and an informed search after, but I never get all that... (did that make sense?) - RudīBЯaЯian
- I have them do a search exercise to show them how AND works. I change the search topic all the time depending on the class and what's in the news. Example here: <http://docs.google.com/Doc?id=...> - Stephen Francoeur
- I also give them 3 citations and ask them to identify what kind of source is being cited (and how they know that to be true). One citation is for a book, another for a scholarly journal article, a third for a magazine article. I don't teach them anything about citations prior to this exercise; they learn as they go (or as they guess, I suppose). - Stephen Francoeur
- I usually do topic development with them. Ask for a volunter from the class willing to talk about his/her research topic. Then I ask the student questions to help narrow the topic down, reveal different facets (subjects) of it, identify any words related to the topic, and list potential info producers on that topic (e.g., psychologists, legal scholars, economists, etc.) I can share the handout for that if anyone is interested. - Stephen Francoeur
- I would \*love\* a handout, Stephen. Thanks everyone for your suggestions! I'm excited to get beyond the talking head. - Meg version M.0



## Home

- ▶ Favorites
  - ▶ Personal
  - ▶ Professional
- new list

## Me

## Rooms

- Crime and mystery...  
3 minutes ago
  - Data Mining  
36 minutes ago
  - ScienceOnline09  
38 minutes ago
- prefs | 22 more »

## Everyone



## Cameron Neylon

Friend lists: [Home feed \(add/edit\)](#)

[Unsubscribe](#)

[Feed](#)

[Comments + Likes](#)

[Cameron + Friends](#)

[Cameron's subscriptions](#)

« [Back to Cameron's feed](#)

"Request for assistance:"

April 11 at 5:53 am - [Comment](#) - [Like](#) - [More](#) ▾

Hutch Carpenter liked this

I'm trying to build a model of the calcium gated potassium channel MthK using the PDB files 1lnq and 2fy8. MthK has a gating domain (rck domain) and a transmembrane domain and works as a tetramer of full length proteins with a tetramer of just rck domain. So I can build the ligand bound (open conformation) from 1lnq by removing residues 19-98 from chains A, B, C, and D. The closed conformation is harder. 2fy8 has the rck domain in the closed conformation but the deposited structure is the asymmetric unit and not the biological unit. What I need to do is build the rck octamer in the closed conformation and then to put that back on top of the transmembrane domain tetramer. Swiss pdb viewer which isn't really cutting the mustard. If anyone can help us by building the models that would be brilliant. Our aim is to determine the structure of these molecules in solution (with detergent) by small angle scattering so good models to compare with data are crucial. Authorship on papers a given - can't offer any money - Cameron Neylon

How fast that needs to be done? I think I can help, but I can start in the middle of the next week. - Pawel Szczesny

Different things for different times. We're putting in the beamtime application next week (Wed) so having a model that we can use to predict scattering would be useful (but not critical) for that. Beamtime won't be until second half of the year at earliest and data analysis will be later again. So if it were possible to get something rough next week that would be brilliant but beyond that its a moderately long term thing. - Cameron Neylon

I cannot promise it's going to be ready for Wed, but if it's only a rough model/picture at least I will try. - Pawel Szczesny

The resolution of SAS is quite low so for prediction something that's just got the shape right is fine. Details of interactions are not so important. The detail can be pinned down later when we have high quality data to compare to.

# Case Study: Blogging Networks & Aggregators

- Collections of bloggers
- Large & small, old & new
- Corporate & independent
- Newspaper, magazine, OA publisher, one person show
- Diversity is the watchword
- Advantages & disadvantages
- Aggregators are starting to appear to help make sense of it all
  - ScienceBlogging
  - ResearchBlogging

# The Last 24 Hours

October 19, 2010

## AARDVARCHAEOLOGY

[Archives](#) • [About](#) • [RSS](#)

**Girl Power** Asked by her teacher to write five things she's good at, and to illustrate them, 7-y-o Juniorette just produced this. The speech bubble reads "Yes I win". Then "I'm good at writing running putting my hand up eating candy..."

## THE THOUGHTFUL ANIMAL

[Archives](#) • [About](#) • [RSS](#)

**Elephant Seals and Donors Choose Update** Check out this awesome David Attenborough video: So far the readers of this fair blog have managed to fully fund two Donors Choose science education requests. We can do better. Do you like the stuff that you read here? Do...

## MIKE THE MAD BIOLOGIST

[Archives](#) • [About](#) • [RSS](#)

**Movement Conservatives and the Difference Between Opposing Policies and Principles** Dissembling about social security and rape.

## DISPATCHES FROM THE CULTURE WARS

[Archives](#) • [About](#) • [RSS](#)

**Dumbass Quote of the Day** From our old friend Ellis Washington in his latest column: Remember, to the Democratic Party and RINO Republicans, truth doesn't matter, because to them truth is relative. All that matters to liberals and progressives is Nietzsche's "Will to Power" and...

## CRECLAREN'S BLOG

ADVERTISEMENT

### Are you left or right brained?



Which way does the ballerina spin ?

Left

Right

what's in the air? Do we really need psychology?  
**Got a question about science?** Is sunshine good for you? What is the worst technology to have been invented? Has cloning developed the way you expected it to? [Ask a ScienceBlogger >>](#) What the role of science fiction in promoting science? Is global warming an opportunity rather than a prob...

### RSS Feeds

- ➔ [ScienceBlogs Select](#)
- ➔ [The Combined Feed](#)
- ➔ [Peer Review on Sb](#)
- ➔ [News-Related Posts](#)
- ➔ [National Geographic](#)

### More...

- ➔ [Email Alerts](#)
- ➔ [Weekly Newsletter](#)
- ➔ [Follow us on Twitter](#)
- ➔ [The ScienceBlogs Shop](#)
- ➔ [The Latest Comments](#)





FOLLOW ME ON [twitter](#)

GRAB THE FEED 

[Home](#)

[About](#)

[Contacts](#)

[The Scientopia Code](#)

[The Scientopia Vision](#)

## Latest Posts from Around Scientopia

- ✿ [National Chemistry Week repost: Periodic table of wow!](#) (by Janet D. Stemwedel@Adventures in Ethics and Science)
- ✿ [I am the program](#) (by beth brown@Book of Trogool)
- ✿ [An Open Letter to United Airlines](#) (by whizbang@Whizbang)
- ✿ [Holy mole-y, it's National Chemistry Week!](#) (by Janet D. Stemwedel@Adventures in Ethics and Science)
- ✿ [I have been remiss](#) (by proflikesubstance@Prof-Like Substance)
- ✿ [OA Week Repost: My Father the Anthropologist; or, What I Offer Open Access and Why](#) (by Dorothea@Book of Trogool)
- ✿ [Critiquing LaPlant et al, in Nature Neuroscience, Part 2: The sensitization](#) (by scicurious@Neurotic Physiology)
- ✿ [Smoking bans are good for barkeeps](#) (by PalMD@White Coat Underground)



### Scientopia Blogs

Select a Blog 

### About Scientopia

Scientopia is a new kind of on-line science blogging community.

