# I need to publish more and read less

Cameron Neylon - Munin Conference Tromsø - 22 November 2011







But first.

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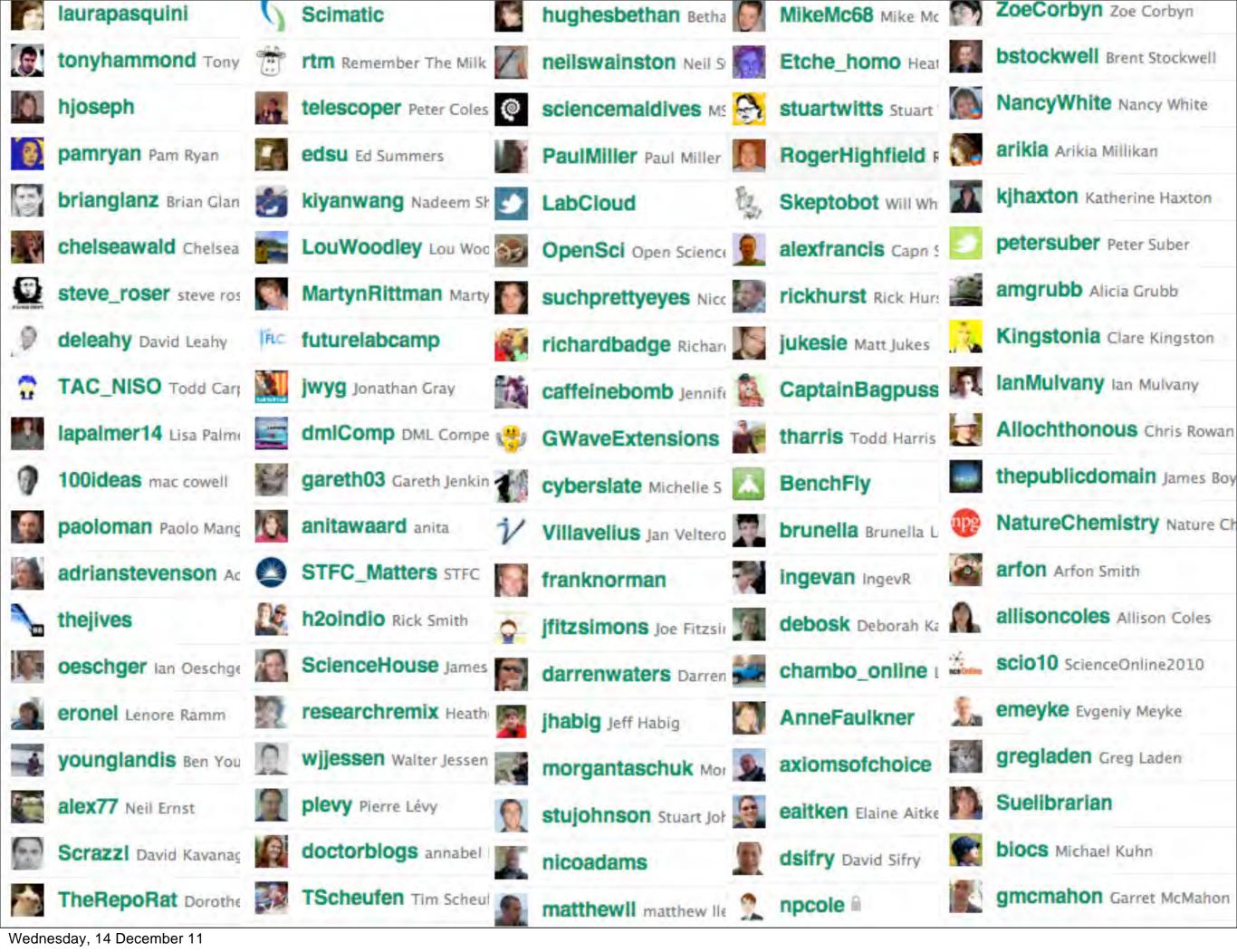
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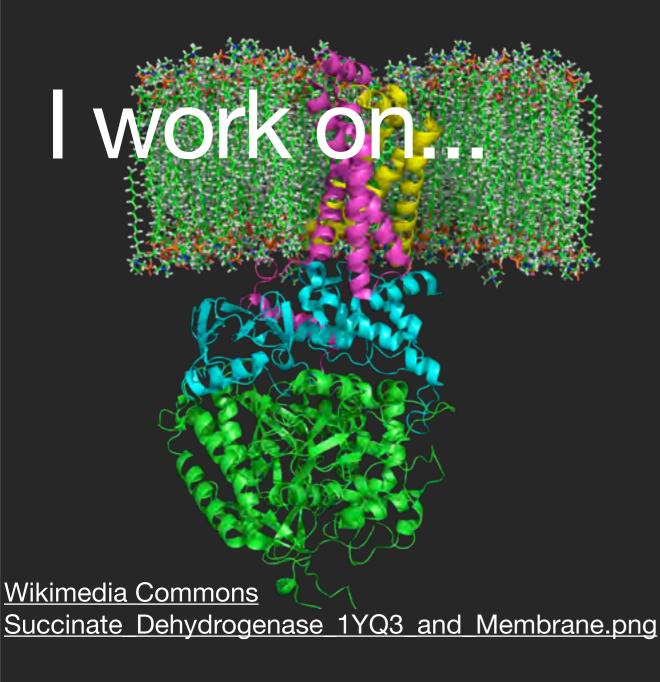


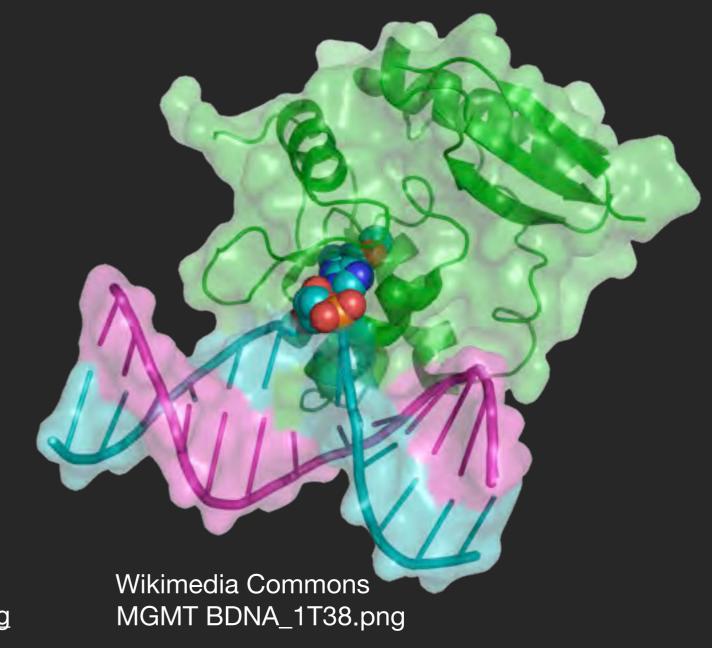


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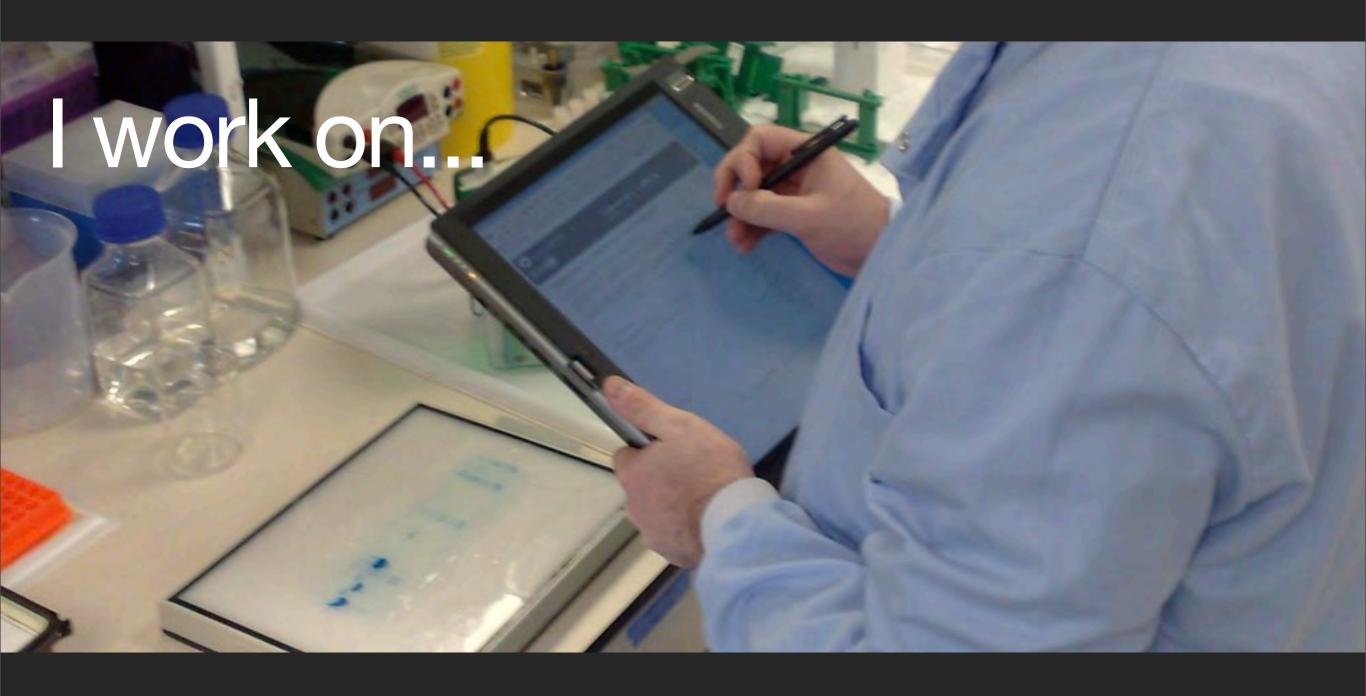








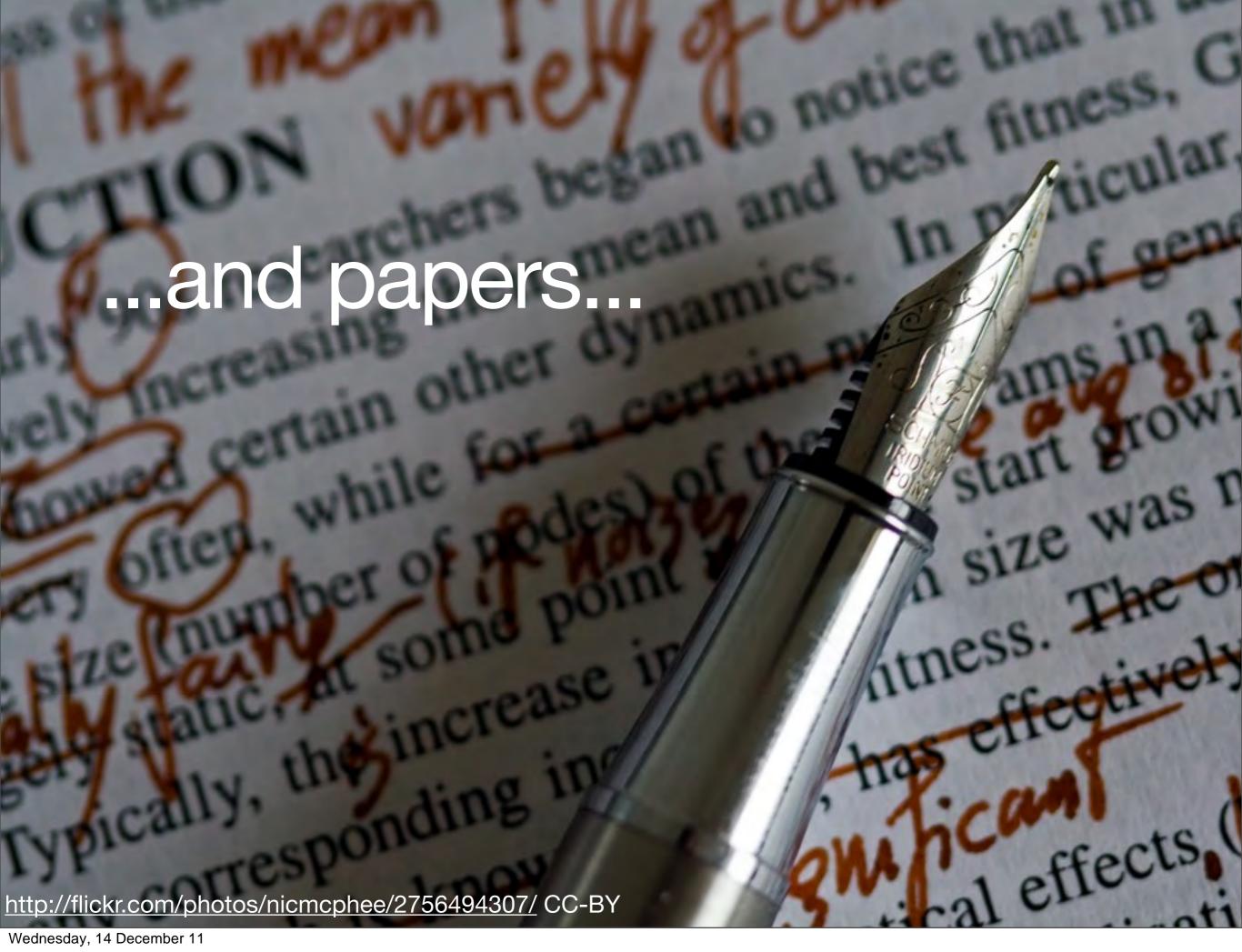




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0	An analysis of the feasibility of short read sequencing N Whiteford, N Haslam, G Weber, A Prügel-Bennett, JW Essex, PL Roach, M Nucleic Acids Research 33 (19), e171
0	Interaction of the Escherichia coli replication terminator protein (Tue) with DNA: a model derived from DNA-binding studies of mutant protein surface plasmon resonance C Neylon, SE Brown, AV Kralicek, CS Miles, CA Love, NE Dixon Biochemistry 39 (39), 11989-11999
0	Replication termination in Escherichia coli: structure and antihelic of the Tus-Ter complex C Neylon, AV Kralicek, TM Hill, NE Dixon Microbiology and molecular biology reviews 69 (3), 501
0	A molecular mousetrap determines polarity of termination of DNA in E. coli MD Mulcair, PM Schaeffer, AJ Oakley, HF Cross, C Neylon, TM Hill, NE Dixon Cell 125 (7), 1309-1319

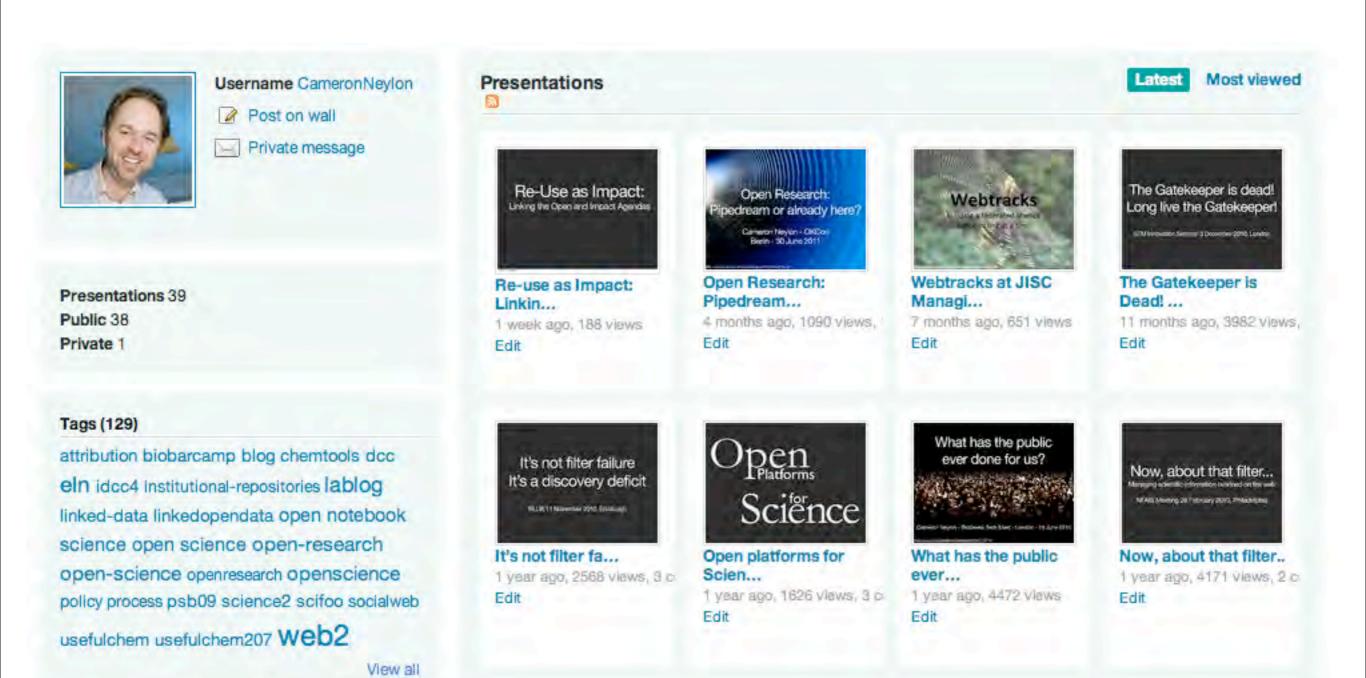
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examples from the literature





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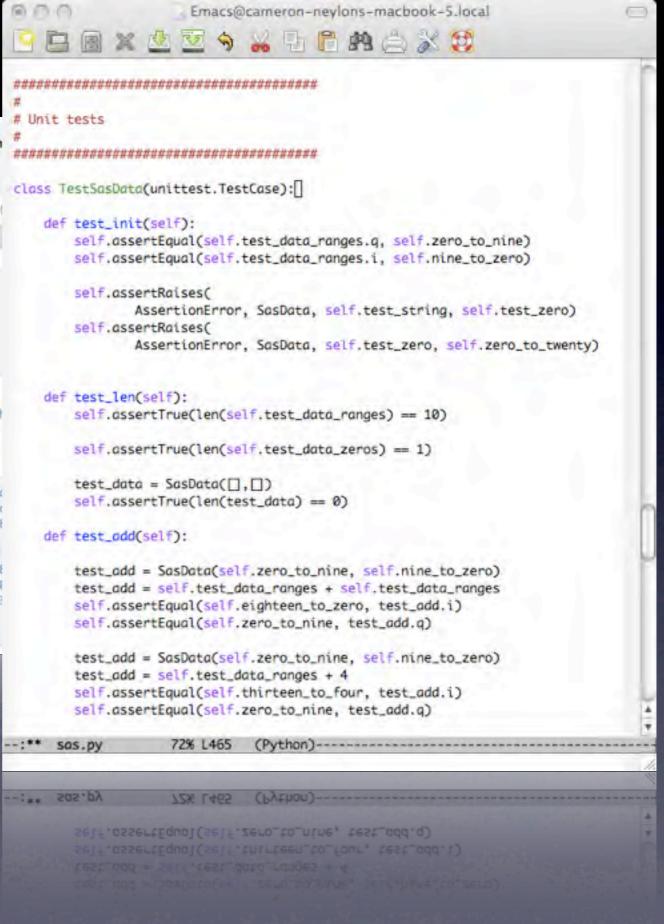
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http://cameronneylon.net

## Papers are not enough...





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...data...

### Need to communicate...





But that's ok...



Many new ways and places to publish...

So...

group, and finally attachment to the solid support. In addition the use of intein based methods as well as the preparation of the solid support for Staudinger ligation often require reagents such as phosphines or thiophenols that are toxic and difficult to handle.

Therefore there remains a significant need for robust and simple methodologies for protein immobilization that can be applied to wide range of proteins and solid supports. The identification of the Sortase transpeptidase [19] provided an alternative approach to protein ligation. Sortases recognise a specific peptide sequence (LPETG for SrtA of S. aureus used in this work) in proteins targeted for covalent attachment to the cell wall peptidoglycan. The peptide tag sequence is cleaved and then ligated to the pentaglycine moiety on the peptidoglycan precursor Lipid II. Proteins expressed with the C-terminal recognition sequence can be covalently attached to a wide range of constructs with an N-terminal glycine amide motifincluding peptides [20], PNA [21], full length proteins [22] and small molecule substrates [23]. Another group has independently described an example of Sortase mediated ligation to a beaded solid support [22]. These reactions proceed under aqueous conditions without the addition of any further reagents beyond the protein, ligation substrate, and Sortase. Thus Sortase has the potential to provide a means of linking expressed proteins to a wide range of solid supports which is mild, selective, and can be carried out in a single step. Here we investigate the ability of S. aureus SrtA to ligate proteins to a range of solid supports.

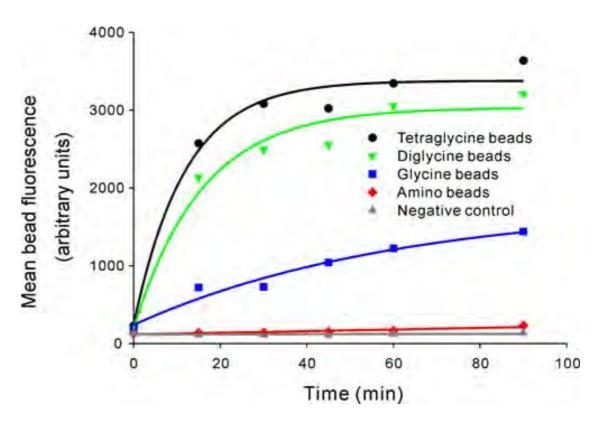


Figure 1. Ligation of fluorescent proteins to polymer beads. (a) GMA beads modified with one, two, or four glycine residues were incubated with EGFP-LPETGG-His<sub>6</sub> and Sortase. Samples were taken at specific time points and analyzed on a BD FACSAria. Controls contained beads with no glycine or diglycine beads without Sortase. Error bars showing the standard error in the mean fluorescence are omitted as they are generally smaller than the data symbols. Errors are given in Supplementary Data S2.

doi:10.1371/journal.pone.0001164.g001

to a range of solid supports.