- ✿ [Our Vision](#)
- ✿ [Our Code](#)
- ✿ [Contacts](#)
- ✿ [Our Members \(coming soon\)](#)



Diverse perspectives on science and medicine.

[« Older posts](#)

## WHO invites countries to have foodborne disease burden assessed

By [Susan Jones](#)

Posted: October 19, 2010

Almost a year ago I wrote a short [post](#) highlighting the work of the [FERG](#) (Foodborne Disease Burden Epidemiology Reference Group) at the WHO. The FERG is aiming to properly assess the global burden of foodborne diseases, including...

Category: Uncategorized | [Leave a comment](#)

### Popular PLoG Post

[The Trouble with Scientists](#)

Deborah Blum

provides a fantastic rebuttal to Royce Murray's controversial opinion of bloggers.

### Featured PLoG Post

[Rewards and the Menstrual Cycle](#)

A new post by Emily Author at

### The PLoS Blogs

- [EveryONE](#)
- [Public Library of Science](#)
- [Speaking of Medicine](#)

### The PLoS Blogosphere

- [Body Politic](#)
- [Genomeboy](#)
- [Gobbledygook](#)
- [Neuroanthropology](#)
- [NeuroTribes](#)
- [Obesity Panacea](#)

# DISCOVER

Science, Technology, and The Future

[Subscribe](#) [Give a Gift](#) [Archives](#) [Customer Service](#)

SEARCH

SUBMIT>>

[Health & Medicine](#) | [Mind & Brain](#) | [Technology](#) | [Space](#) | [Human Origins](#) | [Living World](#) | [Environment](#) | [Physics & Math](#) | [Video](#) [Photos](#) [Podcast](#) [RSS](#)

## Discover Blogs



### The Intersection

Where science collides with life, slams into culture, crashes with politics, and gets totaled.

#### O'Donnell: "That's in the First Amendment?"

- October 19, 2010 2:59 PM

#### Creationism in the Classroom and The Separation of Church and State

- October 19, 2010 11:37 AM

#### Apple is Almost Worth As Much as ExxonMobil--And That's Good News For the Planet

- October 19, 2010 9:14 AM

### 80beats

80beats is DISCOVER's news aggregator, weaving together the choicest tidbits from the best articles covering the day's most compelling topics.

#### Evidence of Smart, Jewelry-Making Neanderthals Is Challenged

- October 19, 2010 2:25 PM

#### Implantable LEDs Could Be Medical Sensors, or Sweet Glowing Tattoos

What's your

braingrade

A B C D F ?

Take our free brain grade test and get expert brain health tips and suggestions to keep your brain healthy.

> [Start the Test](#)

[www.braingradetest.com](http://www.braingradetest.com)

Ads by Google



Buy <sup>+</sup>online  
securely  
without a  
credit card.

QV Mco Drossid



## Blogging Networks and Collectives

Feeds from science blogging networks hosted by media organizations, science publishers and scientific organizations as well as self-organized bloggers' collectives .

### Scienceblogs.com

Elephant Seals and Donors Choose Update [The  
 Movement Conservatives and the Difference Between  
 Tit for tat [A Few Things III Considered]  
 Dumbass Quote of the Day [Dispatches from the  
 Iran Infuriated by Film of Woman's Stoning [Greg

### Discover Blogs

Implantable LEDs Could Be Medical Sensors, or  
 Creationism in the Classroom and The Separation of  
 Three generations of Hubble cameras capture a spiral  
 When in doubt, shout – why shaking someone's  
 From the Case Files: The Peanut Butter Cookie and

### PLoS Blogs

WHO invites countries to have foodborne disease  
 If BPA exposure is so low, why should we be worried?  
 Mary Knudson launches Heart Sense blog  
 New in PLoS ONE: Citation rates of self-selected vs.  
 10 Simple Ways to Increase Your Physical Activity

### Scientific American Blogs

New research confirms global surface winds are  
 Famed mathematician Benoit Mandelbrot, father of

### Scientopia

I am the program  
 An Open Letter to United Airlines

### Guardian Science Blogs

Mystery Bird: Senegal lapwing, Vanellus lugubris  
 Today's Mystery Bird For You To Identify

## Post List




October 19, 2010  
12:29 PM  
10 views

### Boom boom boom, you knock me out right off of my feet...

by [Rogue](#) in [Into Oblivion](#)

I really like this song! For those who do not know (shame on you!), it is John Lee Hooker, one of the best bluesmen ever. I could keep on talking about blues, but my guess is it is far better to let you listen to it So, let me go into something close to this [...]... [Read more »](#)

Ellis LL, & Carney GE. (2010) [Mating alters gene expression patterns in Drosophila melanogaster male heads](#). BMC genomics, 11(1), 558. PMID: 20937114 

Biology  
Behavioral Biology  
Genetics



October 19, 2010  
10:55 AM  
10 views

### An Oldie but a Goodie: Darwin's 'Survival of the Fittest' meets the irresponsible Homo sapiens

by [Dr. Carin Bondar](#) in [Dr. Carin Bondar - Biologist With a Twist](#)

After writing this post back in April, I had the idea to send one of my video cameras to Jan and Ulrika in Finland so that they could get me some footage of this work. Now that I'm working on creating a 'BIOMUSINGS' episode around it, I thought I'd remind you of this fantastic [...]... [Read more »](#)

Heuschele, J., & Candolin, U. (2010) [Reversed parasite-mediated selection in sticklebacks from eutrophied habitats](#). Behavioral Ecology and Sociobiology.