# ...when we publish...

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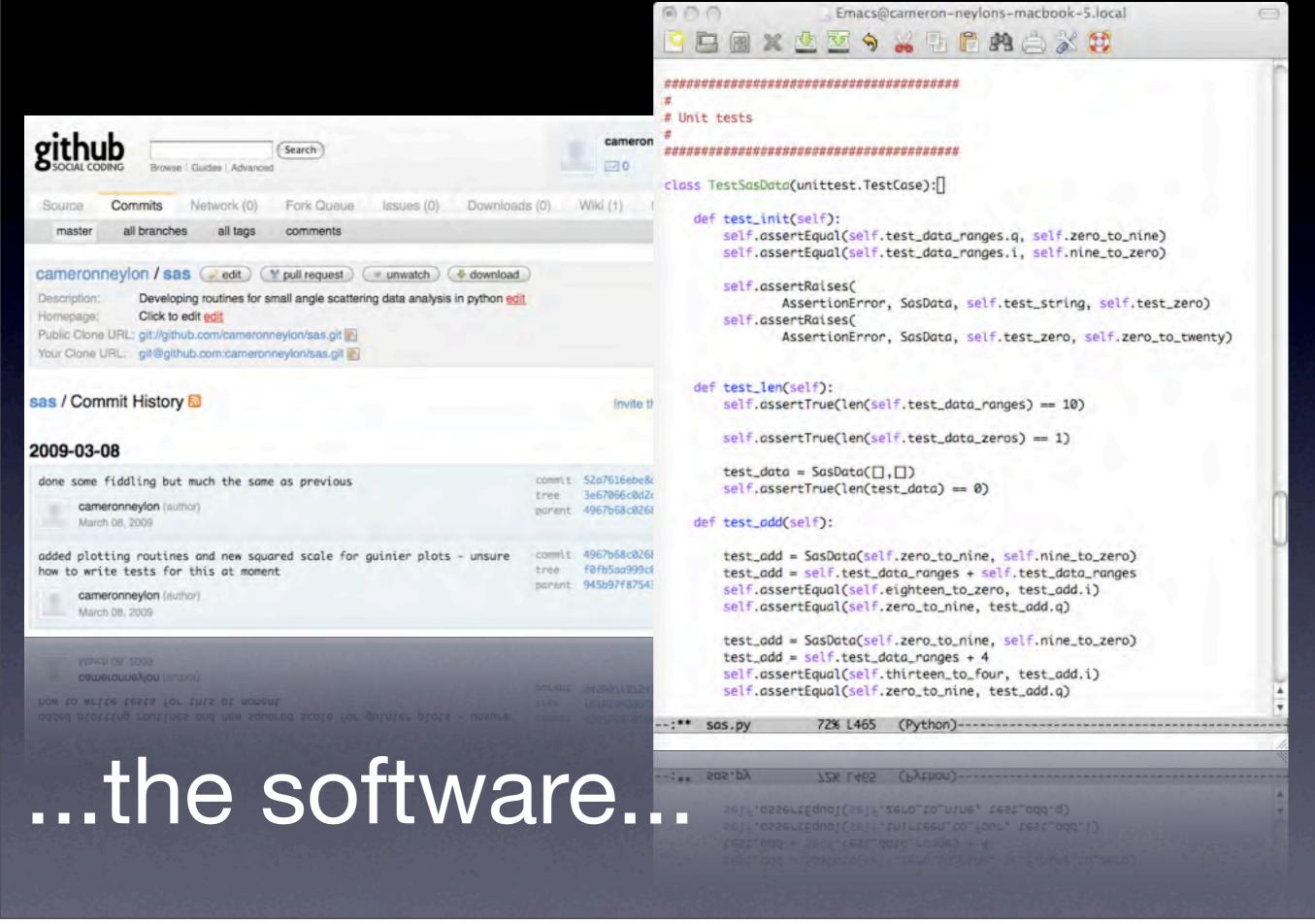
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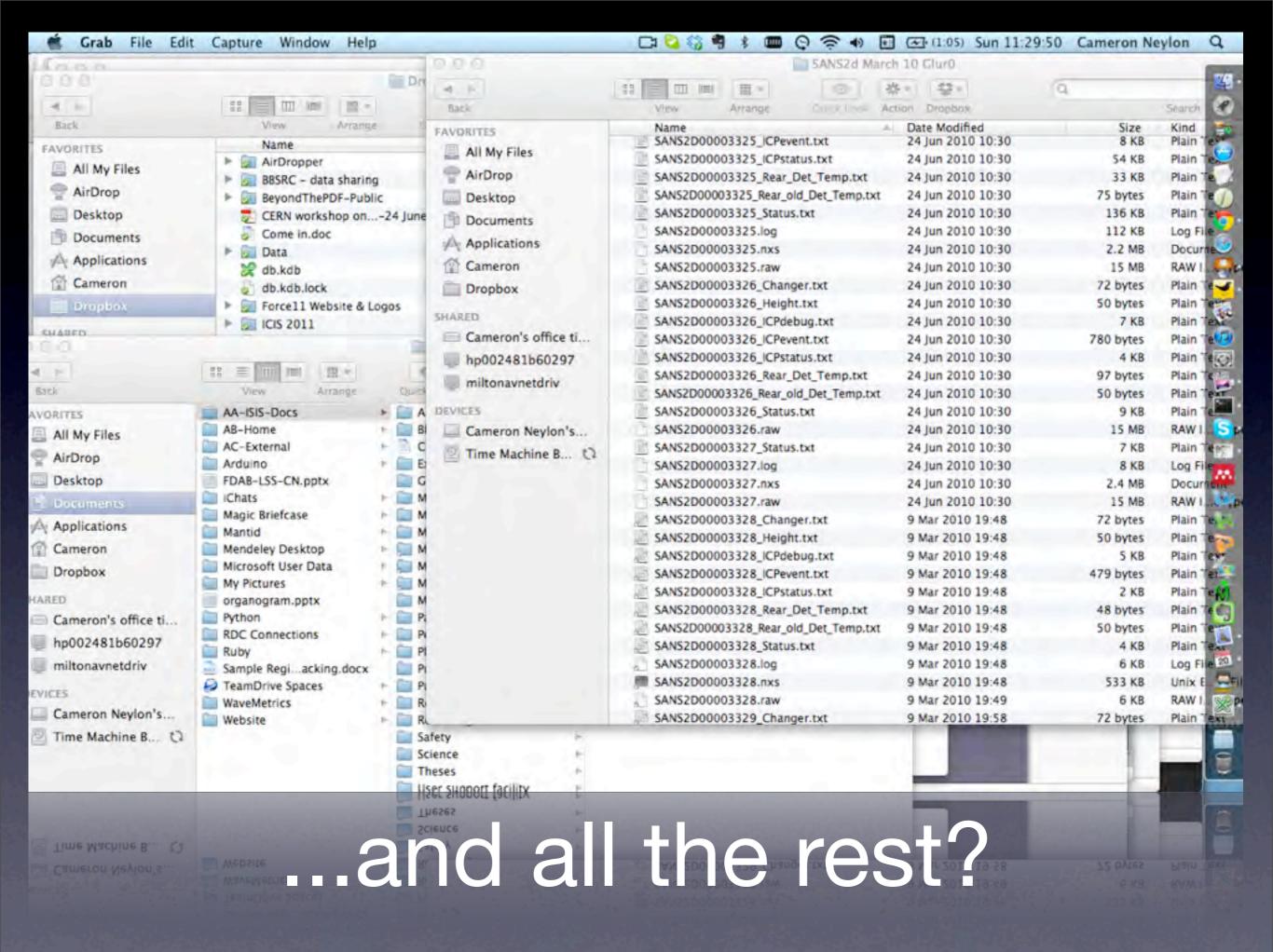




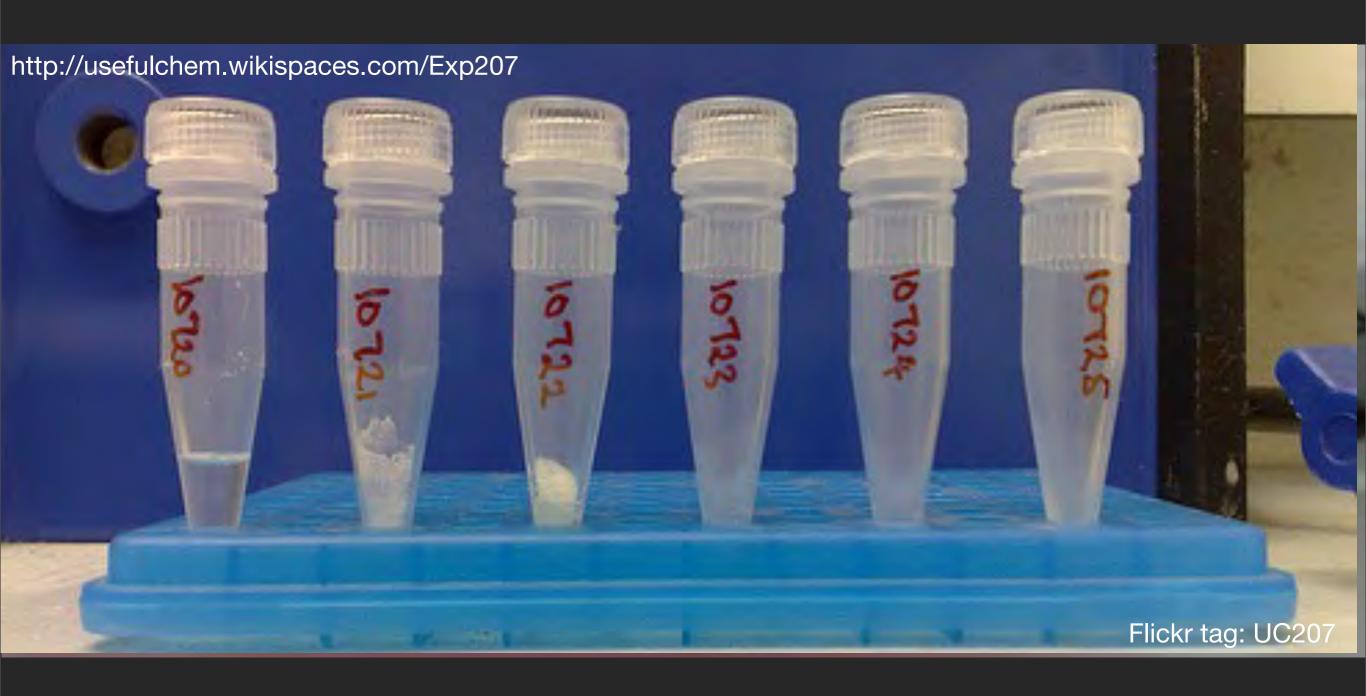


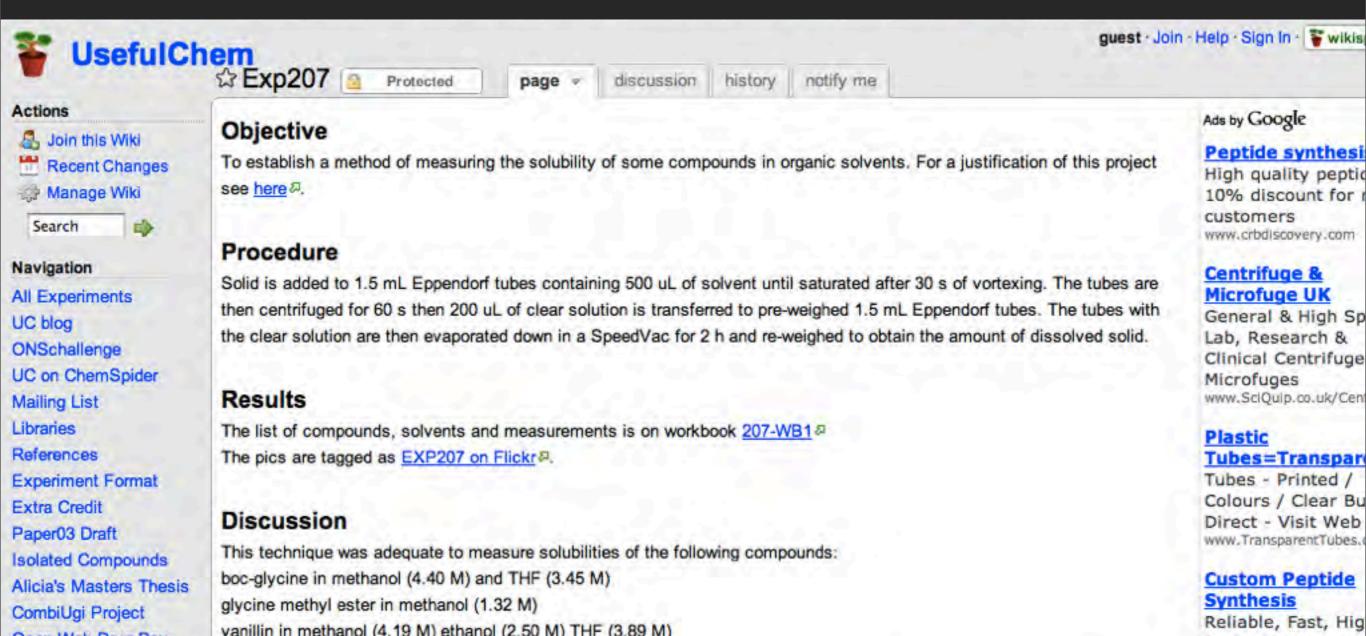
...in the right places...











Home » Blog, Featured

### Reflections on research data management: RDM is on the up and up but data driven policy development seems a long way off.

11 NOVEMBER 2011

NO COMMENT



Image by Idaho National Laboratory via Flickr

I wrote this post for the Digital Curation Centre blog following the Research Data Management Forum meeting run in Warwick a few weeks back. If you feel moved to comment I'd ask you to do it over there.

The Research Data Management movement is moving on apace. Tools are working and adoption is growing. Policy development is starting to back up the use of those tools and there are some big ambitious goals set out for the next few years. But has the RDM movement taken the vision of data intensive research to its heart? Does the collection, sharing,

and analysis of data about research data management meet our own standards? And is policy development based on and assessed against that data? Can we be credible if it is not?

Watching the discussion on research data management over the past few years has been an exciting experience. The tools, that have been possible for some years, now show real promise as the somewhat raw and ready products of initial development are used and tested.

Practice is gradually changing, if unevenly across different disciplines, but there is a growing awareness of data and that it might be considered important. And all of this is being driven increasingly by the development of policies on data availability, data management, and data archiving that stress the importance of data as a core output of public research.

#### core output of public research.

of policies on data availability, data management, and data archiving that stress the importance of data as a

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"Skitchrolling" - When an apparently interesting link leads you to Scholarly Kitchen...

Saturday 10:47



Yikes. Weather for Tromsø for next five days...might make it above zero...will be needing to pack warm... Friday 17:51



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#### Lifestream



Yikes. Weather for Tromsø for next five days...might make it above zero...will be needing to pack warm... [cameronneylon]

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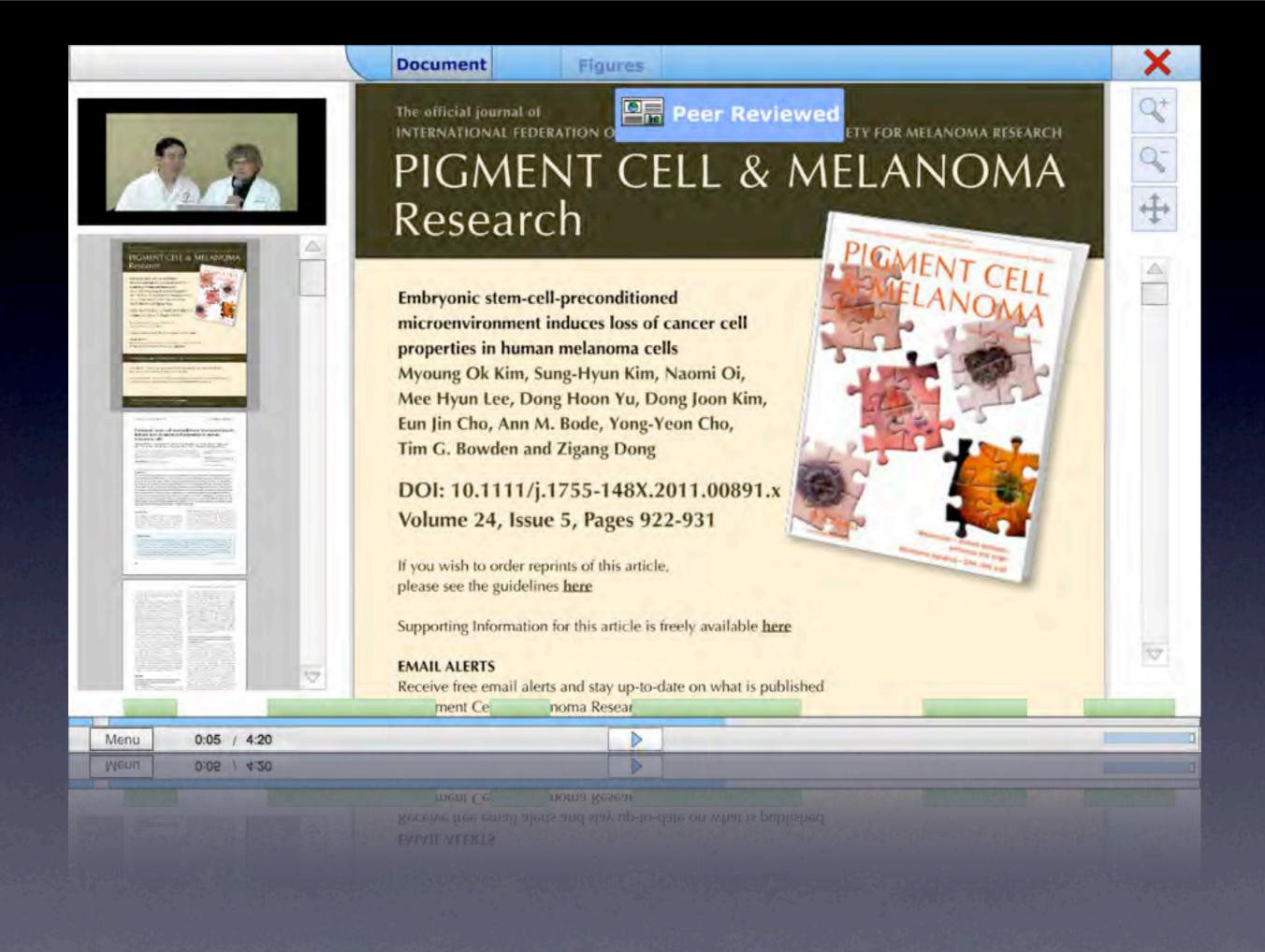


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#### Tus (biology)

From Wikipedia, the free encyclopedia

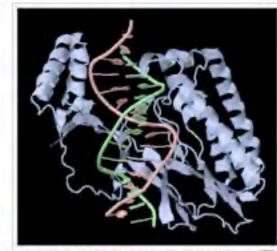
(Redirected from Tus protein)

Tus is a sequence-specific DNA-binding protein that promotes termination in the DNA replication process of prokaryotes. In E Coli, Tus binds to 10 closely related sites encoded in the chromosome. These sites bind 23 base-pairs. The 10 sites are called Ter sites, and are designated TerA, TerB, ..., TerJ. These binding sites are asymmetric, such that when a Tus-Ter complex (Tus protein bound to a Ter site) is encountered by a replication fork from one direction, the complex is dissociated and replication continues (permissive). But when encountered from the other direction, the Tus-Ter complex provides a much larger kinetic barrier and halts replication (non-permissive). The multiple Ter sites in the chromosome are oriented such that the two oppositely moving replication forks are both stalled in the desired termination region. [2]

#### Further reading

[edit]

- "Interaction of the Escherichia coli replication terminator protein (Tus) with DNA: a model derived from DNA-binding studies of mutant proteins by surface plasmon resonance." [3]
- "Replication termination in Escherichia coli: structure and antihelicase activity of the Tus-Ter complex."<sup>[4]</sup>
- "A molecular mousetrap determines polarity of termination of DNA replication in E. coli."[2]
- "Isolation and characterization of mutants of Tus, the replication arrest protein of Escherichia coli." [5]
- "Biophysical characteristics of Tus, the replication arrest protein of Escherichia coli." [6]
- "Structure of a replication-terminator protein complexed with DNA."[1]
  - Structure at protein data bank



Representation of the x-ray crystal structure of Tus-Ter protein-DNA complex.

(Jmol rendering of coordinates from [1]. The DNA strands are shown in pink and green.)

References

edit

1. ^ a b Kamada, K.; Horiuchi, T.; Ohsumi, K.; Shimamoto, N.; Morikawa, K. (1996). "Structure of a replication-terminator protein complexed with DNA". Nature 383 (6601): 598–603. Bibcode 1996Natur.383..598K & doi:10.1038/383598a0 & PMID 8857533 & edit

1. ^ # # Kamada, K.; Horiuchi, T.; Ohsumi, K.; Shimamoto, N.; Morikawa, K. (1996). "Structure of a replication-terminator protein complexed with DNA". Nature 383 (6601): 598–603. Bibcode 1996Natur.383..598K 例. doi:10.1038/383598a0 例. PMID 8857533 例. eds.

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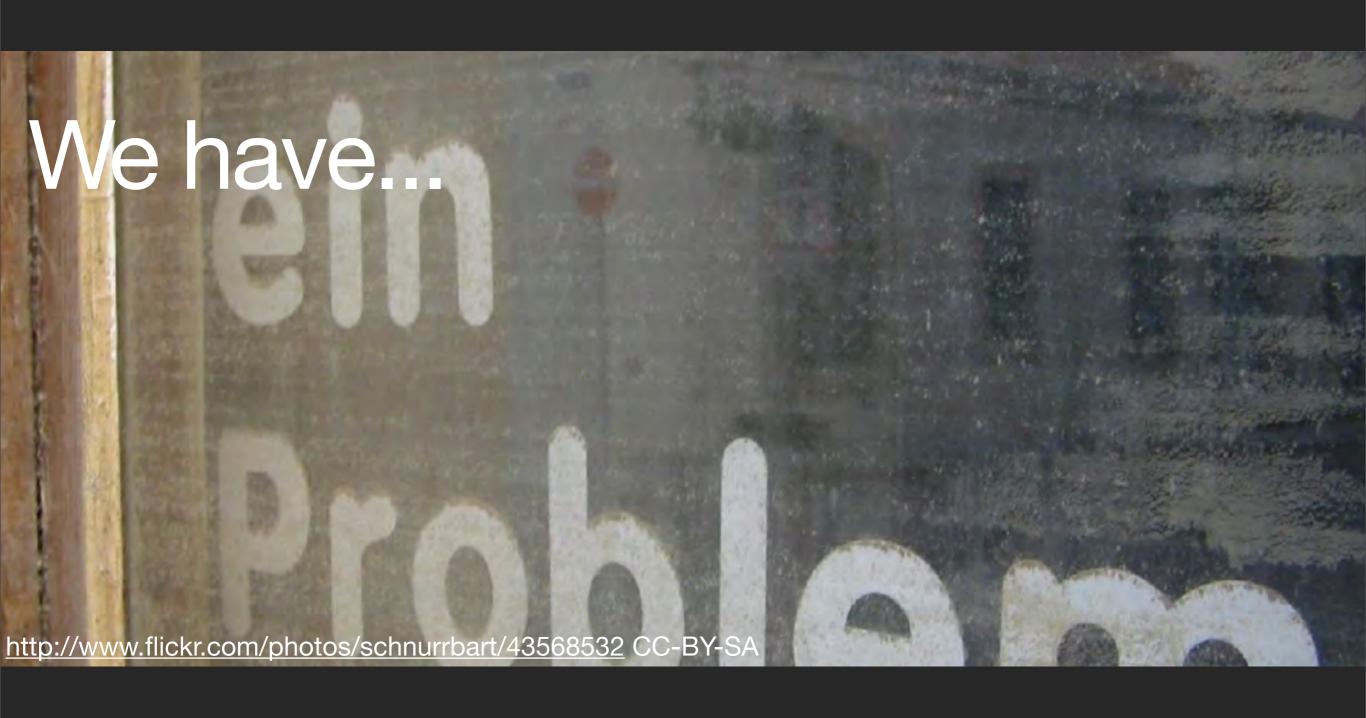




# This is not sustainable...

"I need to publish more"

...not work more...



A resource problem...



# Whether it's money...







# ...or make it cheaper.

## Introduction

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# Paper

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## Methods

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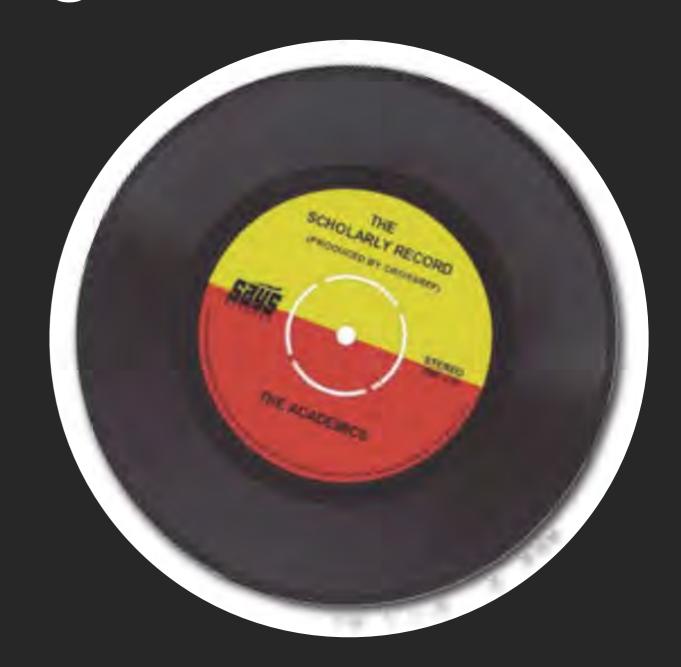
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## Discussion





# Publication as a side effect of recording....



"Publish@Source"

Jeremy Frey,

Southampton



# Cameron's LaBLog

The online open laboratory notebook of Cameron Neylon

#### UV-Vis of 2mg/mL GFP

9th February 2009 @ 15:37

Data Type: UV-Vis

From UV-Vis of Lysozyme and GFP samples from I22 SAXS



This Post is Linked By: UV-Vis of Lysozyme and GFP samples from I22 SAXS;

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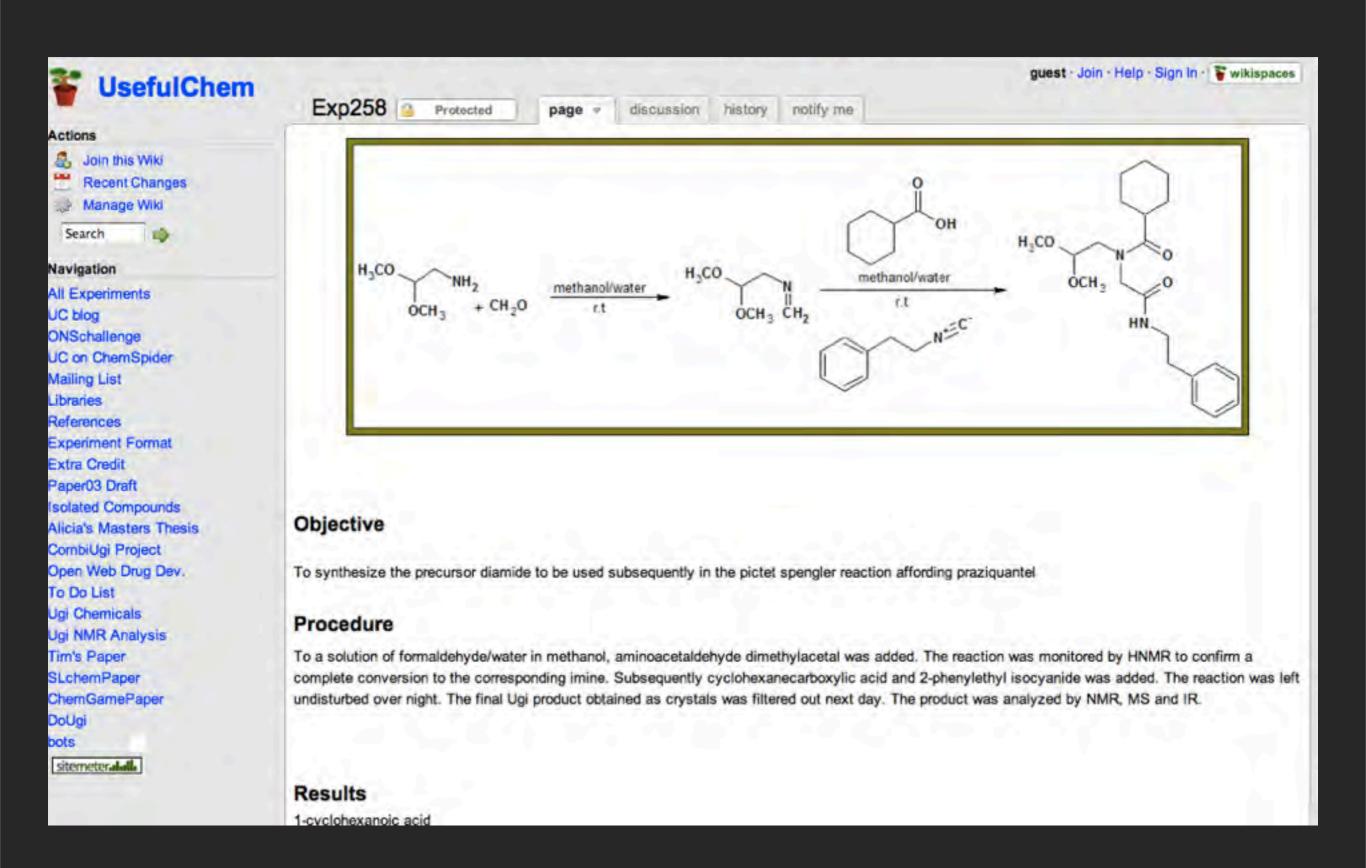
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Procedures (44)

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## CARL BOETTIGER

Theoretical Ecology and Evolution

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#### WELCOME TO MY LAB NOTEBOOK

#### DISCLAIMER: NOT A BLOG



Welcome to my open lab notebook. This is the active, permanent record of all my scientific research, standing in place of the traditional bound lab notebook. It is a record of ideas, and intuitions; results and mistakes. Please bear in mind that the notebook is primarily a tool for

me to do science, not communicate it. I write my entries with the hope that they are intelligible to my future self; and maybe intelligible to my collaborators and experts in my field. This is not a research blog, where each entry can be read alone and understood by a general audience in an edited and polished form.

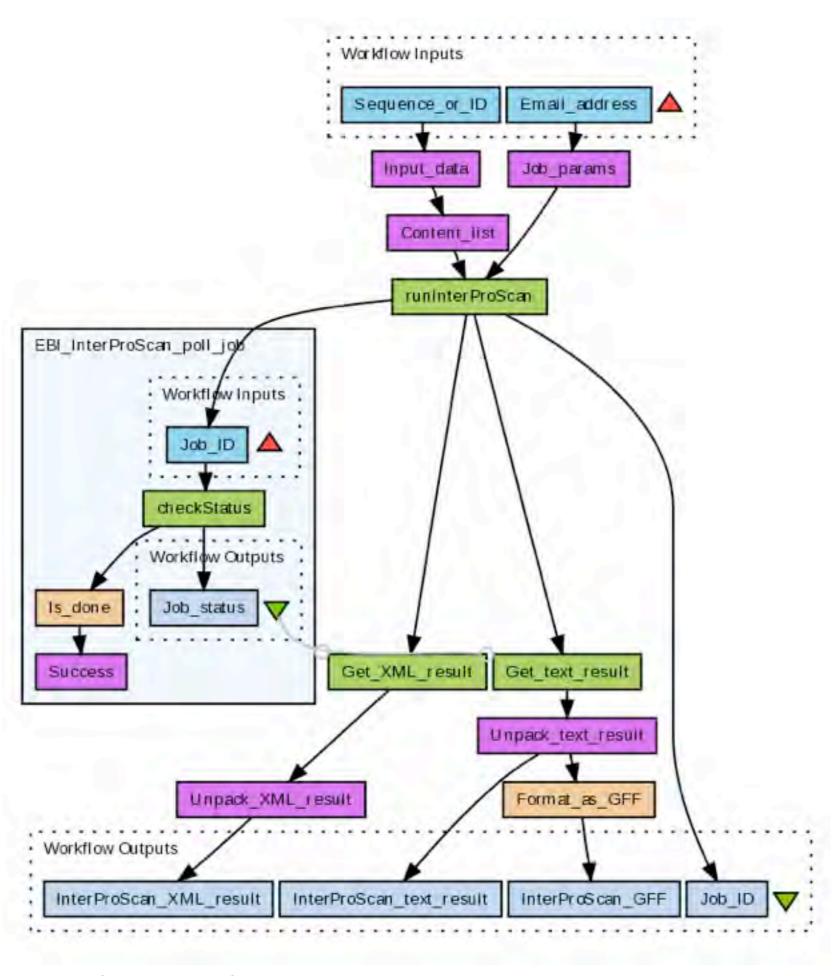
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So you've probably noticed this lab notebook is openly accessible, you can read it online without passwords or permissions. And if you've read the November 8, 2010 - 2:50 am

By Carl

Posted in Open Notebook Thoughts

Comments (1)



& Fork







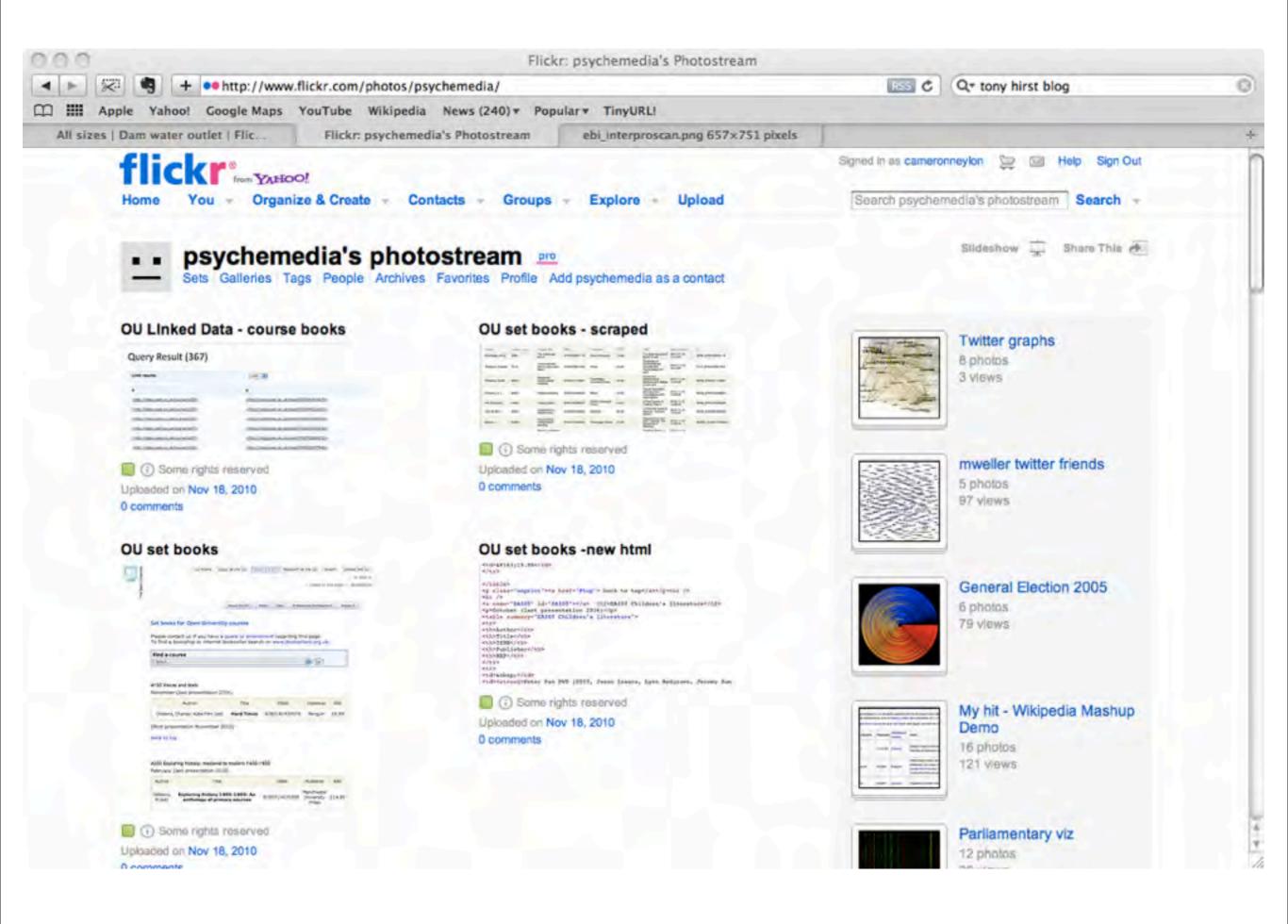
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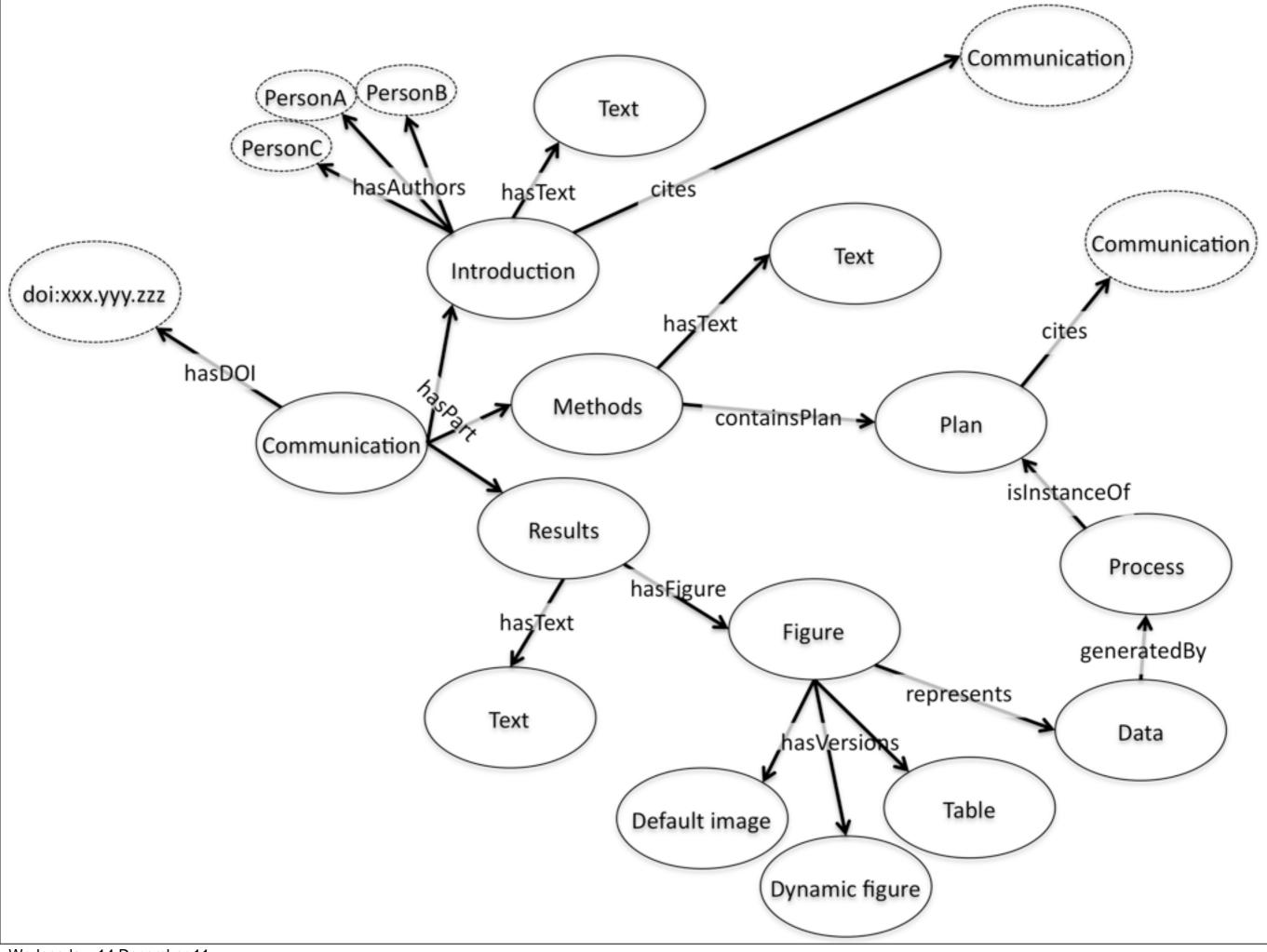
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AddRawFilesGui.py	July 01, 2010	working towards displaying run titles for selec	[cameronneylon]
SANSReduction_for_testing_only.py	June 30, 2010	Tested SansReduce as far as possible outside of	[cameronneylon]
SansReduce.py	September 14, 2010	Corrected error in assignment of Can run - was	[cameronneylon]
SansReduceExamples.txt	September 08, 2010	Added some draft examples [cameronneylon]	
SansReduceGui.py	September 14, 2010	Working version, not yet tested for accurate mu	[cameronneylon]
images/	June 23, 2010	Working version with some substandard documenta	[cameronneylon]
ablogpost.py	July 07, 2010	Functional but not comprehensively tested blogg	[cameronneylon]



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# ...and then collect





# storyful.

Focus Community Home Search

Storyful

Updated a day ago

> Tweet



#### Silent protests at UC Davis after pepper-



From: @StopBeck



From terrydatiger

Protesters changed tactics on Saturday with their protests, according to one blogger who filmed the silent treatment:

A group of highly organized students formed large gap for the chancellor to leave. They chanted "we are peaceful" and "just walk home," but nothing changed for several hours. Eventually student representatives convinced the chancellor to leave after telling their fellow students to sit down and lock arms.

One of the students pepper sprayed yesterday, a young man wearing a brown down coat over a tie-dye shirt, said he met with Kotehi and personally showed her a video of pepper spraying attack. Speaking to about a thousand students with the "human mic," the young man said he personally asked for her resignation.

From The Second Alarm

# storyful.



Storyful Updated a day ago Tweet 44

#### Silent protests at UC Davis after pepper-



One professor went public with his concerns:



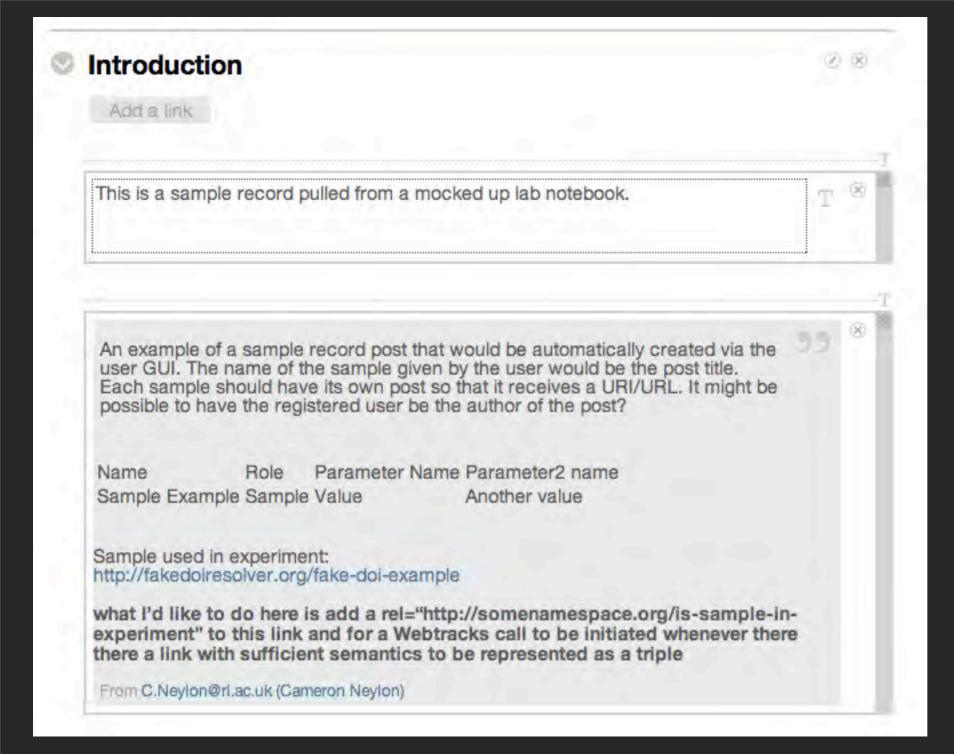
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#### Introduction

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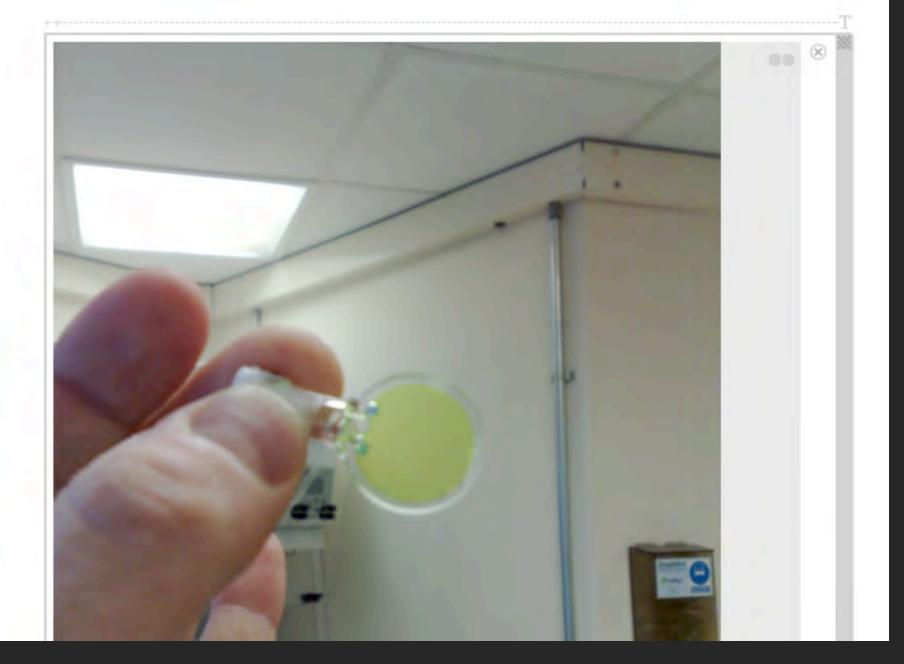
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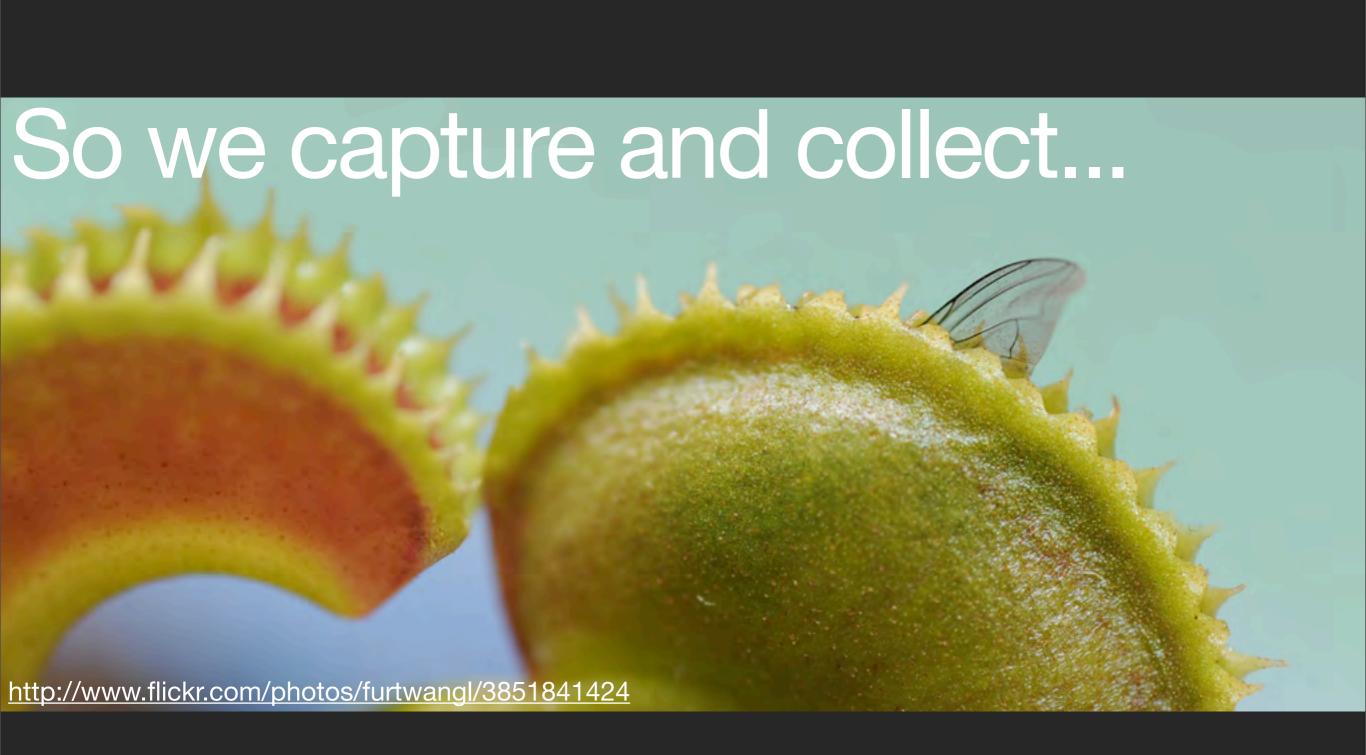


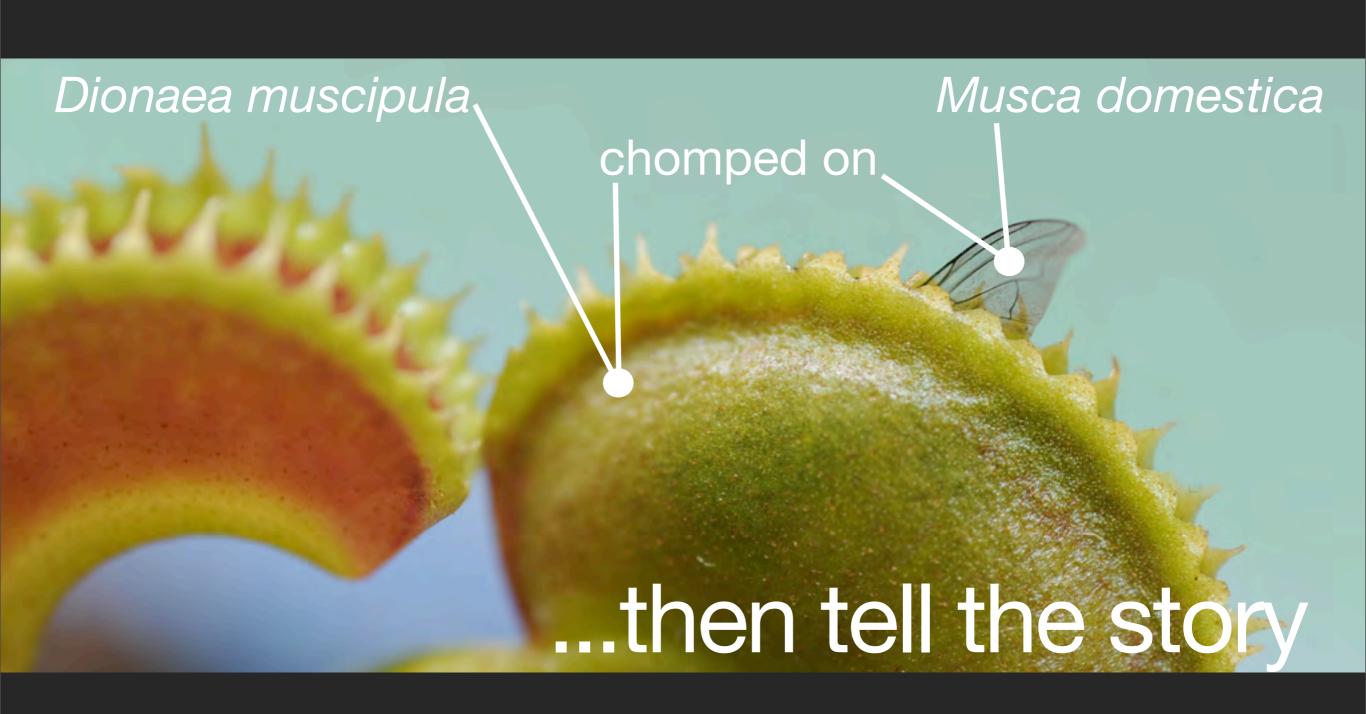
I got a good picture of the sample and posted it to flickr. Got so excited I even tweeted about it...

What a beautiful green sample we have for the experiment! Looking good for the measurement!