Biology  
Ecology

## SEARCH

[Advanced Search](#) | [Show All Posts](#)

## TOPICS

[All](#)  
[Anthropology](#)  
[Astronomy](#)  
[Biology](#)  
[Chemistry](#)  
[Clinical Research](#)  
[Computer Science](#)  
[Engineering](#)  
[Geosciences](#)  
[Health](#)  
[Mathematics](#)  
[Neuroscience](#)  
[Philosophy](#)  
[Physics](#)  
[Psychology](#)  
[Social Science](#)  
[Research / Scholarship](#)  
[Other](#)

## DATES

[All](#)  
[Today](#)  
[Yesterday](#)  
[Last Seven Days](#)  
[This Month](#)  
[Last Month](#)

## VIEW

[Condensed](#)  
[Full](#)

## LANGUAGE

[English](#)  
[Change](#)

## JOIN US!

Do you write about peer-reviewed research in your blog? Use [ResearchBlogging.org](#) to make it easy for your readers — and others from around the world — to find your serious posts about academic research.

If you don't have a blog, you can still use our

# Case Study: Nature Network

- Facebook for scientists
- Encompasses several modules
  - blogs
  - forums
  - groups
  - job sites
  - hubs: London, Boston, New York
- Researcher workbench
  - Started to move towards a app-based model

# Nature Network: Collaboration & Productivity

Already have an account? [Log in](#)



Productive collaboration  
with over **25,000**  
colleagues

[Create your account](#)

## Connect

Use Q&A and Forums to keep in touch with colleagues and make new contacts. Invite new members and start new private or public groups.

## Discuss

Create your own blog or explore other blogs. Comment and discuss new issues or events.

## Explore

Browse groups, forums, Q&A the way that suits you. Use our search function, browse by tags or have a look by subject.

Featured Blogs

Featured Topics

Featured Questions



# Forums

## Popular topics



[Science Writers' Blogs](#)  
in [Science Writers forum](#)



["Outreach": Who chose that blasted word?](#)  
in [Science & society forum](#)



[The universe is static and not expanding](#)  
in [Cosmology forum](#)



[What is your preferred energy source?](#)  
in [Energy and Environmental Technology forum](#)



[Differences in graduate programs](#)  
in [PhD Students forum](#)

## Featured topics



[Science Writers' Blogs](#)  
in [Science Writers forum](#)



[What is your preferred energy source?](#)  
in [Energy and Environmental Technology forum](#)



[Differences in graduate programs](#)  
in [PhD Students forum](#)



[The journal article - what does it really cost to produce and gain access to?](#)  
in [Publishing in the New Millennium forum](#)



[Galactose induction of Yeast cells](#)  
in [Nature Protocols Discussion](#)

## Forum Tools



Search forums

[Search](#)

[Advanced search](#)

[Create a New Forum](#)

ADVERTISEMENT

FOR THE LATEST  
**JOBS IN**  
**BIOTECHNOLOGY**  
RESEARCH VISIT





# Your Workbench

+ add app

help

**Nature Video Player**

**nature video**

[Latest](#) [Playlists](#)

**The spirit of Lindau**

**Workbench Help**

**Welcome to your workbench**

The workbench lets you install widgets, allowing you to compile and control a growing library of tools and information without having to visit multiple sites.

We've started you off with our default widgets. To install more on to your workbench:

1. Click 'Add app' in the top-left corner of workbench.
2. Mouse over each icon to read a short description of it. Once you find a widget you'd like to add, click the 'Add' button.
3. You can then choose to add more widgets, or return to your workbench.

You can arrange your workbench by dragging widgets around on the page. To do this, click and

**People Tracker**

**Following** [Follow a user](#) [view all following \(27\)](#)


**Followers** [view all followers \(30\)](#)

--	--	--	--



# Case Study: Useful Chemistry

- Jean-Claude Bradley's Open Lab Notebook
- Uses a wiki as a platform, fully indexed and searchable by Google
- Details of all his lab's experiments





### Actions

-  [Join this Wiki](#)
-  [Recent Changes](#)
-  [Manage Wiki](#)



### Navigation

- [All Experiments](#)
- [UC blog](#)
- [ONSchallenge](#)
- [UC on ChemSpider](#)
- [Mailing List](#)
- [Libraries](#)
- [References](#)
- [Experiment Format](#)
- [Extra Credit](#)
- [Paper03 Draft](#)
- [UgiChem2CML](#)
- [Isolated Compounds](#)
- [Alicia's Masters Thesis](#)
- [CombiUgi Project](#)
- [Open Web Drug Dev.](#)
- [To Do List](#)
- [Ugi Chemicals](#)
- [Ugi NMR Analysis](#)
- [Tim's Paper](#)
- 

## List of all experiments

- [Exp213](#) Solubility of 4-chlorobenzaldehyde in chloroform and methanol by UV spectroscopy - **Khalid**
- [EXP212](#) Solubility measurements of p-nitrobenzaldehyde in different solvents. **Tim**
- [EXP211](#) Solubility estimation by UV-VIS **Khalid**
- [EXP210](#) Solubility estimation in methanol and ethanol **Khalid**
- [EXP209](#) Determination of the time parameter for chloroform containing solutions in speedvac. **Khalid/Tim**
- [EXP208](#) Solubility measurements of 9 aldehydes in 6 different solvents. **Khalid/Tim**
- [EXP207](#) Solubility measurements of boc-gly, vanillin and other compounds in methanol, ethanol and THF **JCB**
- [Exp206](#) Purification of the [ugi product](#)  - **Khalid**
- [Exp205](#) Solubilities of 10 aldehydes in methanol -**Tim and Khalid**
- [Exp204](#) Determination of solubility of Ugi adduct ([99C](#)) in Methanol, Ethanol, Acetonitrile, Tetrahydrofuran, Acetone, Hexane, Chloroform, and Distilled Water - **Cedric and Aneta**
- [Exp203](#) Optimization of a Ugi reaction involving Benzaldehyde, Furfurylamine, Boc-Glycine and *tert*-butyl isocyanide - **Khalid**
- [Exp202](#) Optimization of a Ugi reaction involving Benzaldehyde, Furfurylamine, Boc-Glycine and *tert*-butyl isocyanide - **Khalid**
- [Exp201](#) Optimization of a Ugi reaction involving Benzaldehyde, Furfurylamine, Boc-Glycine and *tert*-butyl isocyanide - **Khalid**
- [Exp200](#) Optimization of a Ugi reaction involving Benzaldehyde, Furfurylamine, Boc-Glycine and *tert*-butyl isocyanide (verified by TomO) - **Khalid**
- [Exp199](#) Optimization of a Ugi reaction involving Benzaldehyde, Furfurylamine, Boc-Glycine and *tert*-butyl isocyanide (verified by TomO) - **Khalid**
- [Exp198](#) Optimization of a Ugi reaction involving Benzaldehyde, Furfurylamine, Boc-Glycine and *tert*-butyl isocyanide - **Khalid**
- [Exp197](#) Optimization of a Ugi reaction involving Benzaldehyde, Furfurylamine, Boc-Glycine and *tert*-butyl isocyanide - **Khalid**
- [Exp196](#) Optimization of a Ugi reaction involving Benzaldehyde, Furfurylamine, Boc-Glycine and *tert*-butyl