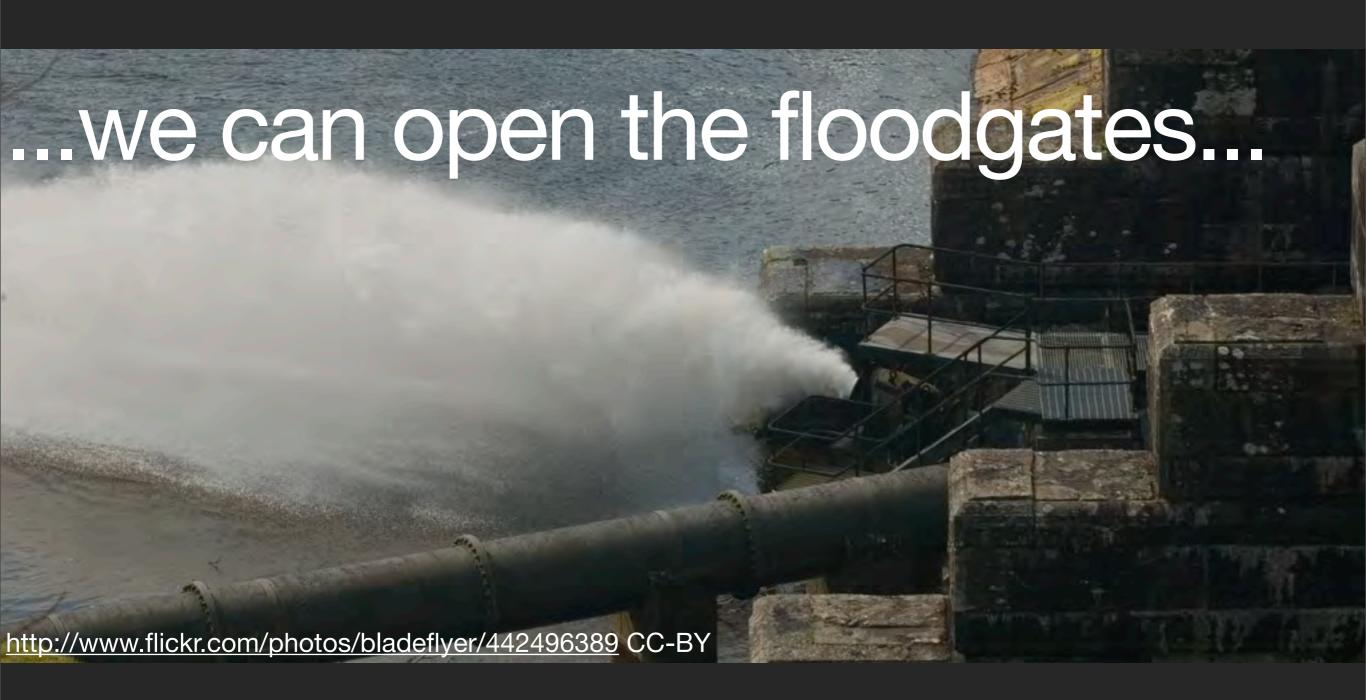
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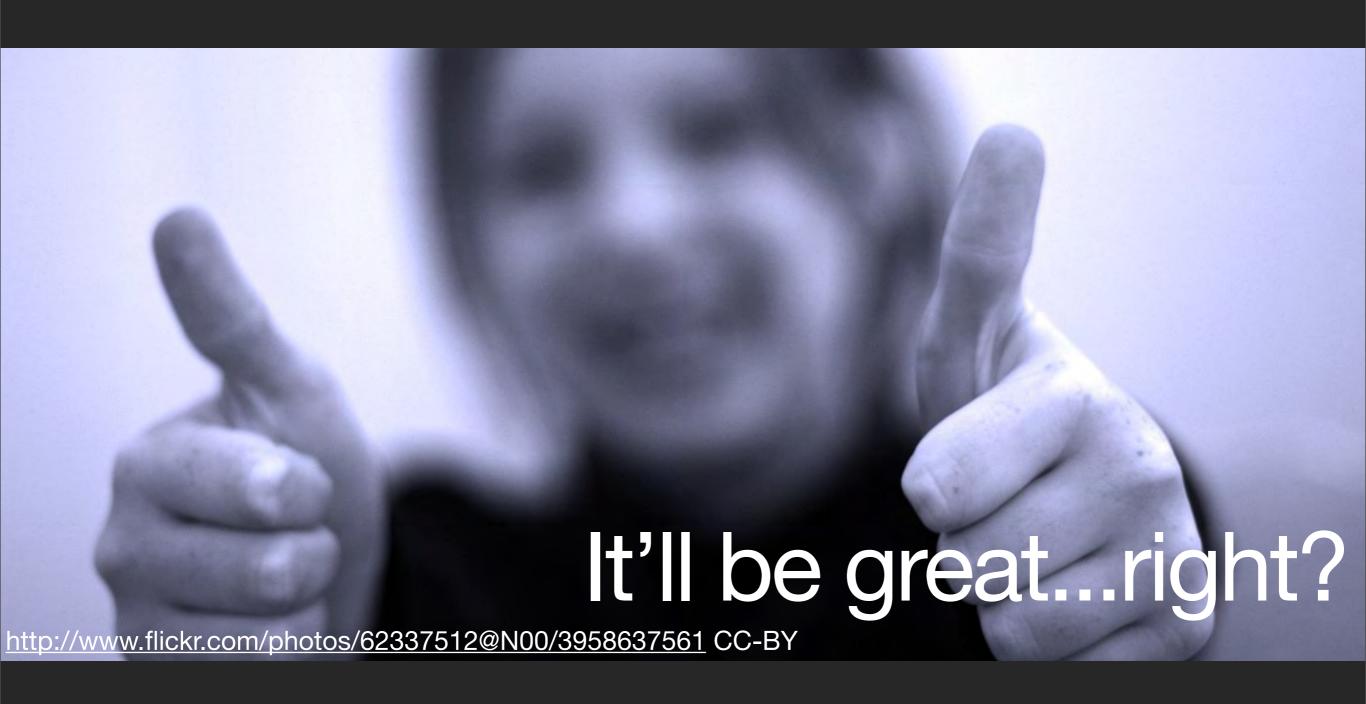




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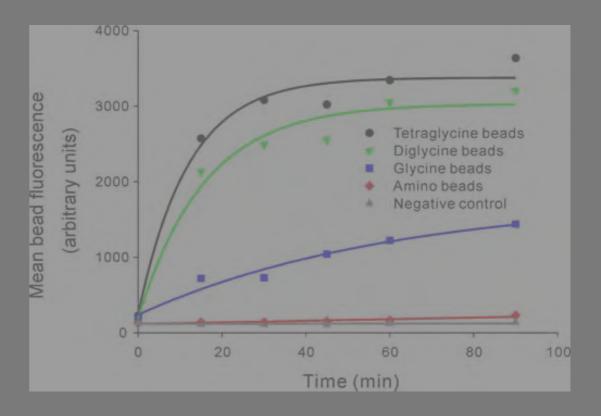


group, and finally attachment to the solid support. In addition the use of intein based methods as well as the preparation of the solid support for Staudinger ligation often require reagents such as phosphines or thiophenols that are toxic and difficult to handle.

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Genotypes Kit-2 (Genalex format) Locus 18: EEU75 A 0; Locus 20: DUKCT A 0; Locus 25: EJV8T A 0; Locus 28: EMILY A O; Locus 32: ERHBI A 0; Locus 39: DZ447 A 0; Locus 42: concat14 A 0; Locus 45: DE576 A 0

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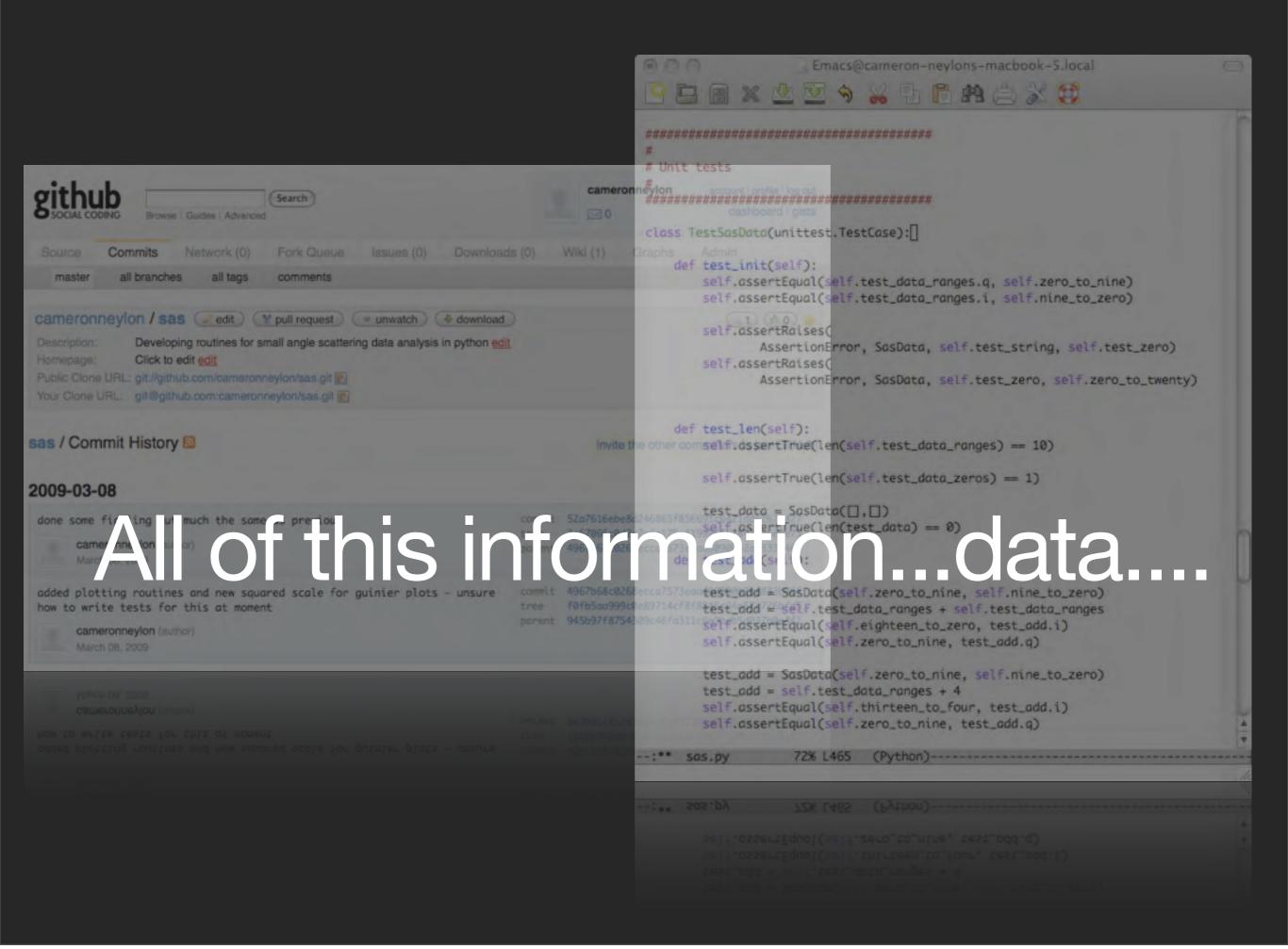
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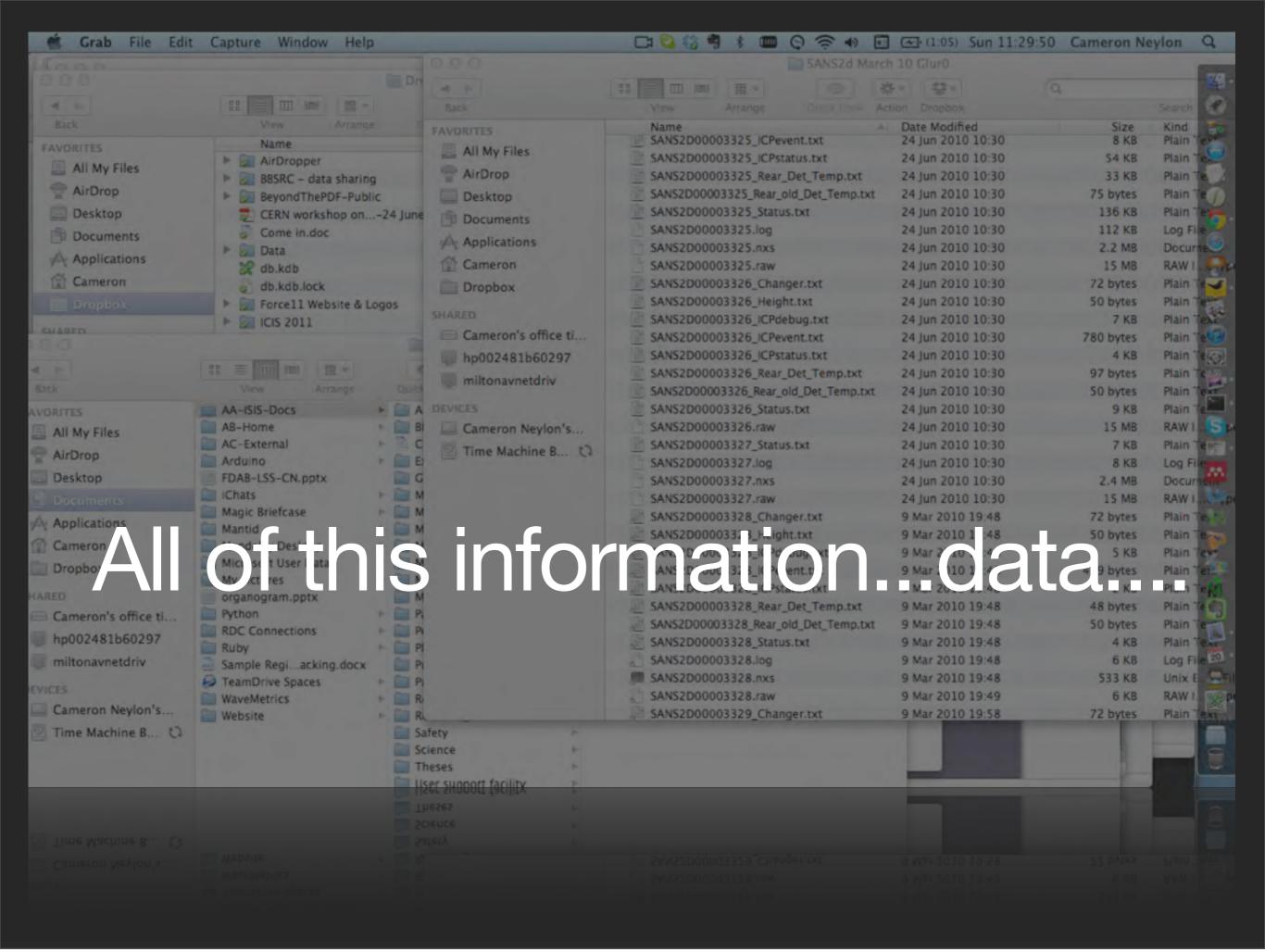


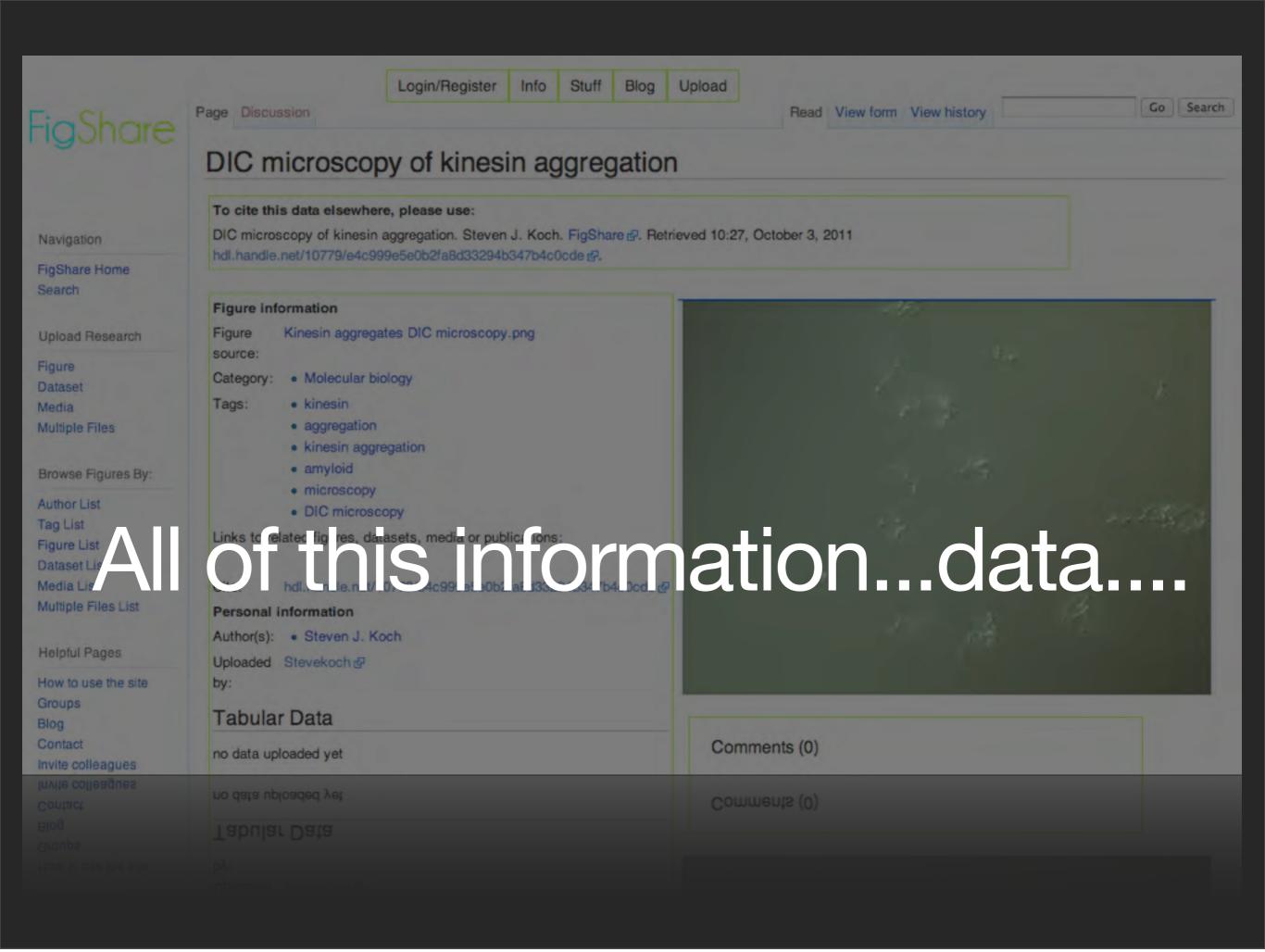


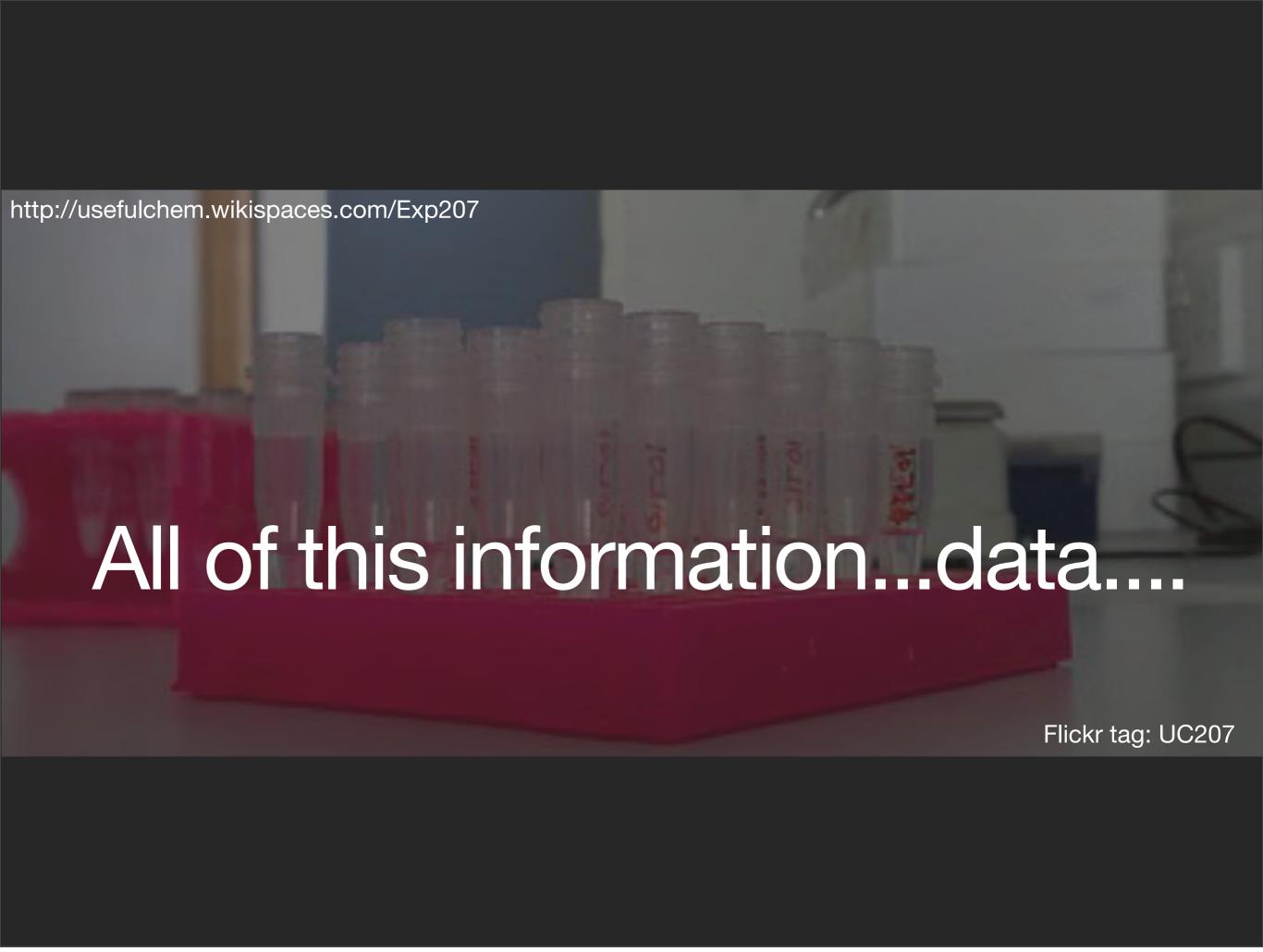


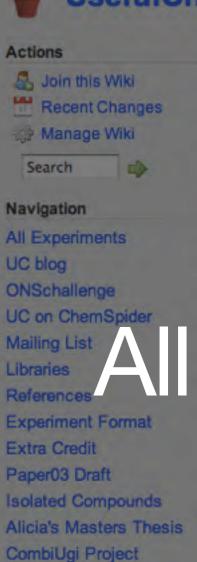
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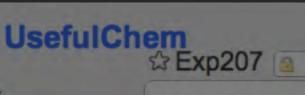












Protected

discussion history notify me

# Objective

To establish a method of measuring the solubility of some compounds in organic solvents. For a justification of this project see here ...

### Procedure

Solid is added to 1.5 mL Eppendorf tubes containing 500 uL of solvent until saturated after 30 s of vortexing. The tubes are then centrifuged for 60 s then 200 uL of clear solution is transferred to pre-weighed 1.5 mL Eppendorf tubes. The tubes with the clear solution are then evaporated down in a SpeedVac for 2 h and re-weighed to obtain the amount of dissolved solid.

# f con to not a serie for the first on attaining the form of the fo

# Discussion

This technique was adequate to measure solubilities of the following compounds: boc-glycine in methanol (4.40 M) and THF (3.45 M)

glycine methyl ester in methanol (1.32 M)

vanillin in methanol (4.19 M) ethanol (2.50 M) THF (3.89 M)

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# Reflections on research data management: RDM is on the up and up but data driven policy development seems a long way off.

11 NOVEMBER 2011

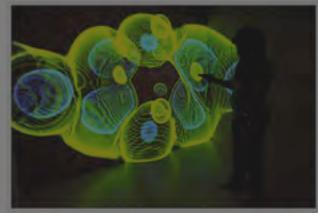


Image by Idaho National Laboratory via Flickr

I wrote this post for the Digital Curation Centre blog following the Research Data Management Forum meeting run in Warwick a few weeks back. If you feel moved to comment I'd ask you to do it over there.

The Research Data Management movement is moving on apace. Tools are working and adoption is growing. Policy development is starting to back up the use of those tools and there are some big ambitious goals set out for the next few years. But has the RDM movement taken the vision of data

# Intensive research to its heart? Does the collection, sharing, an Ally is date of first that is said instituted in South Institut My FriendFeed pr

Watching the discussion on research data management over the past few years has been an exciting experience. The tools, that have been possible for some years, now show real promise as the somewhat raw and ready products of initial development are used and tested.

Practice is gradually changing, if unevenly across different disciplines, but there is a growing awareness of data and that it might be considered important. And all of this is being driven increasingly by the development of policies on data availability, data management, and data archiving that stress the importance of data as a core output of public research.

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Science in the Open. Published from the United Kingdom.

### Recent Friendfeed activity



"Skitchrolling" - When an apparently interesting link leads you to Scholarly Kitchen..



Yikes. Weather for Tromsø for next five days...might make it above zero...will be needing to pack warm...