### Ads by Google

#### [Affordable Real-Time](#)

Unbelievable! 20,000 reactions and a real-time instrument for \$20,000. [www.appliedbiosystems.com](http://www.appliedbiosystems.com)

#### [Peptide Synthesis](#)

Leader Bio Services. High Quality. HPLC/Mass QC. Lowest Prices. [www.biobasic.com](http://www.biobasic.com)

#### [Organic Reactions in Flow](#)

Improve your Organic Reactions Using our Flow Chemistry Database! [FlowReact.com](http://FlowReact.com)

#### [Formaldehyde Testing](#)

Offgassing, Product Testing Fast Results [www.EMSL.com](http://www.EMSL.com)

#### [Draeger Gas Tubes & Pumps](#)

Full service online gas

# Case Study: JoVE

- Journal of Visualized Experiments
- Video of experiments so other can see exactly what's going on

Search


Home

Browse

For Authors

Subscribe

Home

About JoVE

Editorial Board

Testimonials

Press

Sponsorship

The Team

Contact Us

### What is JoVE?

Journal of Visualized Experiments (JoVE) is a video journal for biological research.

### Sections

All

General

Neuroscience

Immunology &amp; Infection

Medicine

### Keywords

Medicine

Neuroscience

Developmental Biology

Cellular Biology

Plant Biology

Microbiology

Immunology

Basic Protocols

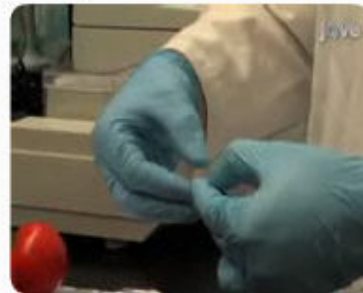
### Follow

10/18/2010

## Combination of Adhesive-tape-based Sampling and Fluorescence *in situ* Hybridization for Rapid Detection of *Salmonella* on Fresh Produce

Bledar Bisha<sup>1</sup>, Byron F. Brehm-Stecher<sup>2</sup>

<sup>1</sup>Center for Meat Safety and Quality, Department of Animal Sciences, Colorado State University, <sup>2</sup>Rapid Microbial Detection and Control Laboratory, Department of Food Science and Human Nutrition, Iowa State University



This protocol describes a simple adhesive-tape-based approach for sampling of tomato and other fresh produce surfaces, followed by rapid whole cell detection of *Salmonella* using fluorescence *in situ* hybridization (FISH).

[View >>](#)

10/17/2010

## Differential Imaging of Biological Structures with Doubly-resonant Coherent Anti-stokes Raman Scattering (CARS)

Tyler J. Weeks<sup>1</sup>, Thomas R. Huser<sup>1, 2</sup>

<sup>1</sup>Center for Biophotonics, University of California, Davis, <sup>2</sup>Department of Internal Medicine, University of

ISSN 1940-087X

[Recommend to Librarian](#)
[Make a Suggestion](#)

Is there a technique you would like to see published? Click the button above to make a suggestion.

### Sponsored Articles

[See all](#)


Bio-Rad Laboratories, Inc  
**Preparation of Gene Gun Bullets and Biolistic Transfection of Neurons in Slice Culture**



Thermo Fisher Scientific  
**Quantitative Real-Time PCR using the Thermo Scientific Solaris qPCR Assay**



Berthold  
**Antibody Profiling by Luciferase Immunoprecipitation Systems (LIPS)**

### Editor's Picks

[Free Access](#)


09/19/2010  
**A Thin-skull Window Technique for Chronic**

# Case Study: PLoS

- Open Access publisher
- PLoS One: All articles that represent valid science are published, no filtering for "importance"
- Commenting is encouraged
- Article level metrics
- Hubs -- curated collections on topics
  - Biodiversity & Clinical Trials
- Currents -- rapid dissemination of results & data
  - Influenza, Huntington, Genomic tests



Imagine... Analysis of the Human miRNA transcriptome  
At single-base resolution

The highest density  
custom arrays. 



PLoS one

accelerating the publication of peer-reviewed science

[Login](#) | [Create Account](#) | [Feedback](#)

Search articles...



Advanced  
Search

 [Browse](#)

 [RSS](#)

[Home](#) [Browse Articles](#) [About](#) [For Readers](#) [For Authors and Reviewers](#)

[Journals](#) [Hubs](#) [PLoS.org](#)

PLoS ONE

RESEARCH ARTICLE

OPEN  ACCESS

# Can Playing the Computer Game “Tetris” Reduce the Build-Up of Flashbacks for Trauma? A Proposal from Cognitive Science

[Article](#)

[Metrics](#)

[Related Content](#)

[Comments: 3](#)


Emily A. Holmes<sup>\*</sup>, Ella L. James, Thomas Coode-Bate,  
Catherine Deeptose

Department of Psychiatry, University of Oxford, Oxford, United Kingdom

Abstract [Top](#)

## Background

Flashbacks are the hallmark symptom of Posttraumatic Stress Disorder (PTSD). Although we have successful treatments for full-blown PTSD, early interventions are lacking. We propose the

 To **add a note**, highlight some text. [Hide notes](#)

 [Make a general comment](#)

### Jump to

[Abstract](#)

[Introduction](#)

[Results](#)

[Discussion](#)

[Materials and Methods](#)

[Acknowledgments](#)

 **Download:** [PDF](#) | [Citation](#) | [XML](#)

 [Print article](#)

 [EzReprint](#) New & improved!