Re-use as Impact: Linking the open and impact agendas Re-use as Impact: Linking the open and impact agendas



BMJ Group blogs: BMJ » Blog Archive » Richard Smith: A woeful tale of the uselessness of peer review



### Lifestream

Yikes. Weather for Tromsø for next five days...might make it above zero...will be needing to pack

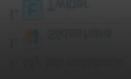
[cameronneylon] - 2d ago vis Twitter

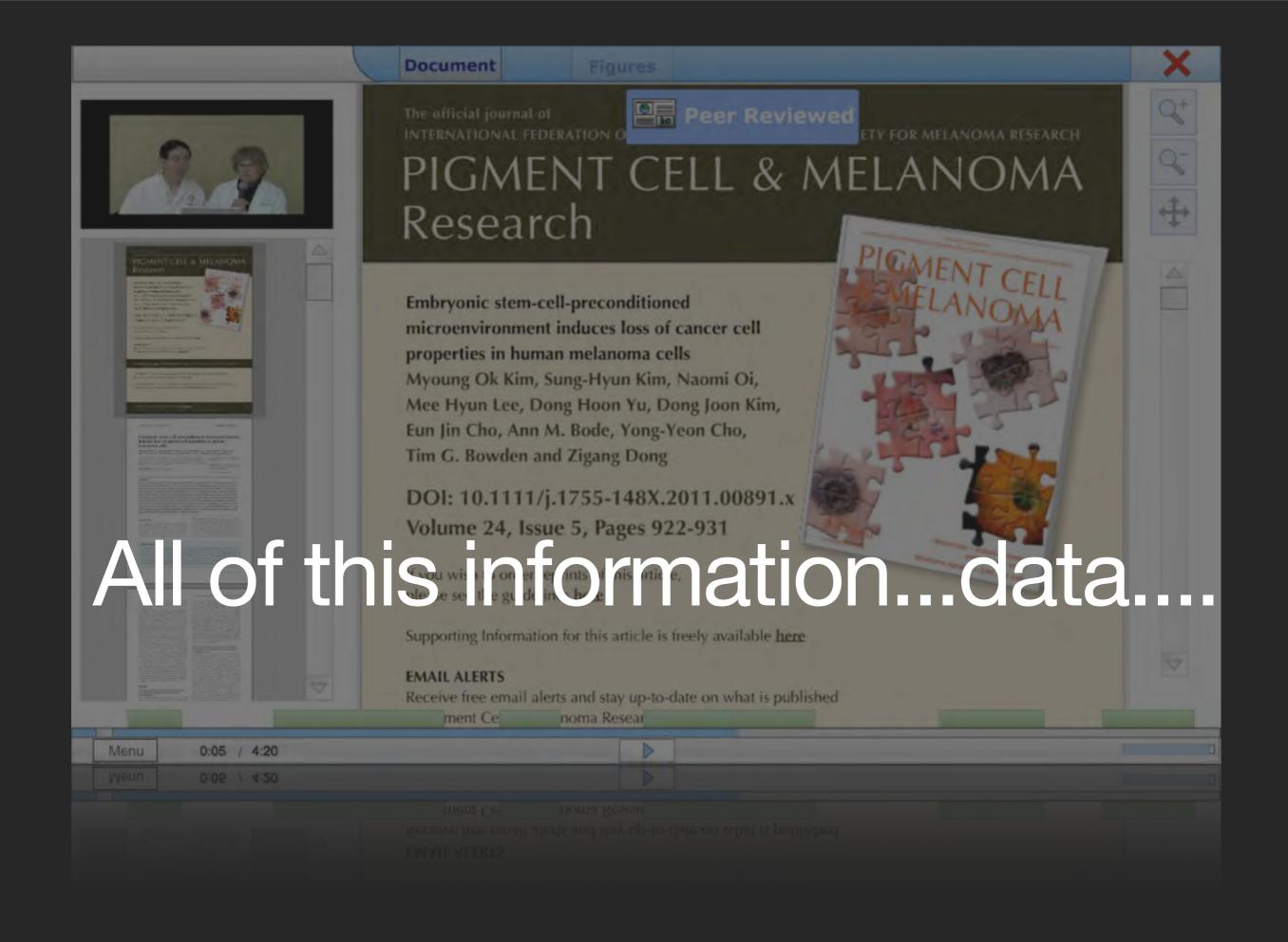


Ok. A second attempt at











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Article Discussion

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Q

# Tus (biology)

From Wikipedia, the free encyclopedia

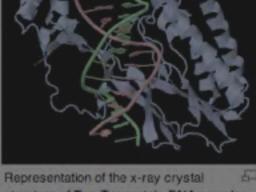
(Redirected from Tus protein)

Tus is a sequence-specific DNA-binding protein that promotes termination in the DNA replication process of prokaryotes. In *E Coli*, Tus binds to 10 closely related sites encoded in the chromosome. These sites bind 23 base-pairs. The 10 sites are called *Ter* sites, and are designated *TerA*, *TerB*, ..., *TerJ*. These binding sites are asymmetric, such that when a Tus-Ter complex (Tus protein bound to a Ter site) is encountered by a replication fork from one direction, the complex is dissociated and replication continues (permissive). But when encountered from the other direction, the Tus-Ter complex provides a much larger kinetic barrier and halts replication (non-permissive). The multiple *Ter* sites in the chromosome are oriented such that the two oppositely moving replication forks are both stalled in the desired termination region. [2]

# Further reading

[edit]

- "Interaction of the Escherichia coli replication terminator protein (Tus) with DNA: a model derived from DNA-binding studies of mutant proteins by surface plasmon resonance." [3]
- "Replication termination in Escherichia coli: structure and antihelicase activity of the Tus-Ter



Representation of the x-ray crystal structure of Tus-Ter protein-DNA complex.

(Jmol rendering of coordinates from [1]. The DNA strands are shown in pink and green.)

the state of the s

- "Biophysical characteristics of Tus, the replication arrest protein of Escherichia coli."<sup>[6]</sup>
- "Structure of a replication-terminator protein complexed with DNA."[1]
  - Structure at protein data bank @

References

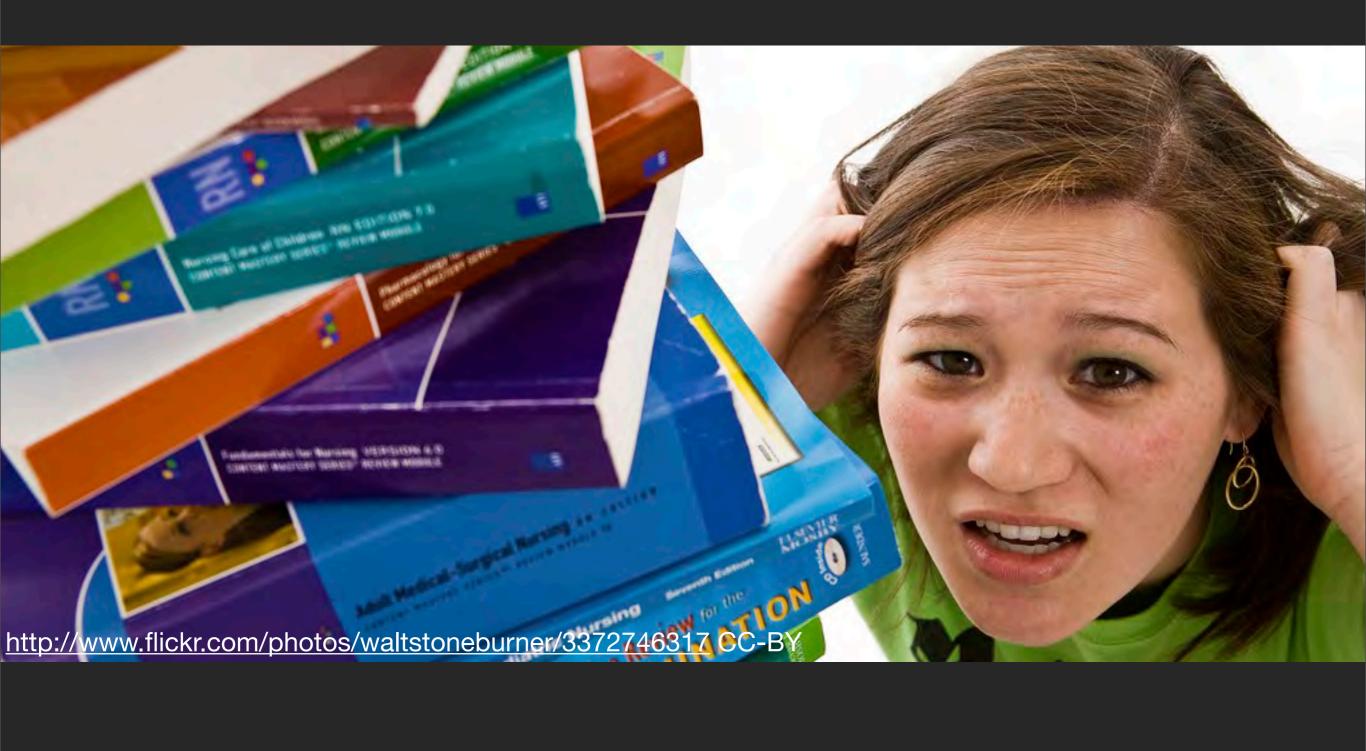
[edit]

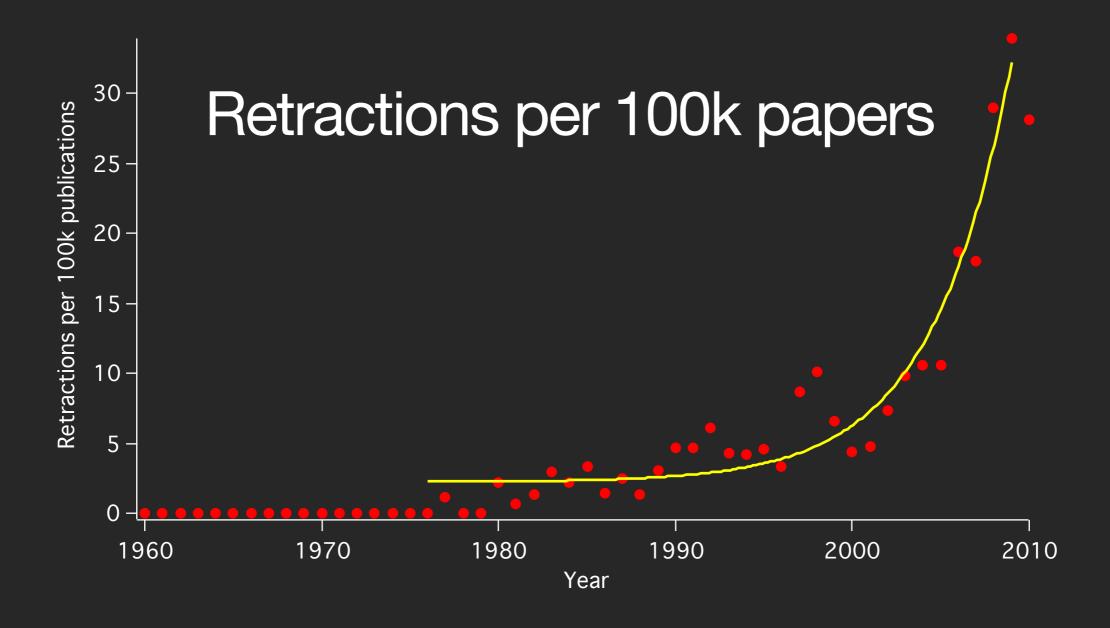
- 1. ^ a b Kamada, K.; Horiuchi, T.; Ohsumi, K.; Shimamoto, N.; Morikawa, K. (1996). "Structure of a replication-terminator protein complexed with DNA". Nature 383 (6601): 598–603. Bibcode 1996Natur.383..598K & doi:10.1038/383598a0 & PMID 8857533 & edit
- DNA". Nature 383 (6601): 598-603. Bibcode 1996Natur.383..598K @. doi:10.1038/383598a0 @. PMID 8857533 @. ed.
- 1. A @ b Kamada, K.: Horluchi, T.: Ohsumi, K.: Shimamoto, N.: Morikawa, K. (1996), "Structure of a replication-terminator protein complexed with

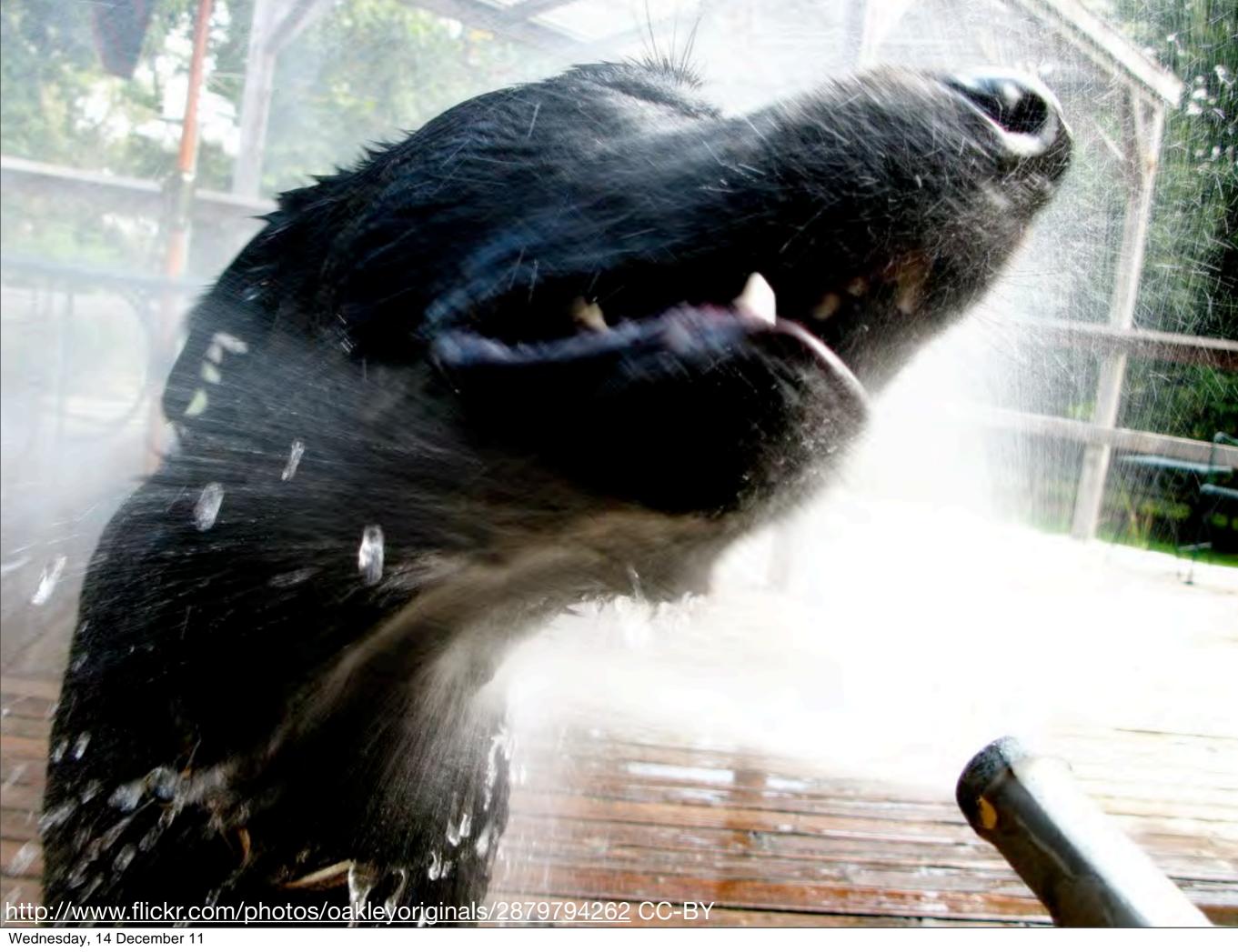
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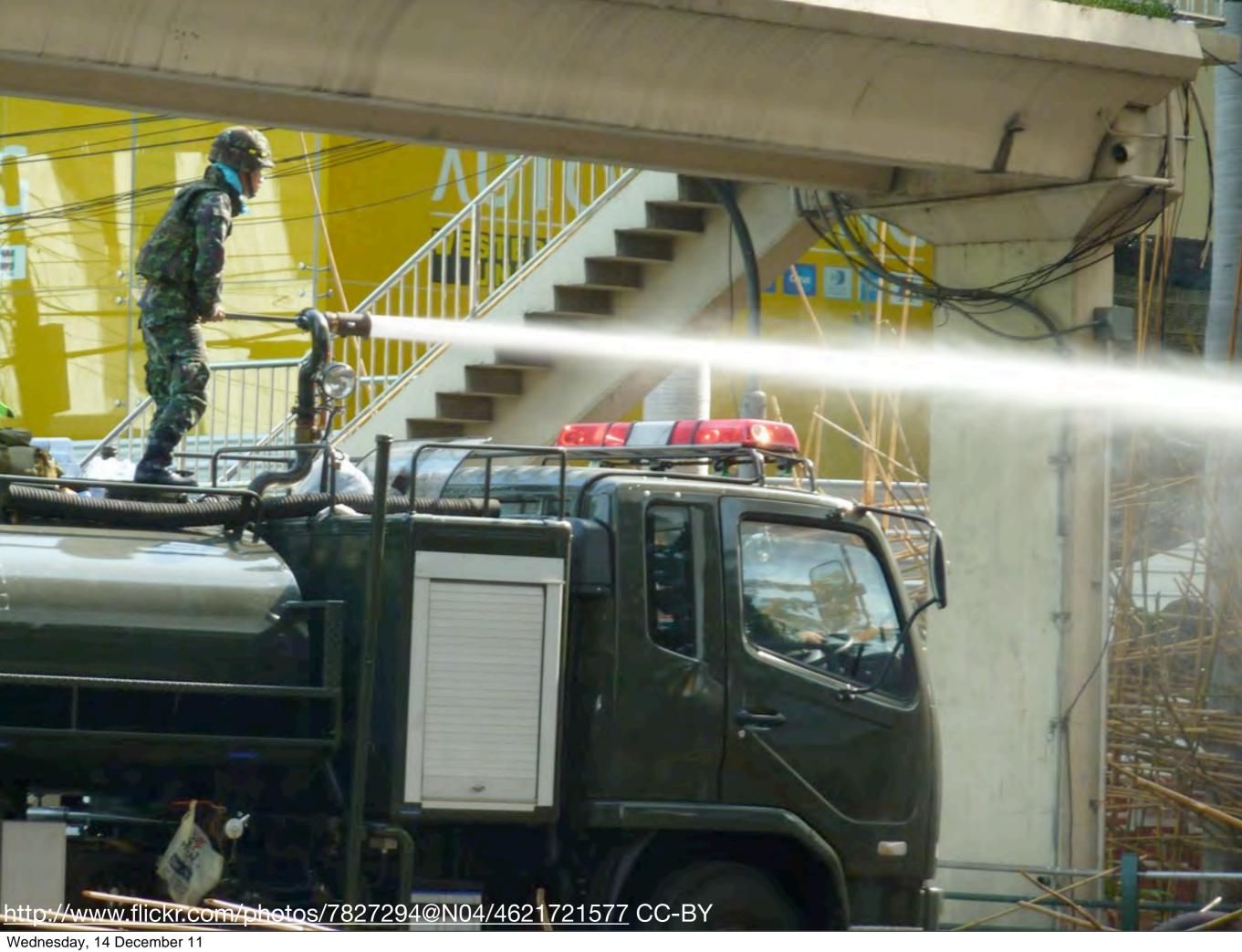
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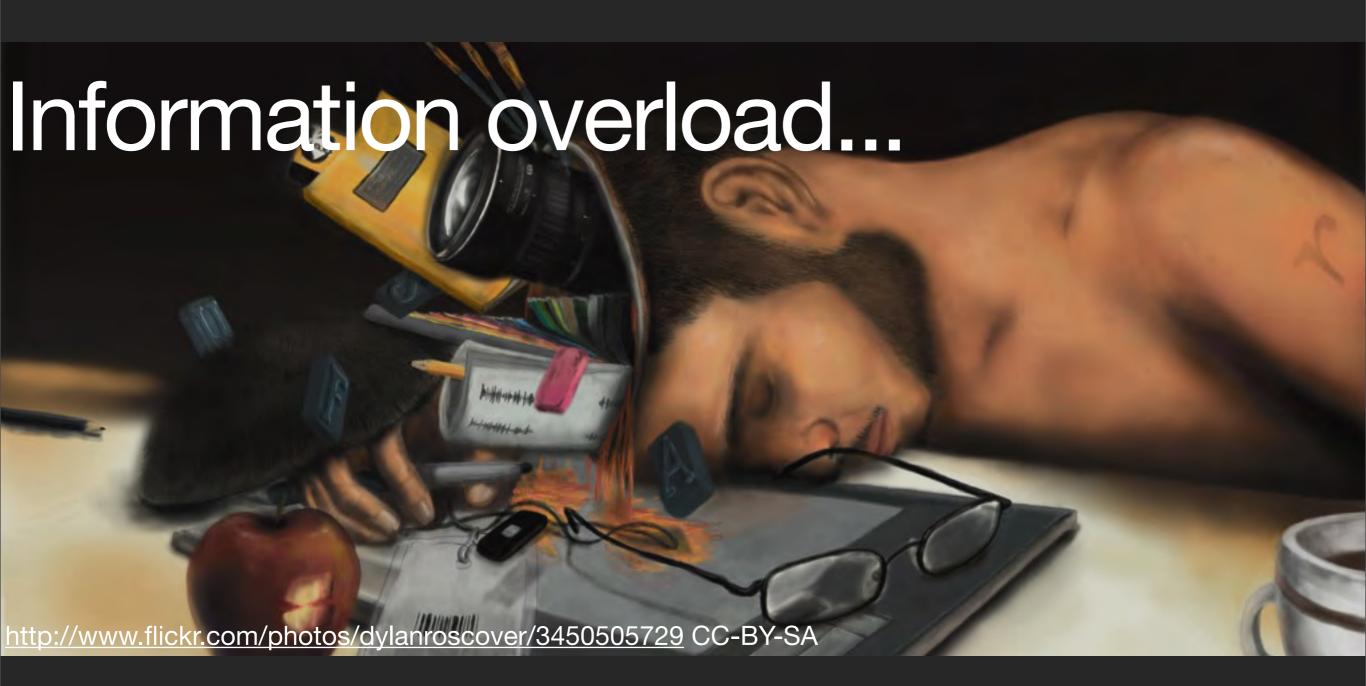










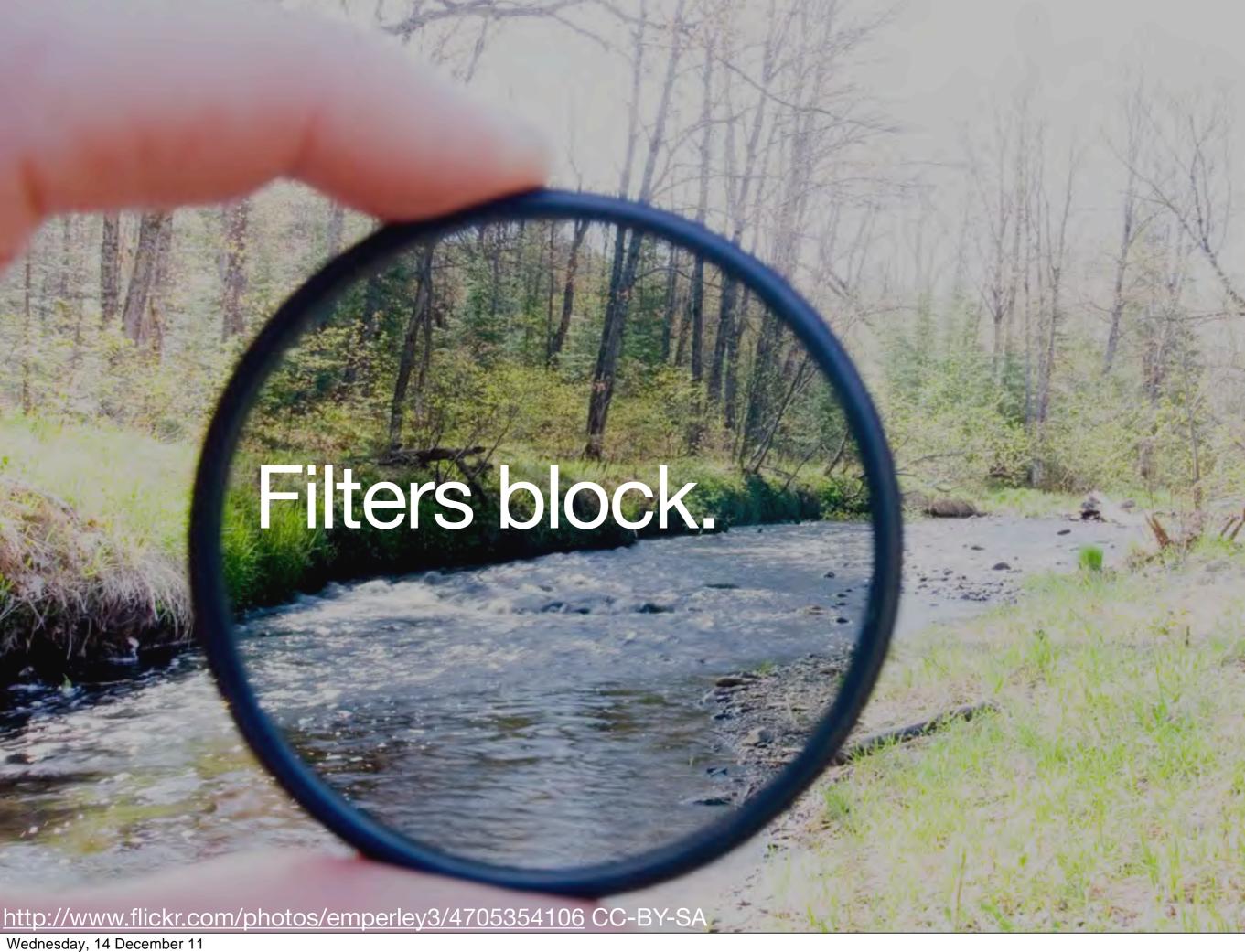


"I need to read less"



Filter failure?





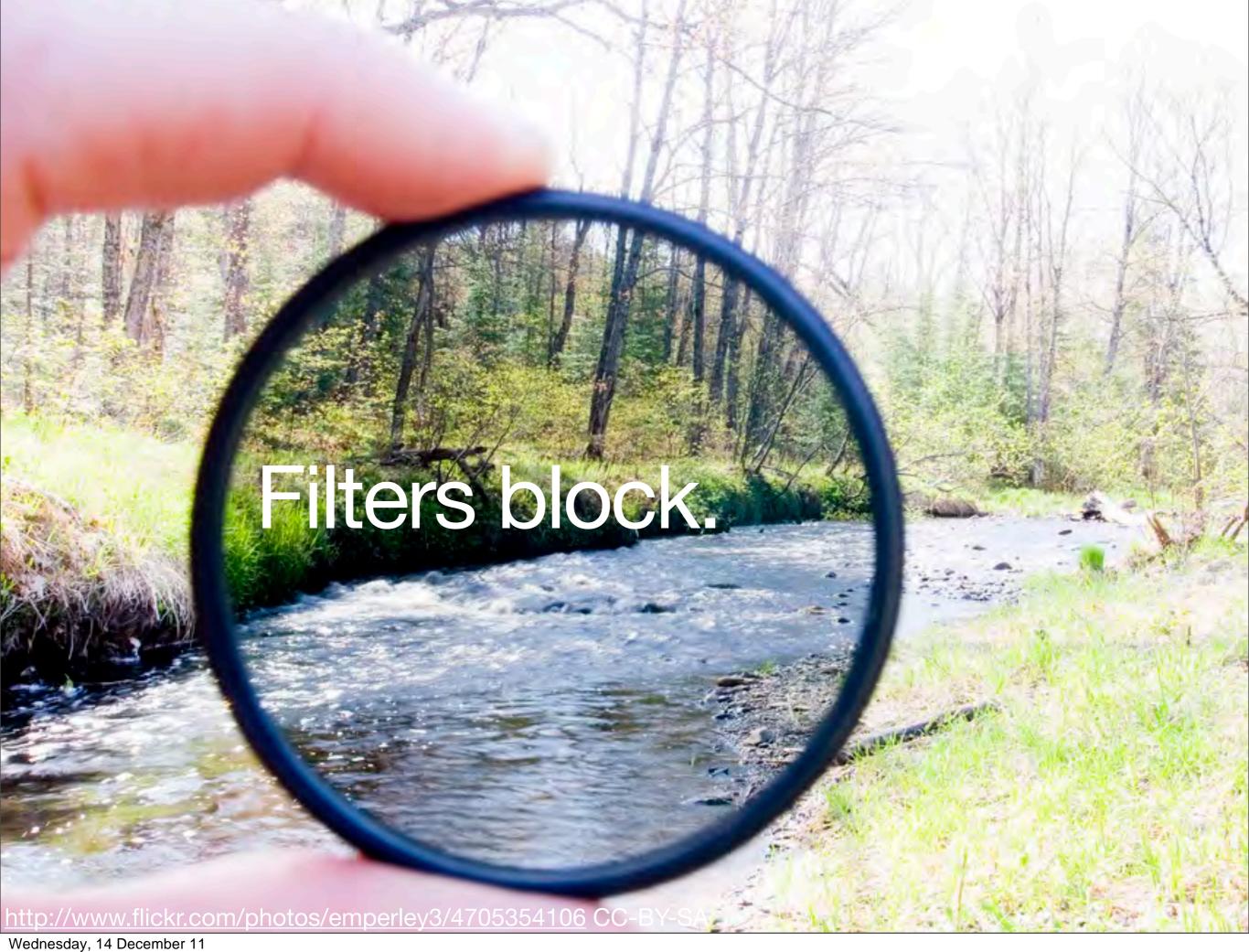








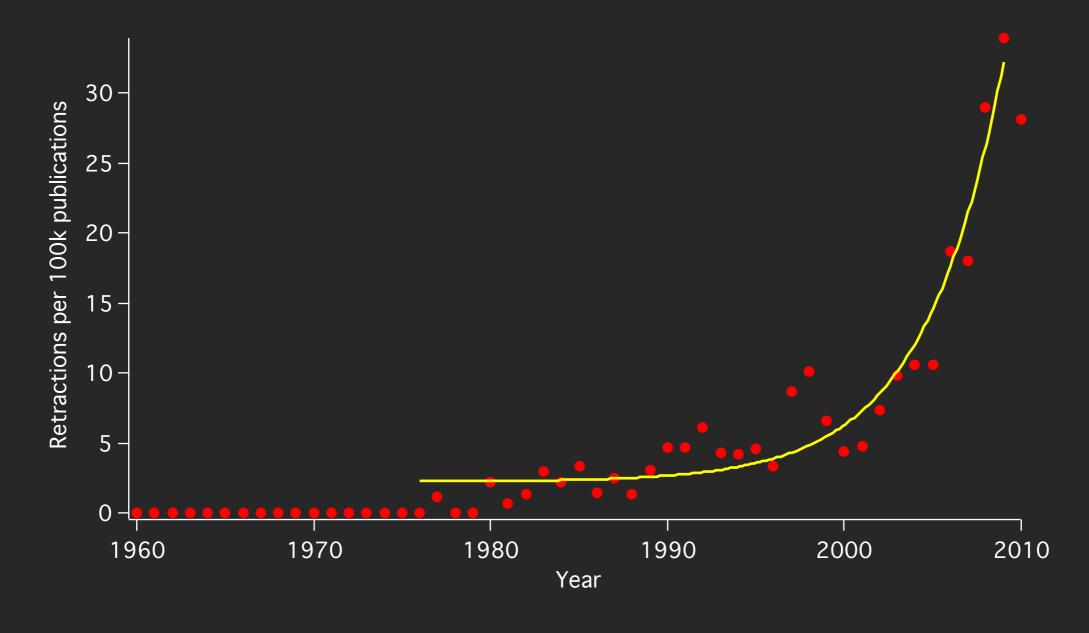




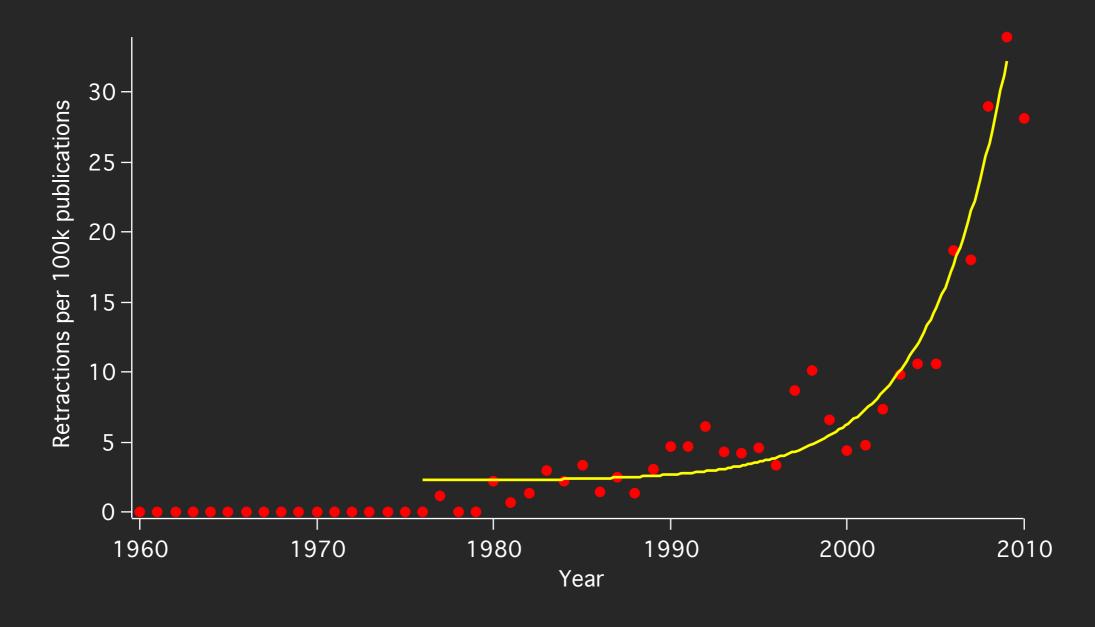




# Remember this graph?

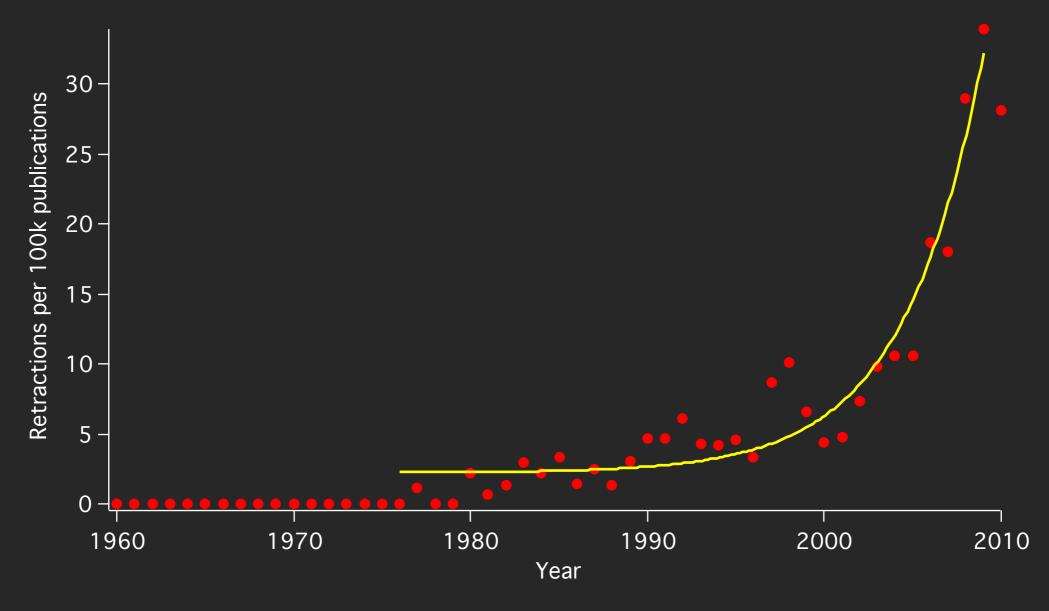


# Remember this graph?



# Where is the data from?

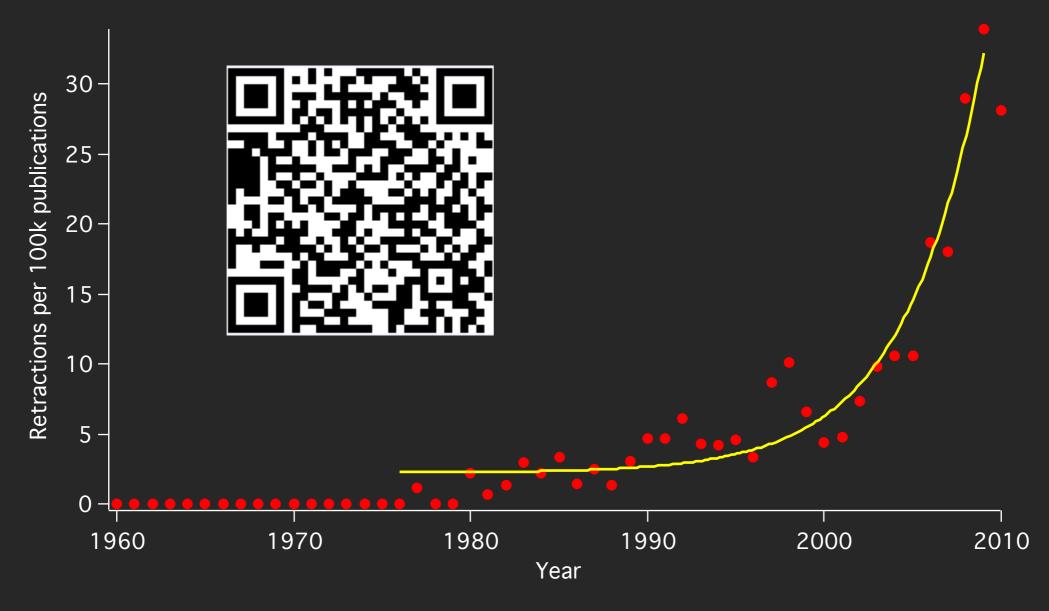
# Remember this graph?



https://github.com/neilfws/PubMed/blob/master/data/retractions.txt

# Where is the data from?

# Remember this graph?



https://github.com/neilfws/PubMed/blob/master/data/retractions.txt

### Where is the data from?

### But how did I discover it?





So how many retractions are there every year, anyway?

« Retraction Watch -

http://retractionwatch.wordpress.com/2010...

Monday from delicious - Comment - Share

- You, Bill Hooker, Greg Tyrelle and 8 other people liked this (Un-like)
- For PubMed, use the query "Retraction of Publication[Publication Type]". This returns 1621 results. Last year (2009), there were 289, from 852 183 total publications. And here's a quick graph http://twitpic.com/3bazq4 based on this code http://nsaunders.wordpress.com/2010.... Neil Saunders
- Here's a graph of the same, but normalized by # of published papers. http://i.imgur.com/NVkEF.png See this thread:http://friendfeed.com/neilfws... - Chris Miller

http://friendfeed.com/gbilder/711e6278/so-how-many-retractions-are-there-every-year











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http://friendfeed.com/gbilder/711e6278/so-how-many-retractions-are-there-every-year





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# Remember these people?

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John Fabiana Kubke Richard Grant

John Fabiana Kubke Richard Grant

John Neil Saunders Steve Wilson @gnal Branch Hide

Dupuls Simon Philips Pawel Szcsesny Paul Miller Gabriel Cavalli

Jony Hey Genemy Frey Nico Adams Richard Akerman Noel Gorelick

Udell ISIS LSS Group Jeremiah Faith Jean-Claude Bradley Nicholas Cole

Michael Barton John Willinsky Phil Lord Victoria Stodden Martyn Bull

Stephen Friend David Crotty Clay Shirky @t John Cumbers

Bors Chis Leonal Grace Baynes Em Finien Egon Willighagen Mark Borkum

Brian Kelly Tony Williams Dan Hagon Maxine Clarke And Rew Millsted

Brian Kelly Tony Williams Dan Hagon Maxine Clarke And Rew Millsted

Waldrop Greg Wilson Brian Matthews Leigh Dodds Bill Hooker

Glyn Mody Yaroslav Nikolaev Jenny Rohn Rafael Sidi Lee Smolin

Frank Norman Ricardo Vidal Iain Emsley Paulo Num Ariel Waldmann

Timo Hannay Ken Shankland Lorie Le Jeune Jonathan Gray Fishon

Microsoft STFC Deepak Singh Shirley Wu ISIS Computing Group Helen Berman

Andrew Peter Binfield Benjamin Good Dorothea Salo Liz Lyons PLos

Kasarskis Jen Dodd Lee Dirks Peter Murray-Rust Richard Akermany

Carole Goble Jon Hison Jenny Mile Lakshmi Shastry Steve Koch NPG Ben Goldacre

Chad Orzel Bill Flanagan Jon Tansey Michael Eisen Matt Wood

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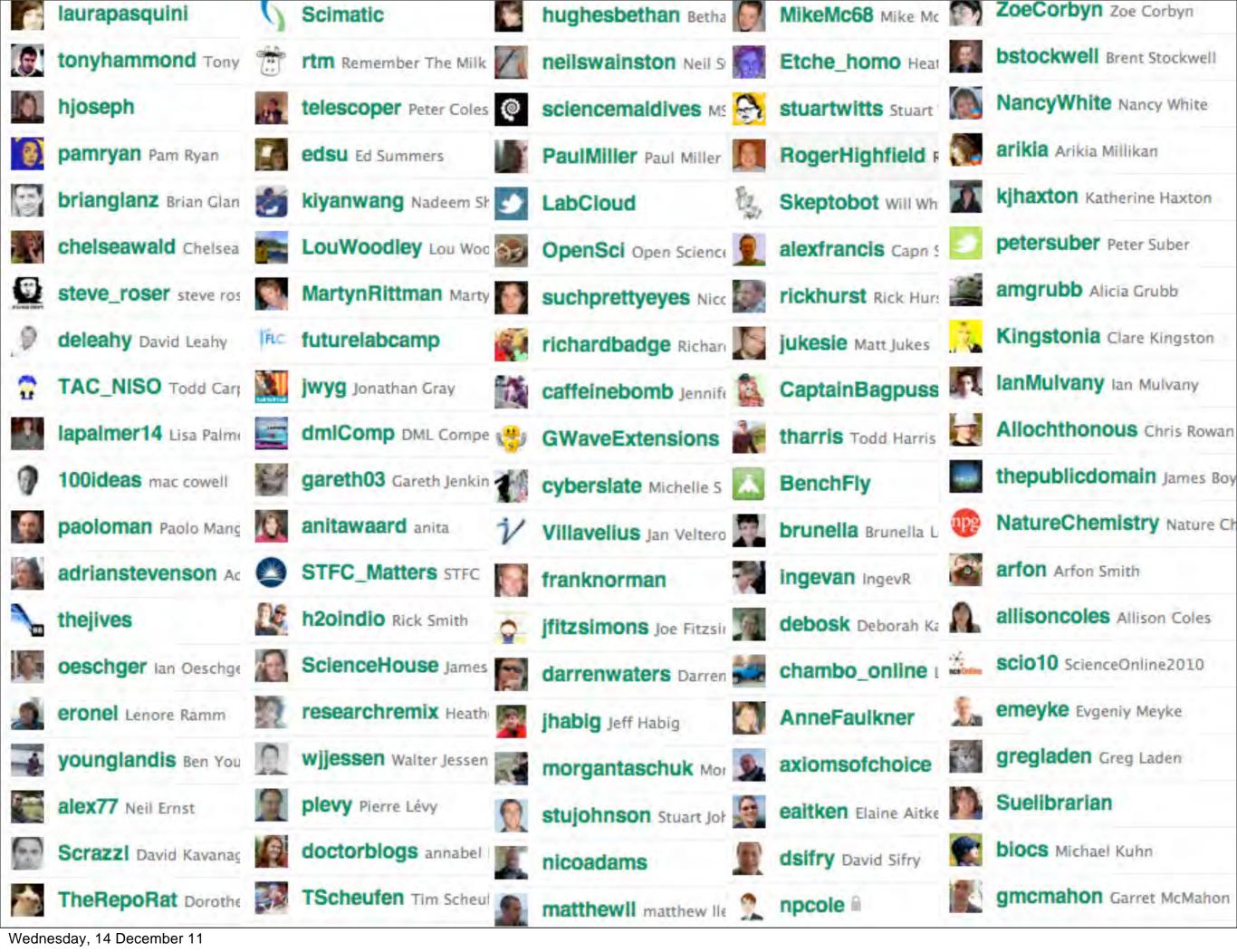
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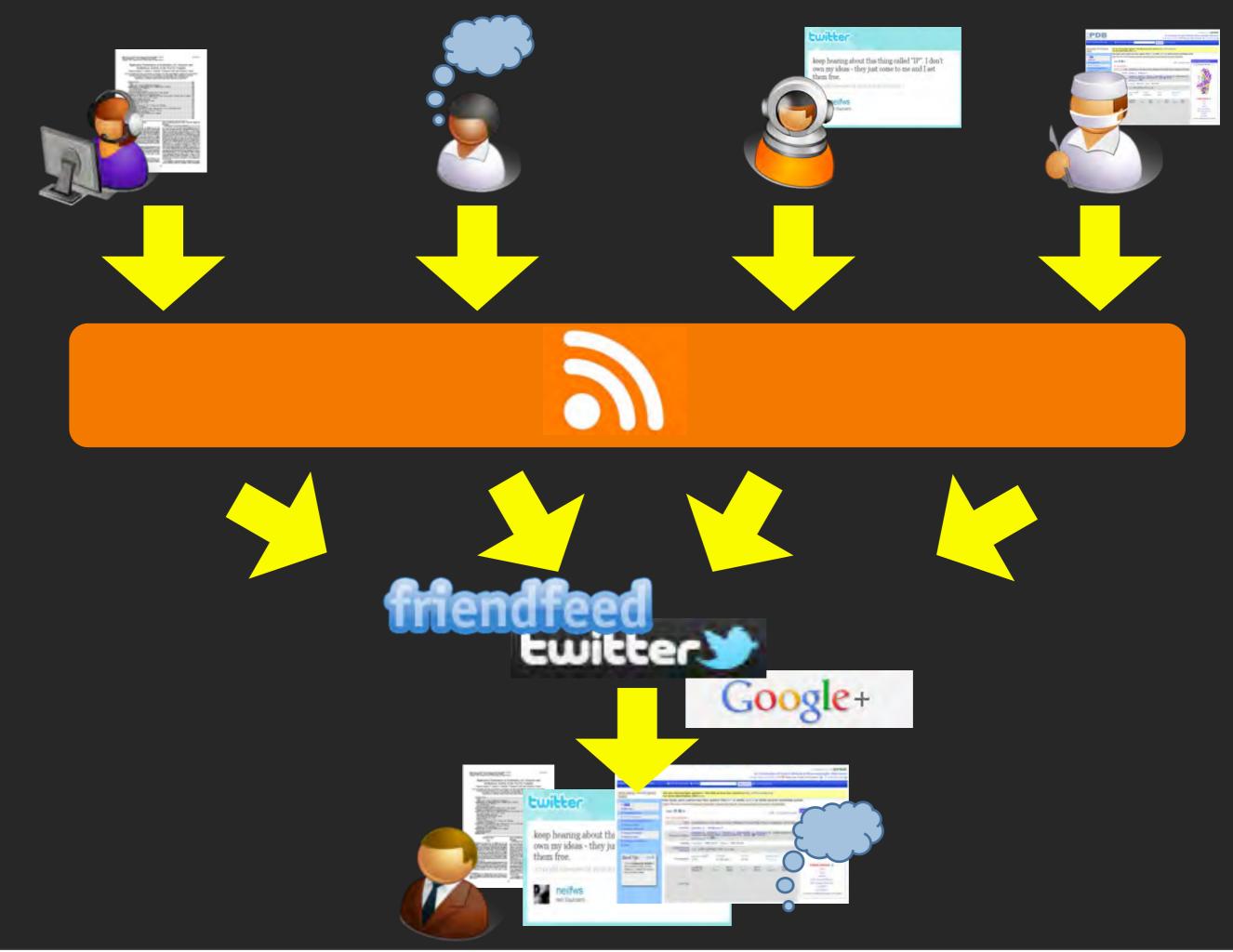
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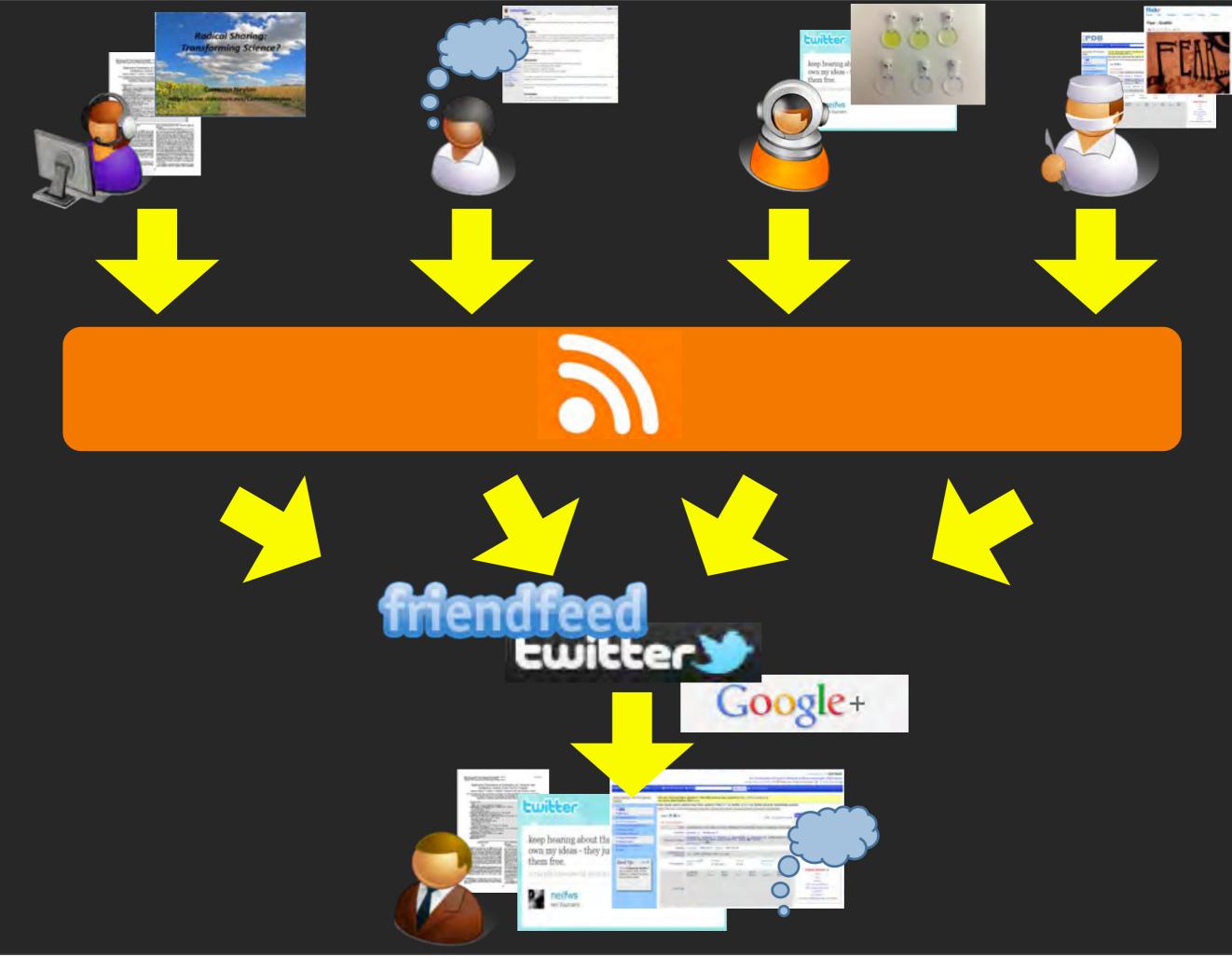
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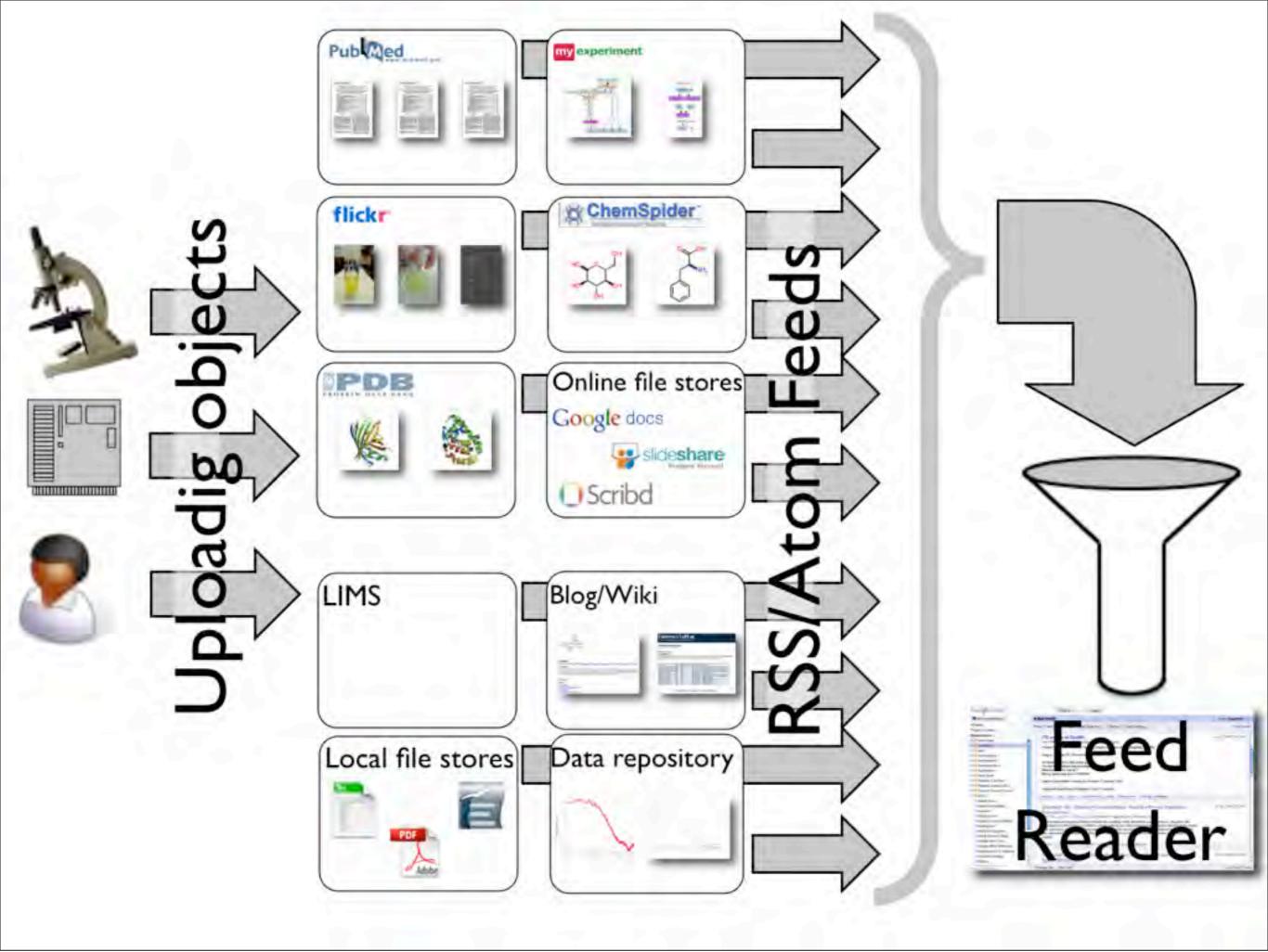
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# Social aggregation...