### Metrics

**Total Article Views:** [54588](#)

#### Cited in

[CrossRef \(4\)](#)

[Scopus \(12\)](#)

**Average Rating** ([2 User Ratings](#))

☆☆☆☆☆

[See all categories](#)

[Rate This Article](#)

[More](#)

### Related Content

**Related Subject Categories**



# Can Playing the Computer Game “Tetris” Reduce the Build-Up of Flashbacks for Trauma? A Proposal from Cognitive Science

Article

Metrics

Related Content

Comments: 3

## Article Usage ⓘ

Total Article Views: **54588** from Jan 7, 2009 (publication date) - Oct 18, 2010\*

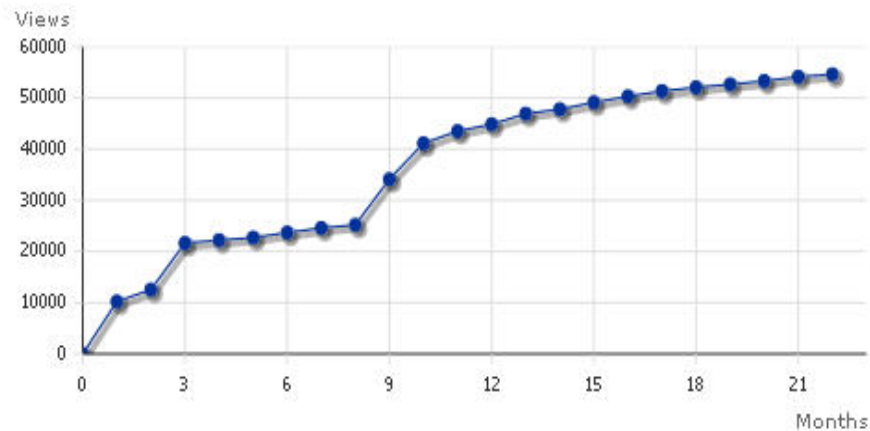
### Breakdown by View Type

HTML Page Views: **52712**

PDF Downloads: **1821**

XML Downloads: **55**

Cumulative Views from Jan 7, 2009 (publication date) - Oct 18, 2010\*



\*Data refer to views from the *PLoS ONE* Web site only.

Download: [PDF](#) | [Citation](#) | [XML](#)

[Print article](#)

[EzReprint](#) New & improved!

## Metrics ⓘ

Total Article Views: **54588**

### Cited in

[CrossRef \(4\)](#)

[Scopus \(12\)](#)

Average Rating [\(2 User Ratings\)](#)

☆☆☆☆☆ [See all categories](#)

[Rate This Article](#)

More

## Related Content

### Related Subject Categories

[Critical Care and Emergency Medicine](#),  
[Women's Health](#), [Mental Health](#),  
[Neuroscience](#)

### Related Articles on the Web

[Google Scholar](#)

[PubMed](#)

More

## Share this Article ⓘ



[Email this article](#)

---

**Cited in**

[CrossRef \(4\)](#), [Scopus \(12\)](#)

Search for citations in [Google Scholar](#).

---

**Other Indicators of Impact** ⓘ**Average Rating**

[\(2 User Ratings\)](#)

Insight 

Reliability 

Style 

**Overall** 

[Rate This Article](#)

**Reader Comments**

[Comments \(2\)](#) and [Notes \(0\)](#)

**Bookmarked in**

[CiteULike \(4\)](#)

**Blog Coverage**

[Postgenomic \(3\)](#), [Research Blogging \(3\)](#)

Search for related blog posts on [Google Blogs](#), [Bloglines](#), [Nature](#)

**Trackbacks**

[4 trackbacks](#)

---

[Download raw Metrics data as XML](#)

## Featured Article

### Identification, classification and evolution of Owl Monkeys

Very little data exists on the taxonomy and phylogeography of the owl monkey, a primate native to both South and Central America that is used extensively in biomedical research. A new report suggests that sequencing mitochondrial and genomic DNA may help researchers better classify different owl monkey species as well as understand their evolution.



## Recently Added Articles

● **Marine genomics: at the interface of marine microbial ecology and biodiscovery**

Karla B Heidelberg, Jack A Gilbert, Ian Joint

Added 19 Oct 2010

## Curators & Steering Committee



**Jonathan Eisen** is an evolutionary biologist and a Professor at the University of California, Davis. [More...](#)

# Case Study: MST Visions

- Outreach blog for the Missouri University of Science and Technology | Rolla
- Tells great stories about what their researchers are doing
- More than just press releases

## Glass master

By Lance Feyh on September 16, 2010 1:15 PM | [Permalink](#) | [Comments \(0\)](#) | [TrackBacks \(0\)](#)



When Delbert Day was told that he could receive the [Phoenix Award](#) anywhere in the world -- he chose St. Louis. One of the reasons is because he wanted to bring people from the glass industry to tour Mo-Sci in Rolla.

Mo-Sci manufactures glass products for medical uses, including glass microspheres. The only successful way to treat inoperable liver cancer is to inject radioactive glass microspheres into the

tumors. If we heard right, a single vial of microspheres (1,000 doses) ends up being worth approximately \$16 million.