...but also...





So how many retractions are there every year, anyway?

« Retraction Watch -

http://retractionwatch.wordpress.com/2010...

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## Social annotation



...but also...

## What You're Doing Is Rather Desperate

#### Analysis of retractions in PubMed

As so often happens these days, a brief post at FriendFeed got me thinking about data analysis. Entitled "So how many retractions are there every year, anyway?", the post links to this article at Retraction Watch. It discusses ways to estimate the number of retractions and in particular, a recent article in the Journal of Medical Ethics (subscription only, sorry) which addresses the issue.

As Christina pointed out in a comment at Retraction Watch, there are thousands of scientific journals of which PubMed indexes only a fraction. However, PubMed is relatively easy to analyse using a little Ruby and R. So, here we go...

Code and raw data used for this post are available at Github.

#### 1. Searching for retractions

In the Journal of Medical Ethics article, the authors state: "Every research paper noted as retracted in the PubMed database from 2000 to 2010 was evaluated. PubMed was searched on 22 January 2010 with the limits of 'items with abstracts, retracted publication, English.' A total of 788 retracted papers were identified..."

Not a bad approach. There's another way: at the PubMed website, find a retraction and examine the record in XML format. You'll see this:

<PublicationTypeList> <PublicationType>Retraction of Publication</PublicationType> </PublicationTypeList>

http://nsaunders.wordpress.com/2010/11/30/analysis-of-retractions-in-pubmed/

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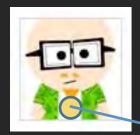
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<PublicationTypeList>

<PublicationType>Retraction of Publication</PublicationType>

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http://nsaunders.wordpress.com/2010/11/30/analysis-of-retractions-in-pubmed/



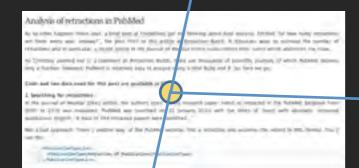




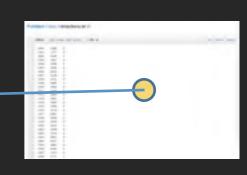


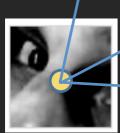


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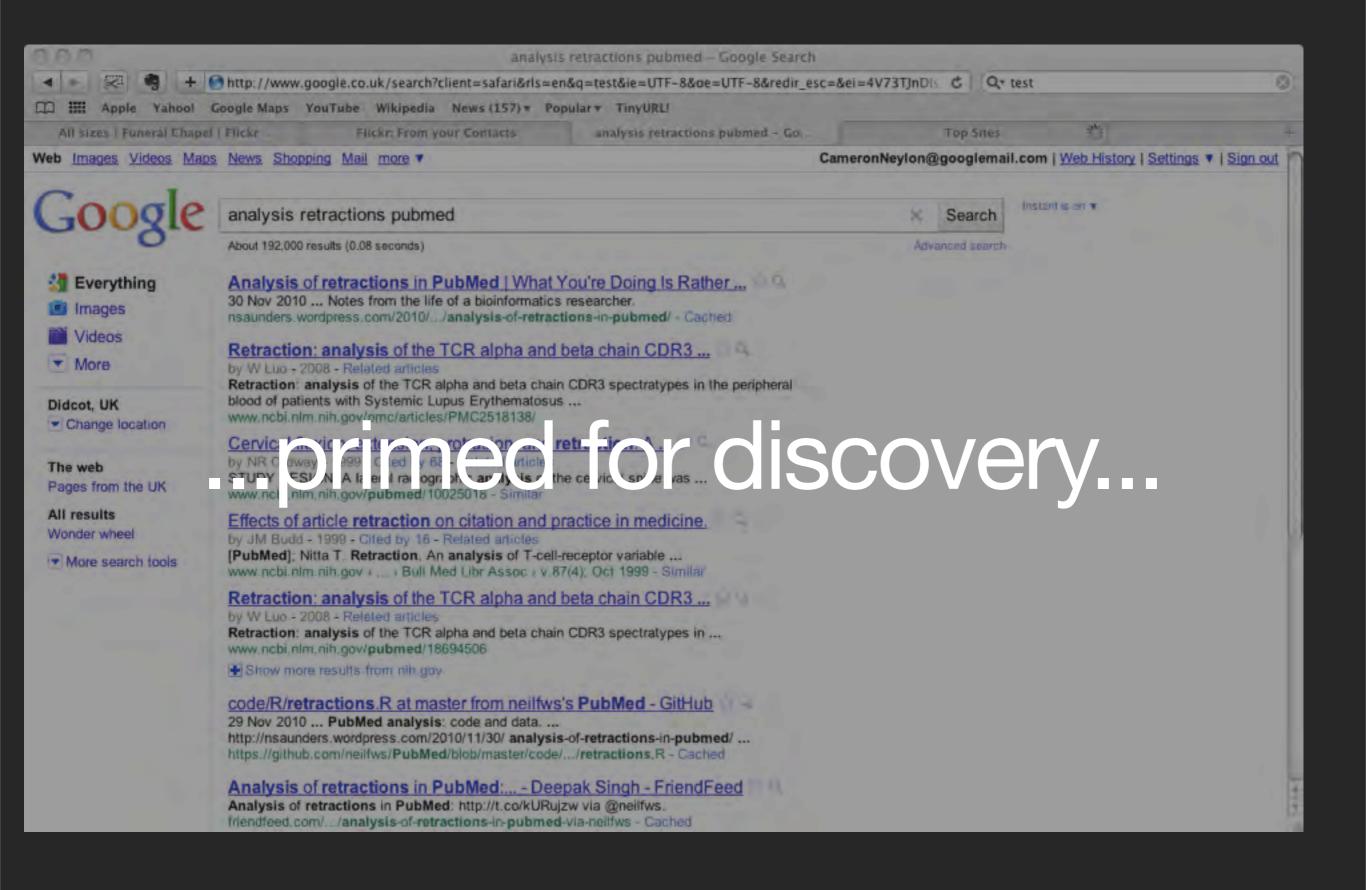




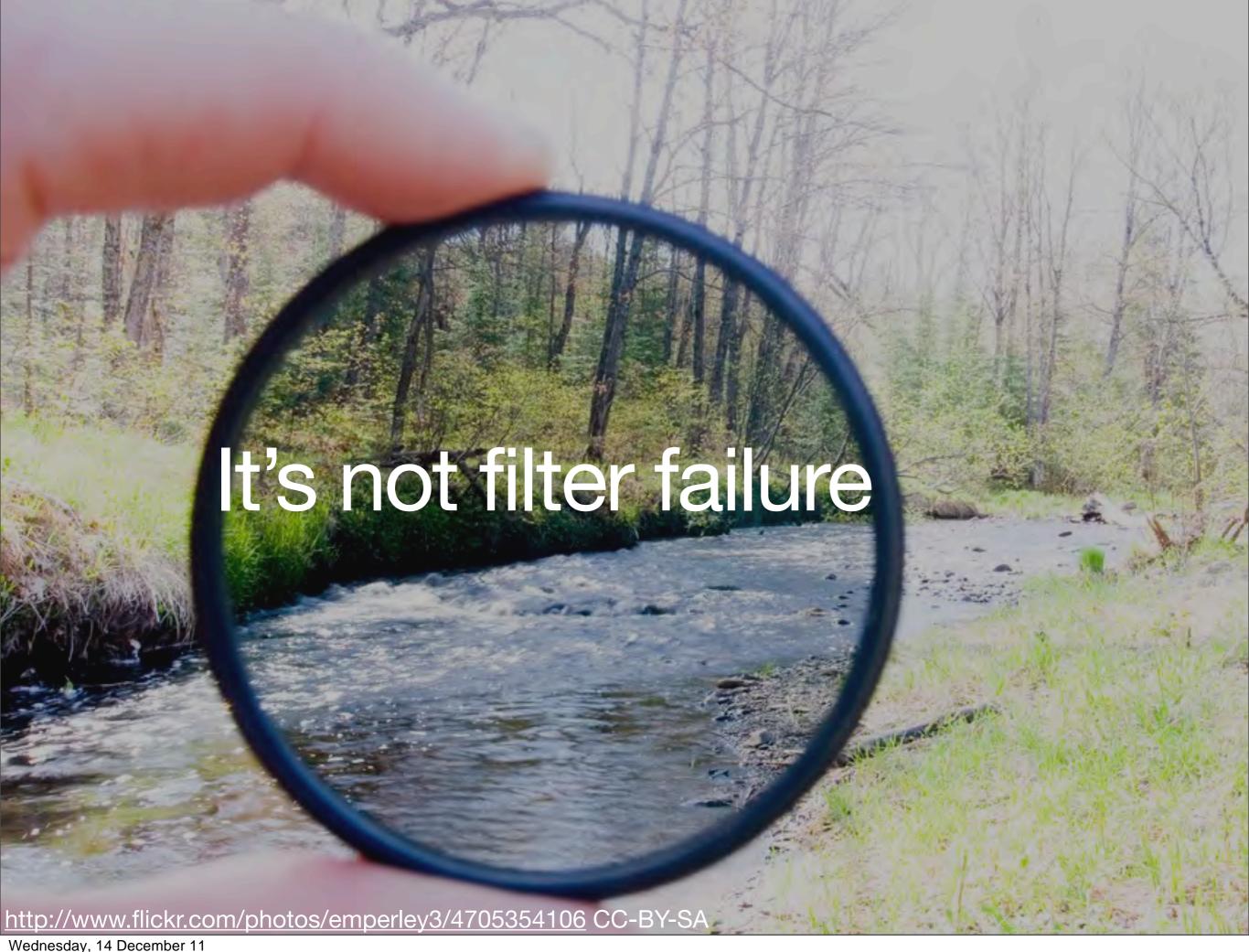


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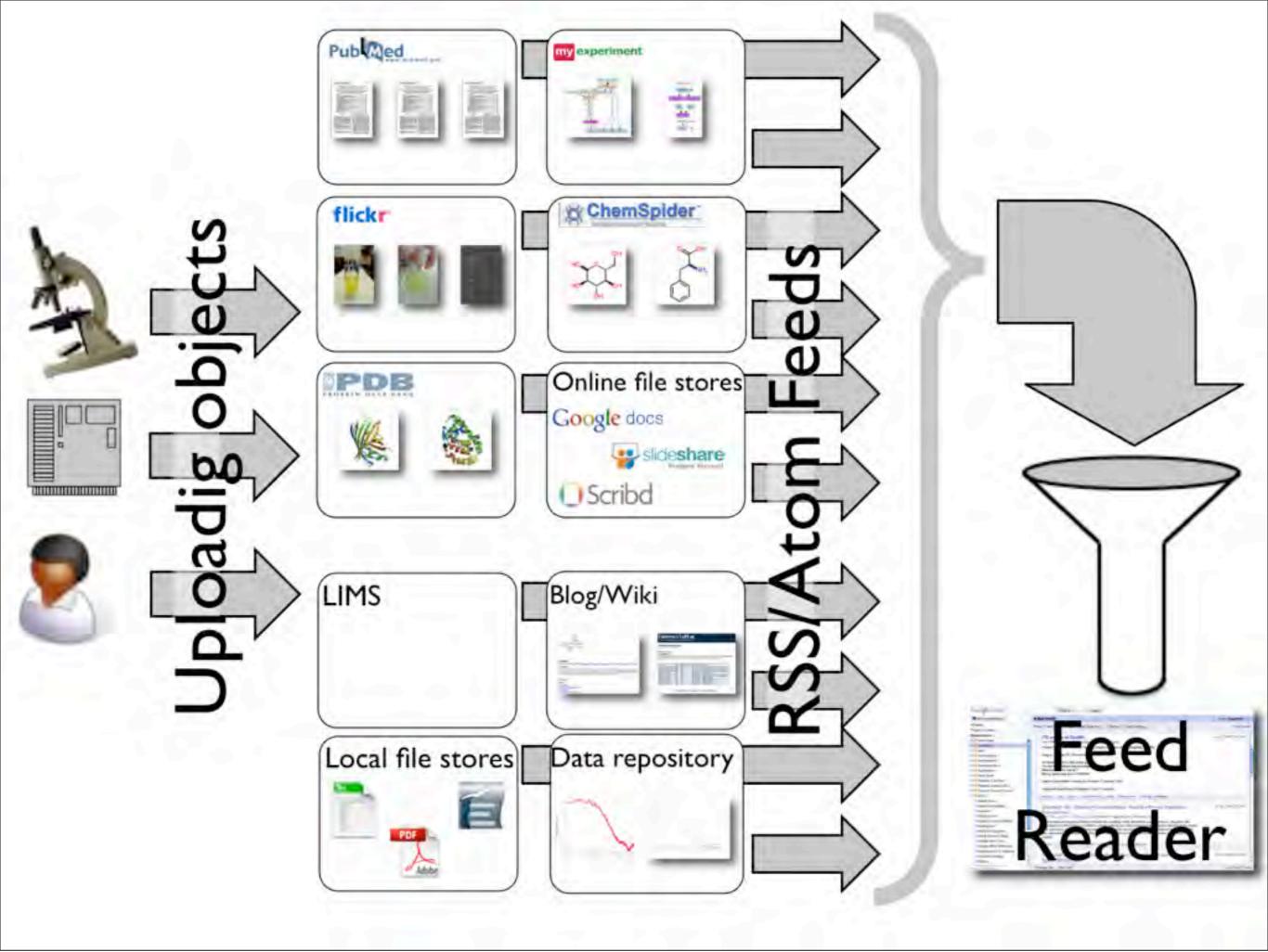
# ...in the past 24 hours?