Day is currently very excited about the use of glass fibers (scaffolding) in promoting the growth of bone

## Search

## twitter updates

- RT @MSandT\_EcoCAR:  
New hybrid vehicle course offered by @MissouriSandT featured on @GreenGarageBlog. Developed by #EcoCAR team leader 45 minutes ago
- RT @sttoday:  
Washington County mine could be source of rare earth elements <http://bit.ly/ja0u9WVO> <- mining engineering still critical 47 minutes ago

## Research @ S&T

[New system improves product tracking](#)

[S&T water study: Is colloidal silver necessary for bacteria](#)

# Case Study: arXiv physics repository

- Several physics sub-disciplines post nearly all of their articles in the arxiv before formal publication
- Overall, approximately 50% of all physics articles are deposited here
- No formal peer review
- Low cost per article
- Funding model is changing





Open access to 633,626 e-prints in Physics, Mathematics, Computer Science, Quantitative Biology, Quantitative Finance and Statistics

Subject search and browse:

5 Mar 2010: [New Submission System](#) and announcement schedule changes

21 Jan 2010: [Collaborative support plan announced](#)

8 Apr 2009: [Added public author identifiers, Facebook interaction, myarticles widget, and personal Atom feeds](#)

See cumulative "What's New" pages

**Robots Beware:** indiscriminate automated downloads from this site are *not* permitted

## Physics

- [Astrophysics](#) (**astro-ph** [new](#), [recent](#), [find](#))  
includes: [Cosmology and Extragalactic Astrophysics](#); [Earth and Planetary Astrophysics](#); [Galaxy Astrophysics](#); [High Energy Astrophysical Phenomena](#); [Instrumentation and Methods for Astrophysics](#); [Solar and Stellar Astrophysics](#)
- [Condensed Matter](#) (**cond-mat** [new](#), [recent](#), [find](#))  
includes: [Disordered Systems and Neural Networks](#); [Materials Science](#); [Mesoscale and Nanoscale Physics](#); [Other Condensed Matter](#); [Quantum Gases](#); [Soft Condensed Matter](#); [Statistical Mechanics](#); [Strongly Correlated Electrons](#); [Superconductivity](#)
- [General Relativity and Quantum Cosmology](#) (**gr-qc** [new](#), [recent](#), [find](#))
- [High Energy Physics - Experiment](#) (**hep-ex** [new](#), [recent](#), [find](#))
- [High Energy Physics - Lattice](#) (**hep-lat** [new](#), [recent](#), [find](#))
- [High Energy Physics - Phenomenology](#) (**hep-ph** [new](#), [recent](#), [find](#))
- [High Energy Physics - Theory](#) (**hep-th** [new](#), [recent](#), [find](#))
- [Mathematical Physics](#) (**math-ph** [new](#), [recent](#), [find](#))
- [Nuclear Experiment](#) (**nucl-ex** [new](#), [recent](#), [find](#))
- [Nuclear Theory](#) (**nucl-th** [new](#), [recent](#), [find](#))
- [Physics](#) (**physics** [new](#), [recent](#), [find](#))  
includes: [Accelerator Physics](#); [Atmospheric and Oceanic Physics](#); [Atomic Physics](#); [Atomic and Molecular Clusters](#); [Biological Physics](#); [Chemical Physics](#); [Classical Physics](#);

# Case Study: Polymath Project

- Project started by mathematician Timothy Gowers to see if a serious problem could be solved by massive online collaboration
- To prove a special case of the of the density Hales–Jewett theorem
- The answer: yes.
- More similar projects are in the offing



# Gowers's Weblog

Mathematics related discussions

[« A Tricky issue](#)

[Background to a Polymath project »](#)

## Is massively collaborative mathematics possible?

By gowers

Of course, one might say, there are certain kinds of problems that lend themselves to huge collaborations. One has only to think of the proof of the classification of finite simple groups, or of a rather different kind of example such as a search for a new largest prime carried out during the downtime of thousands of PCs around the world. But my question is a different one. What about the solving of a problem that does not naturally split up into a vast number of subtasks? Are such problems best tackled by  $n$  people for some  $n$  that belongs to the set  $\{1, 2, 3\}$ ? (Examples of famous papers with four authors do not count as an interesting answer to this question.)

It seems to me that, at least in theory, a different model could work: different, that is, from the usual model of people working in isolation or collaborating with one or two others. Suppose one had a forum (in the non-technical sense, but quite possibly in the technical sense as well) for the online discussion of a particular

... and getting ...

**Ryan O'Donnell Says:**

February 6, 2009 at 5:10 pm | [Reply](#)



311. I guess you can make the degree go down fairly rapidly compared to the density by requiring the last  $t$  coordinates to be 0. (Density goes down like  $2^{-t}$ , fraction of edges goes down like  $(k/n)^t$ .)

**Jason Dyer Says:**

February 6, 2009 at 5:11 pm | [Reply](#)



312. Counting lemma

This is idle wondering, but given a random (not quasi-random) tripartite graph, do we know the probability  $P$  of  $n$  triangles appearing given a density  $D$ ? This seems like this sort of thing that ought to be just a textbook example.

**gowers Says:**

February 6, 2009 at 5:13 pm | [Reply](#)



313. Triangle removal.

I'm going to try to do two things at once. The first is express myself more clearly when it comes to arguments such as the one in 308, and the second is to try to develop an argument that involves more than one slice, in the hope that degenerate triangles will come into play somehow.

Let me begin by trying to define the nicest possible [triangular grid of slices](#). I'll define  $T_m$  to be the union of all  $\Gamma_{a,b,c}$  such that  $(a, b, c)$  is a triple of integers that belongs to the convex hull of  $(n/3 + m, n/3 - m, n/3)$ , ... actually, cancel this. It seems to be

# Case Study: Sloan Digital Sky Survey

- Sky mapping project, mapping over 900,000 galaxies
- All the data is eventually made openly available
- Data has been used by Galaxy Zoo project -- a citizen science project to classify galaxies



# Sloan Digital Sky Survey

Mapping the Universe

- Home
- SDSS Data
- Science
- Press Releases
- Education
- Image Gallery
- Legacy Survey
- SEGUE
- Supernova Survey
- Collaboration
- Publications
- SDSS-III
- Contact Us
- Search

## The Sloan Digital Sky Survey

The Sloan Digital Sky Survey (SDSS) is one of the most ambitious and influential surveys in the history of astronomy. Over eight years of operations (SDSS-I, 2000-2005; SDSS-II, 2005-2008), it obtained deep, multi-color images covering more than a quarter of the sky and created 3-dimensional maps containing more than 930,000 galaxies and more than 120,000 quasars. SDSS data have been released to the scientific community and the general public in annual increments, with the final public data release from SDSS-II scheduled for October 31, 2008. [SDSS-III](#), a program of four new surveys using SDSS facilities, began observations in July 2008, and will continue through 2014.