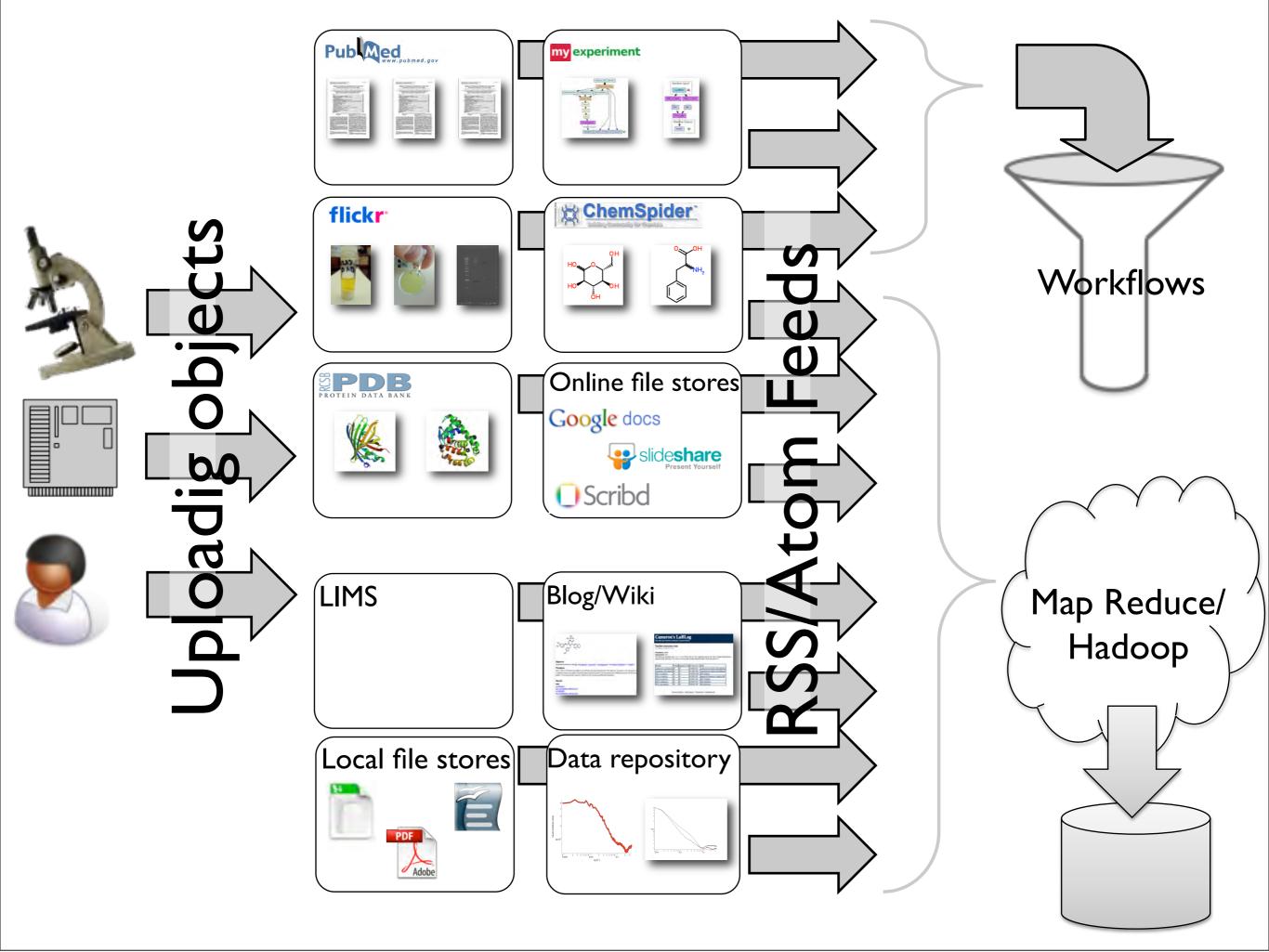


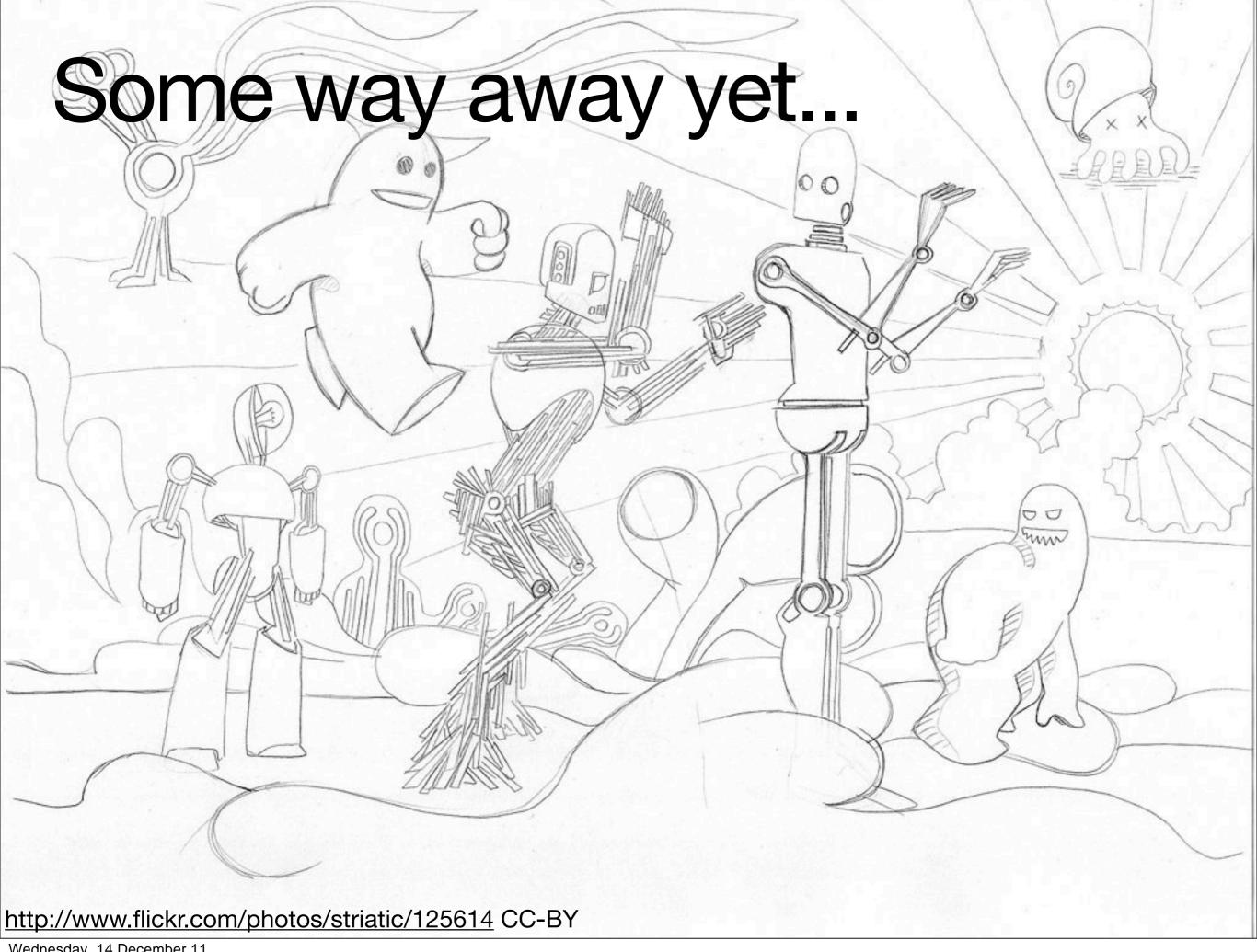
















# Publication Aggregation Discovery

# Publication Aggregation Discovery

## Publication Aggregation Discovery

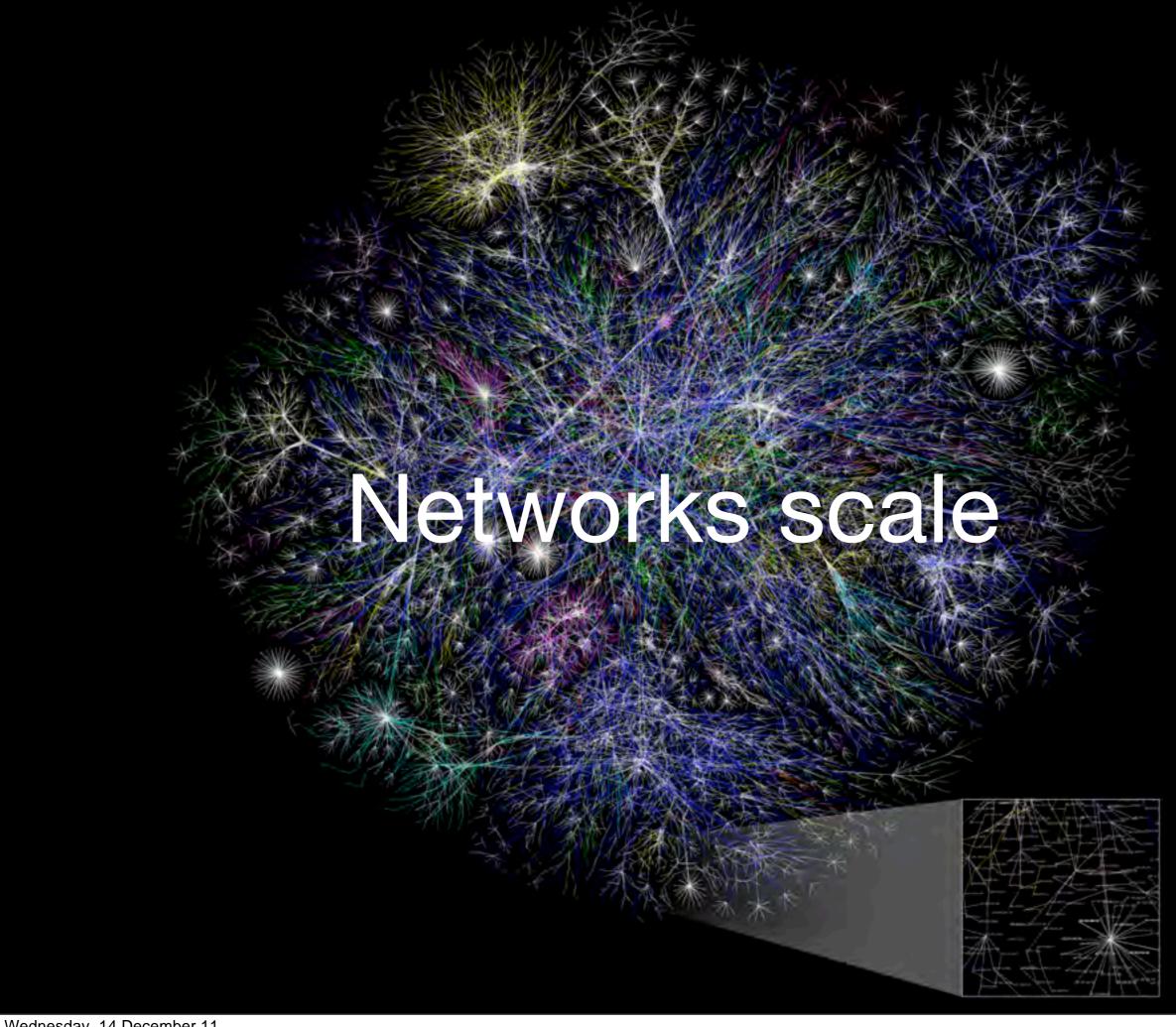
Aggregation
Discovery











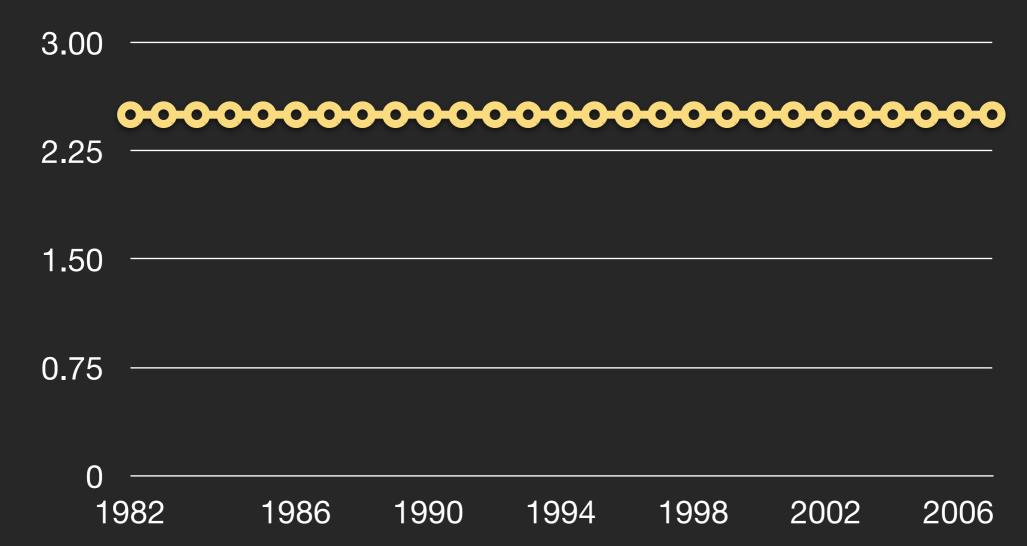
#### Average Capacity of Human Researcher

0.75

0.50

0.25

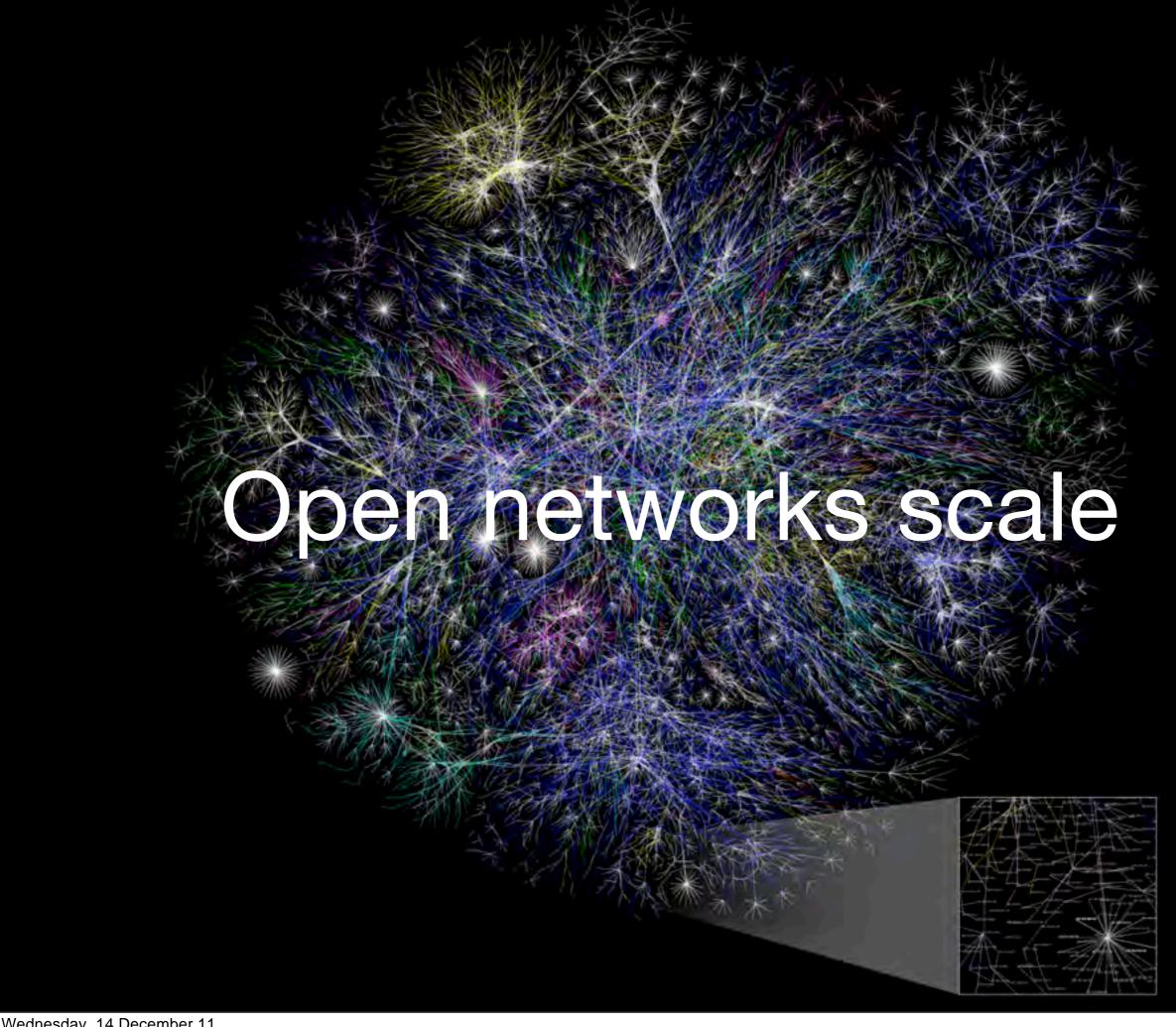
#### Average Capacity of Norwegian Researcher

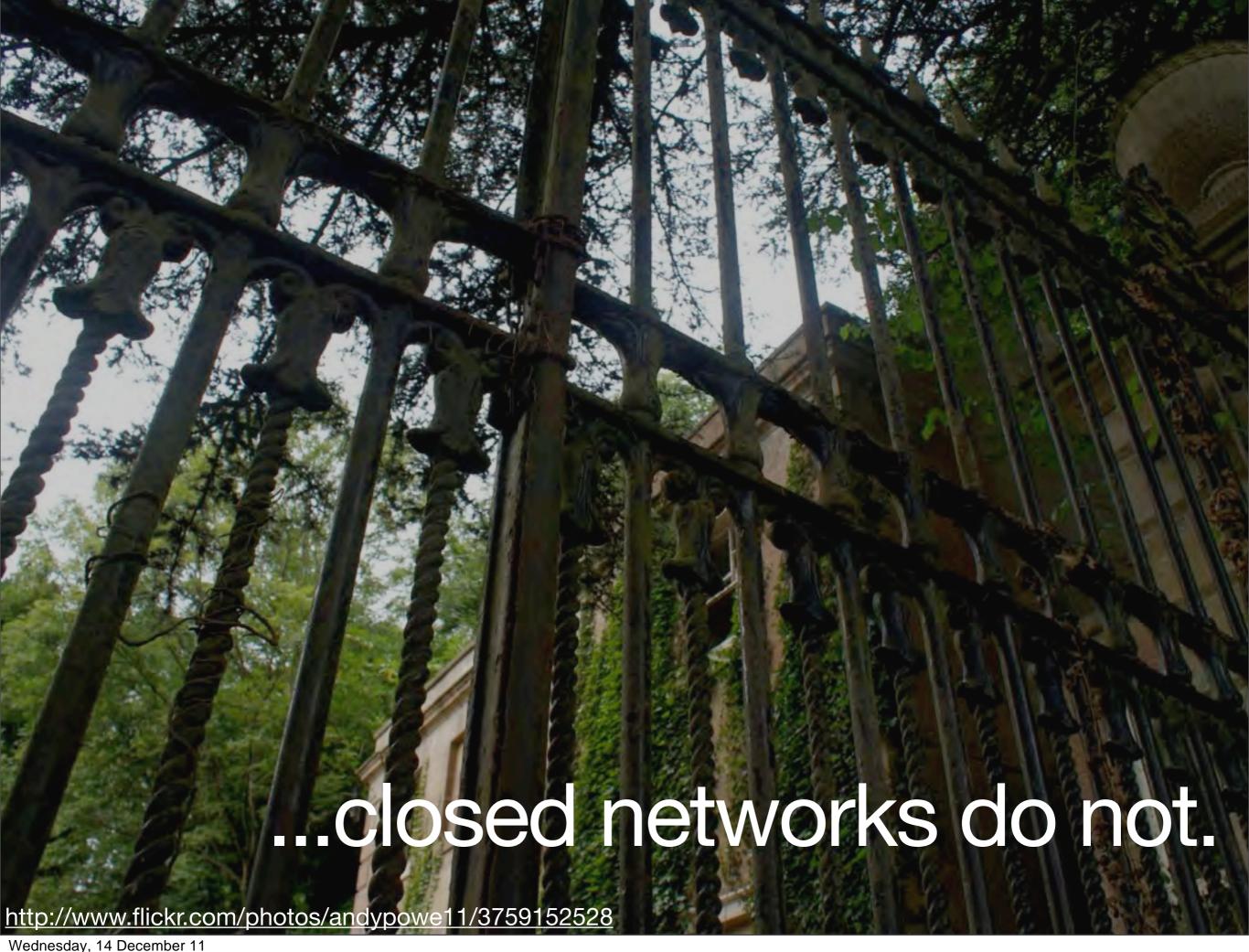


### People don't scale...



### ...at least not on their own





We need...







...but also...













### Because every time a permanent job is advertised...



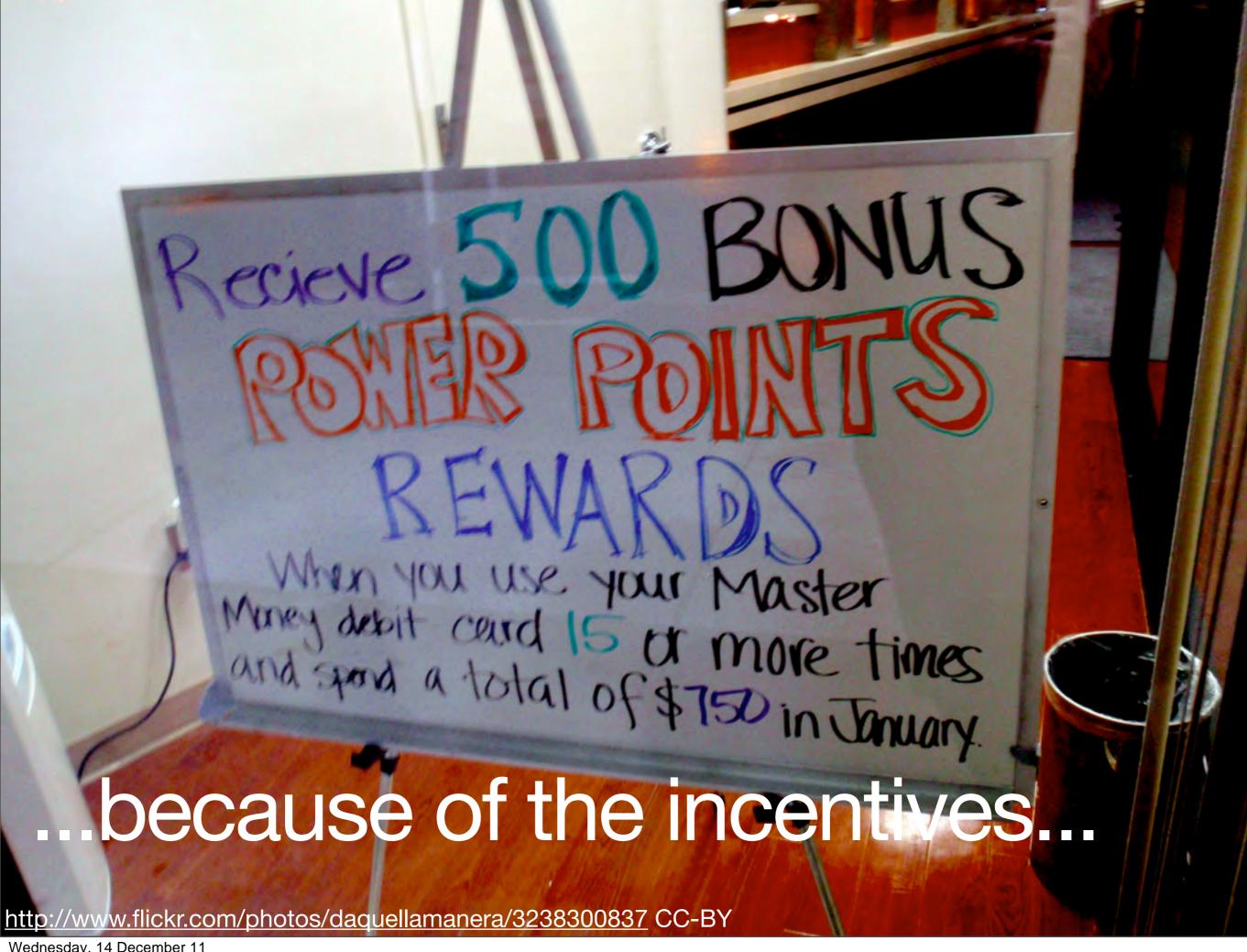




Rather than for use and re-use...



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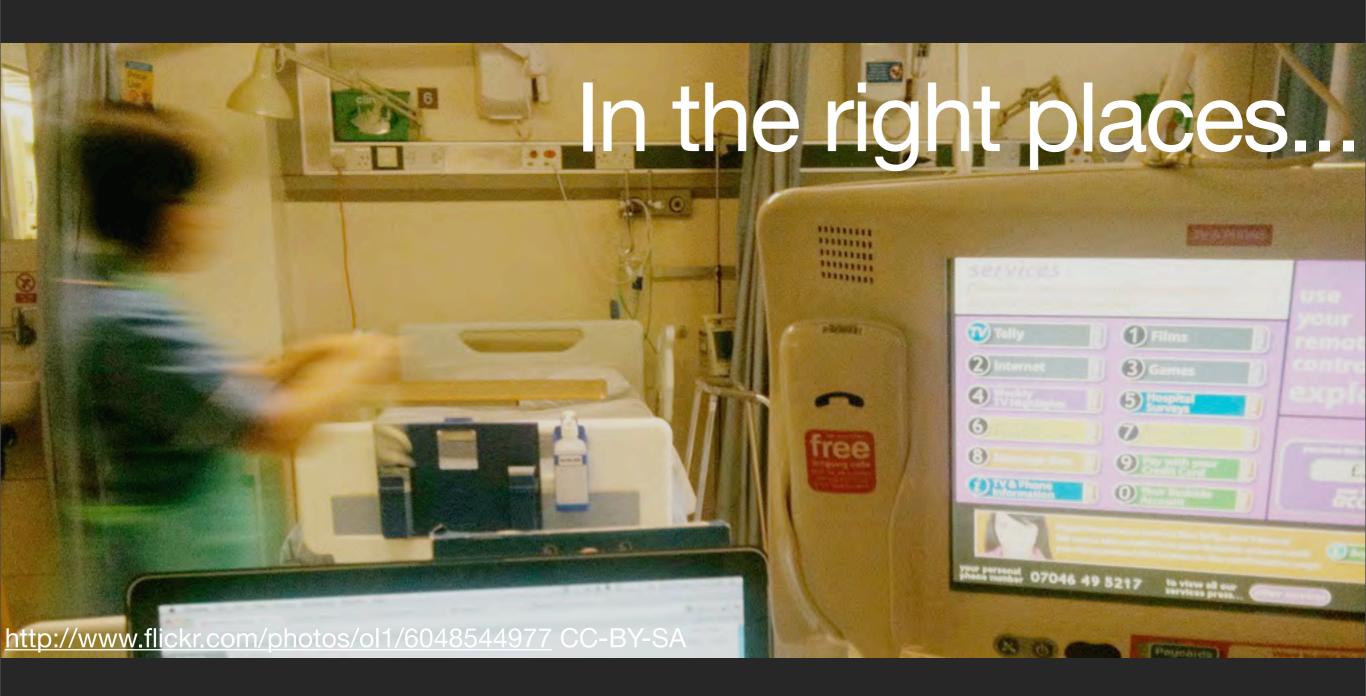




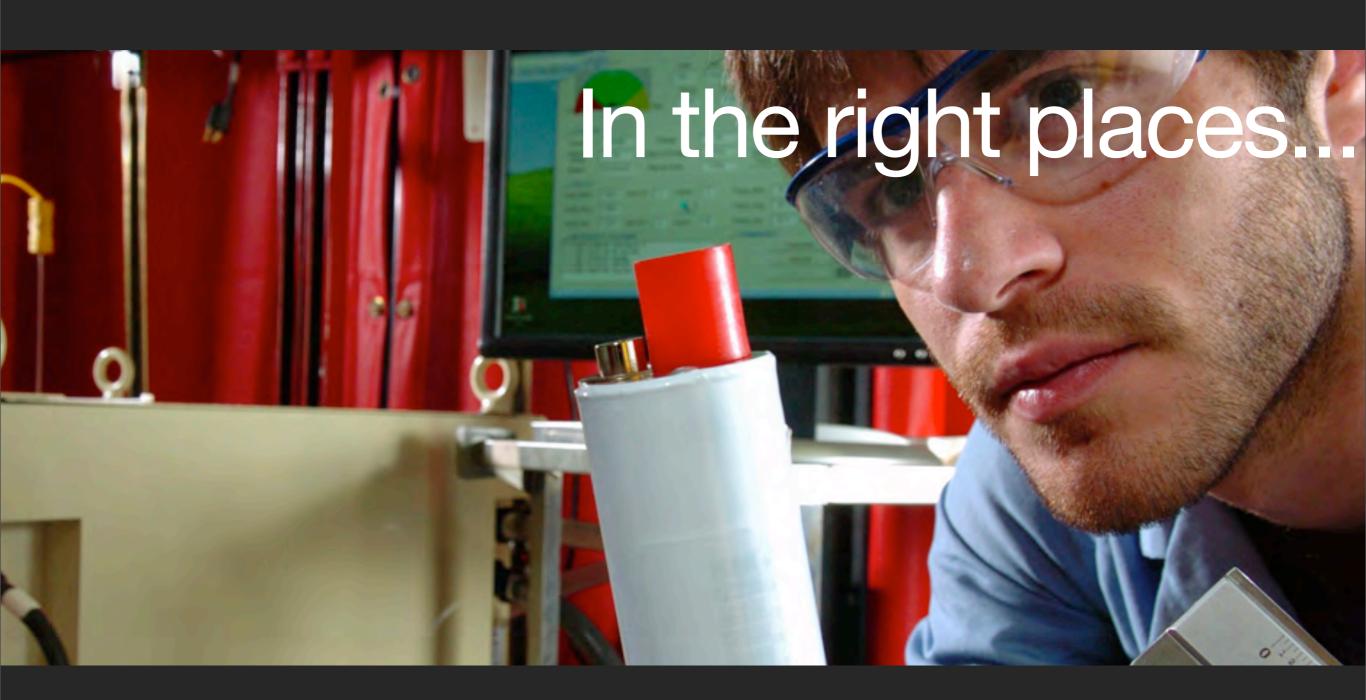


An assertion.

We want to see research used.







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# We want research to be re-used and re-usable



Impact = Re-use

Application = Re-use

### Commercialised = Re-use

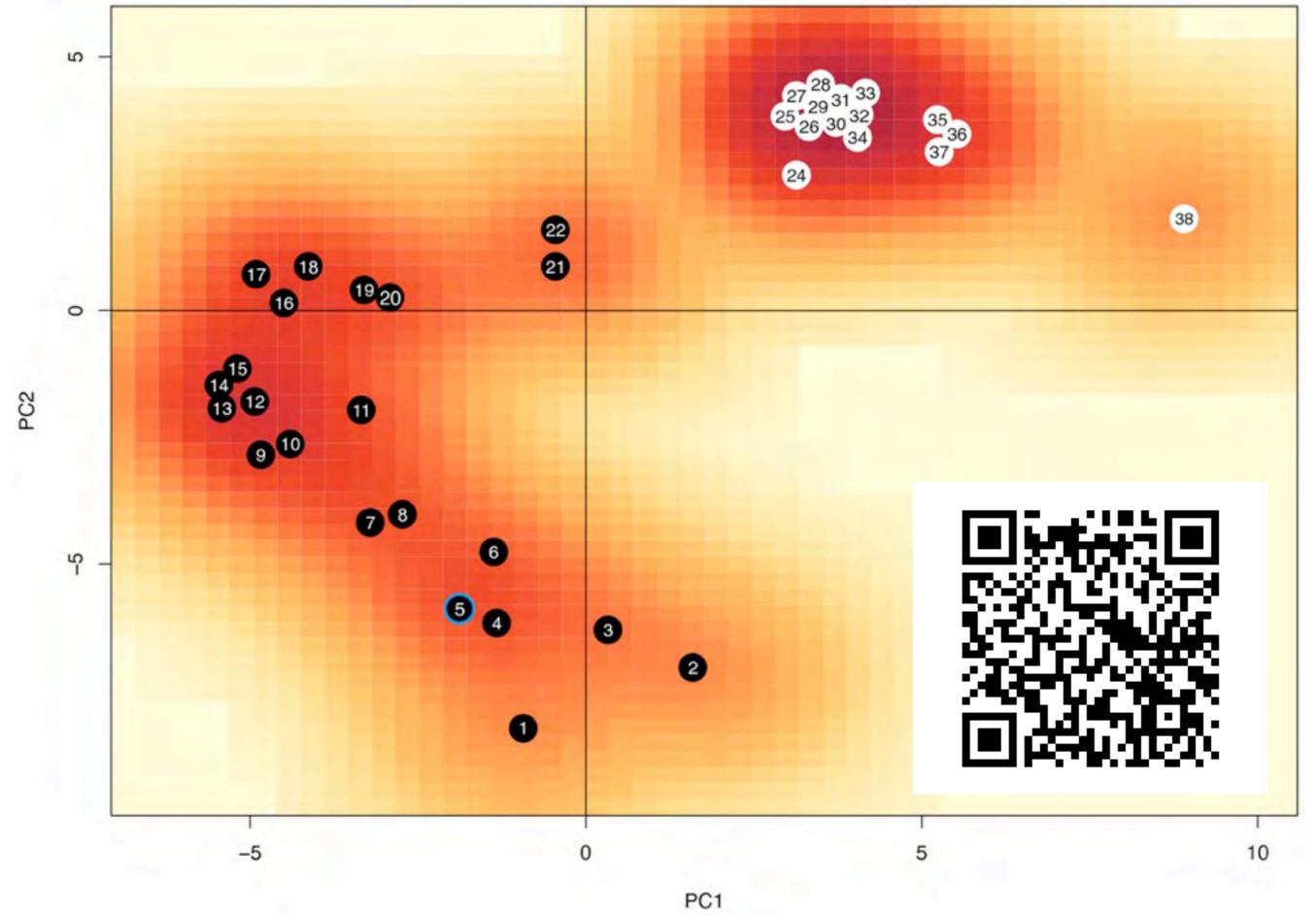
Education = Re-use

Engagement = Re-use