The SDSS used a dedicated 2.5-meter telescope at Apache Point Observatory, New Mexico, equipped with two powerful special-purpose instruments. The 120-megapixel camera imaged 1.5 square degrees of sky at a time, about eight times the area of the full moon. A pair of spectrographs fed by optical fibers measured spectra of (and hence distances to) more than 600 galaxies and quasars in a single observation. A custom-designed set of software pipelines kept pace with the enormous data flow from the telescope.

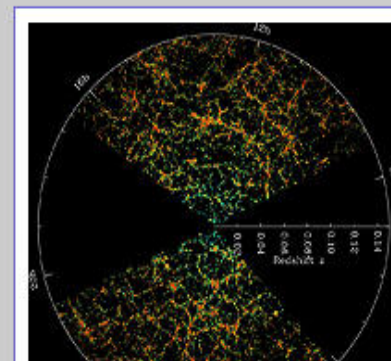
During its first phase of operations, 2000-2005, the SDSS imaged more than 8,000 square degrees of the sky in five optical bandpasses, and it obtained spectra of galaxies and quasars selected from 5,700 square degrees of that imaging. It also obtained repeated imaging (roughly 30 scans) of a 300 square degree stripe in the southern Galactic cap.

With new financial support and an expanded collaboration including 25 institutions around the globe, SDSS-II carried out three distinct surveys:

### Images of the SDSS (click for more information)



The Whirlpool Galaxy (M51)







# SDSS Data Release 7

Sloan Digital Sky Survey

Go to [sdss.org](http://sdss.org)  
DR7 Home  
Where to Start  
Data

The Sloan Digital Sky Survey (see [www.sdss.org](http://www.sdss.org) for general information) will map one-quarter of the entire sky and perform a redshift survey of galaxies, quasars and stars. The DR7 is the seventh major data release and provides [images, imaging catalogs, spectra, and redshifts](#) for download. It is the third and final data release of SDSS-II, an extension of the original SDSS consisting of three subprojects: [The Legacy Survey](#), [SEGUE](#) and a [Supernova survey](#).

[About DR7](#) explains what is new in DR7, and lists remaining or new caveats and subtleties in the data.

Database (CAS)  
Files (DAS)  
Value-Added  
Tutorials

Please refer to the [credits page](#) for our sources of funding, participating institutions, and how to acknowledge the use of SDSS data in your publications. Please also note how to refer to SDSS sources in your publications using the proper [IAU nomenclature for SDSS sources](#).

Older Releases  
About DR7  
Sky Coverage  
Instruments  
Data Processing  
Algorithms

## Data access

The [data products](#) page describes which data SDSS produces. Fits images, spectra and catalog tables are served by the [Data Archive Server \(DAS\)](#). You can also search and brows all catalogs and jpeg images through the [Catalog Archive Server \(CAS\)](#) database. For an overview of the various search forms, see the [data access](#) page.

Help  
FAQ  
Glossary  
Known Issues  
DR Papers  
Helpdesk  
Search

## Imaging

Total cataloged in CAS	11663 sq. deg.
Legacy unique	8423 sq. deg.
Legacy NGC ellipse	7646 sq. deg.

## News

A new release of the Quasar Catalog complete through DR7 is now [available](#)

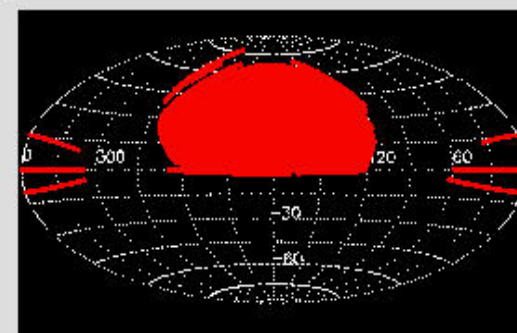
SDSS Mirror sites to bookmark are listed [here](#)

A [paper](#) describing the SEGUE survey is available.

DR7 is released to the world!

A [paper](#) describing DR7 is available.

[More details...](#)



Legacy DR7 Imaging Sky Coverage (Aitoff projection of

# GALAXY ZOO

# HUBBLE

[Home](#) [The Story So Far](#) [The Science](#) [How To Take Part](#) [Classify Galaxies](#) [Forum](#) [Zoo Media](#) [Blog](#) [FAQ](#) [Contact Us](#)



## Welcome to Galaxy Zoo, where you can help astronomers explore the Universe

Galaxy Zoo: Hubble uses gorgeous imagery of hundreds of thousands of galaxies drawn from NASA's Hubble Space Telescope archive. To

Classifier Log In

[Click here to log in](#)

[Register](#)



+ Invert galaxy image

+ Add to my favourites

## Classify galaxies

Answer the question below using the buttons provided.

Is the galaxy simply smooth and rounded, with no sign of a disk?



Smooth



Features or disk



Star or artifact







# Issues in the community

- Data is the new black
- Bloggers vs. journalists
- Open Peer Review
- Impact factors / incentives / reward system
- Why is adoption of new tools so slow

# What do scientists want

- Solve actual problems better than existing tools
- Simplify current f2f social & collaborative networks
- Incentive and reward structures should align with loftier goals
- One stop shopping for recording, processing, analyzing and document preparation
- Data curation
- Integration, integration, integration

# What can we give them

He's like Super Librarian. Everyone forgets, Willow, that knowledge is the ultimate weapon.

-Xander Harris about Rupert Giles  
(*Buffy the Vampire Slayer*, episode 1.5,  
"Never Kill a Boy on the First Date")

# A very provisional list

- Organizing and preserving research data
- Expanding reference & liaison roles -- Twitter, IM, embedded
- Online collaboratories
- Better information filtering systems
- Build useful, targeted IRs that play well with others
- Integrating/leading the way into social networks such as Nature Networks or Science 3.0
- Hosting wiki, blog or lab notebook software
- Use blogs to help them promote their work
- Raising awareness of other tools

# Five guidelines

1. The tool must solve a problem
2. It must outperform existing tools
3. It must be nearly 100% reliable
4. There must be at least one killer feature
5. You must prepopulate

[-Cameron Neylon & Deepak Singh](#)

# Utopia?

- Some components of a potential environment:
  - Google Scholar
  - OA literature
  - Google Docs
  - Nature Network
  - Zotero/Mendeley
  - electronic lab notebooks
  - data analysis tools
  - disciplinary and/or institutional repository

# The challenges

Persuading scientists to be  
more open



# Positioning libraries and librarians as natural allies

# Tapping the Groundswell

- Listen to your community
- Respond to their feedback
- Empower them to contribute
- Connect them to each other
- Embrace their innovation

Li, Charlene and Josh Bernoff. *Groundswell: Winning in a world transformed by social technologies*. Harvard Business School Press, 2008.

# Letting the Groundswell transform you

- It's about person-to-person
- Be focused on your community
- Be patient
- Be opportunistic
- Be flexible
- Be collaborative
- Be humble

Some more thoughts

The barriers to full-scale adoption are not only (or even mainly) technical, but rather **social and psychological**.

- [Timo Hannay](#)

The long-term trends are already unmistakable... productivity measures that look beyond journal publication records, a blurring of the boundaries between journals and databases, **reinventions of the roles** of publishers and editors...

-[Timo Hannay](#)

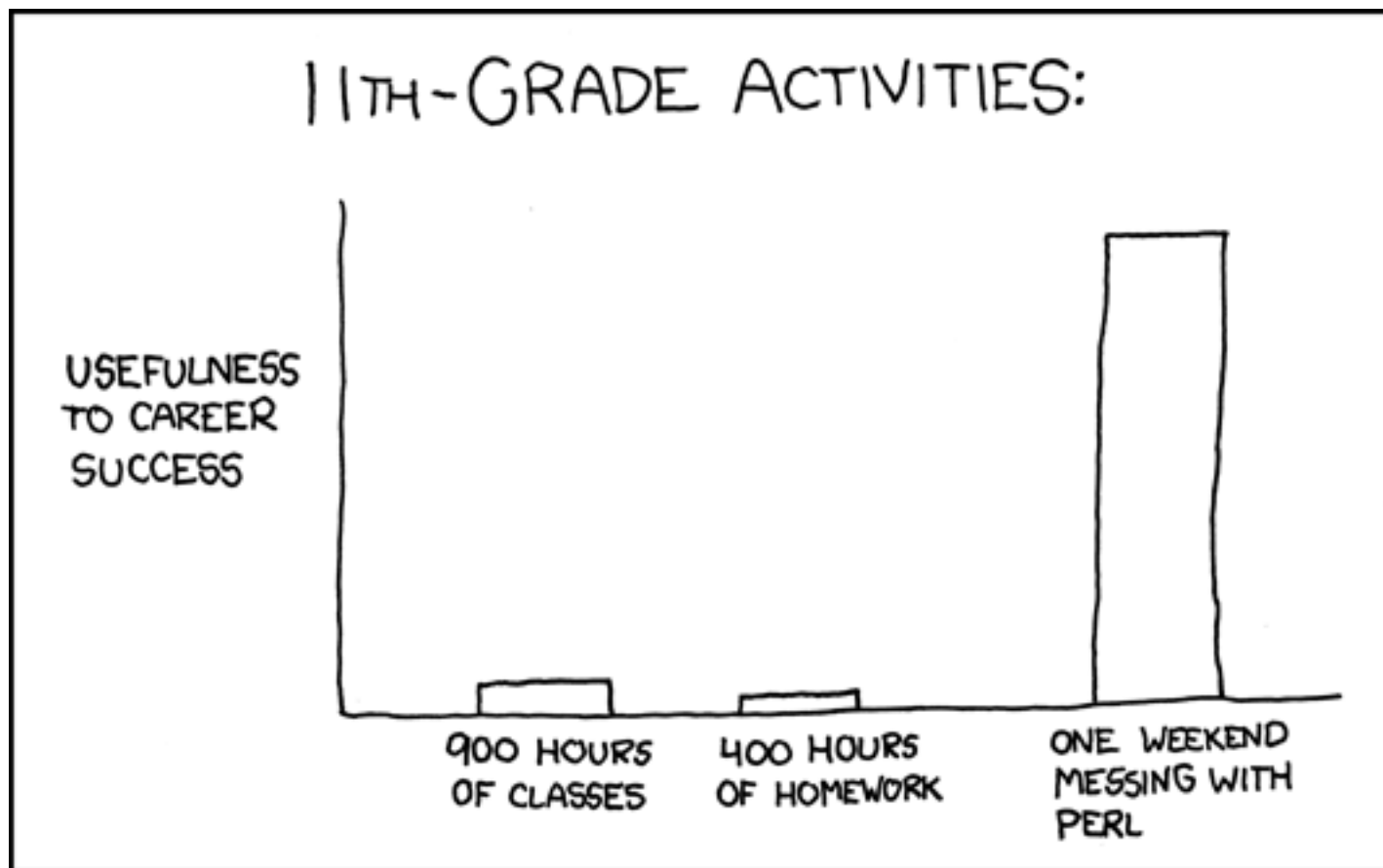
In scientific publishing, we are beginning to see books and electronic journals becoming more integrated with databases, blogs, and other digital media on the Web. **These and other changes could lead to a resurgence in the role of nonprofit professional societies and institutional libraries** in the scientific enterprise as the cost of publishing falls.

-Duncan Hull et al.

What is certain is the fact that we can look forward to a digital library that is more integrated, sociable, personalized, and accessible, although it may never be completely “frost-free”. **Ultimately, better libraries will be a massive benefit to science.**

-Duncan Hull et al.





Why is this worth doing?

[W]e are going to change the way scientists share information; we are going to change the way expert attention itself is allocated, developing new methods for connecting people, for organizing people, for leveraging people's skills. They will be redirected, organized, and amplified. **The result will speed up the rate at which discoveries are made, not in one small corner of science, but across all of science.**

-[Michael Nielsen](#)

I have a dream...

...that all the people of the  
world...

...rich and poor, scientists  
and engineers, journalists  
and bloggers, teachers and  
students, doctors and  
patients...

...can stand on the shoulders  
of giants.

# Contact Info

John Dupuis

[jdupuis@yorku.ca](mailto:jdupuis@yorku.ca)

<http://scienceblogs.com/confessions/>

<http://friendfeed.com/johndupuis>

<http://twitter.com/dupuisj>

This presentation: **<http://tinyurl.com/dupuisbrockoaw>**

License:

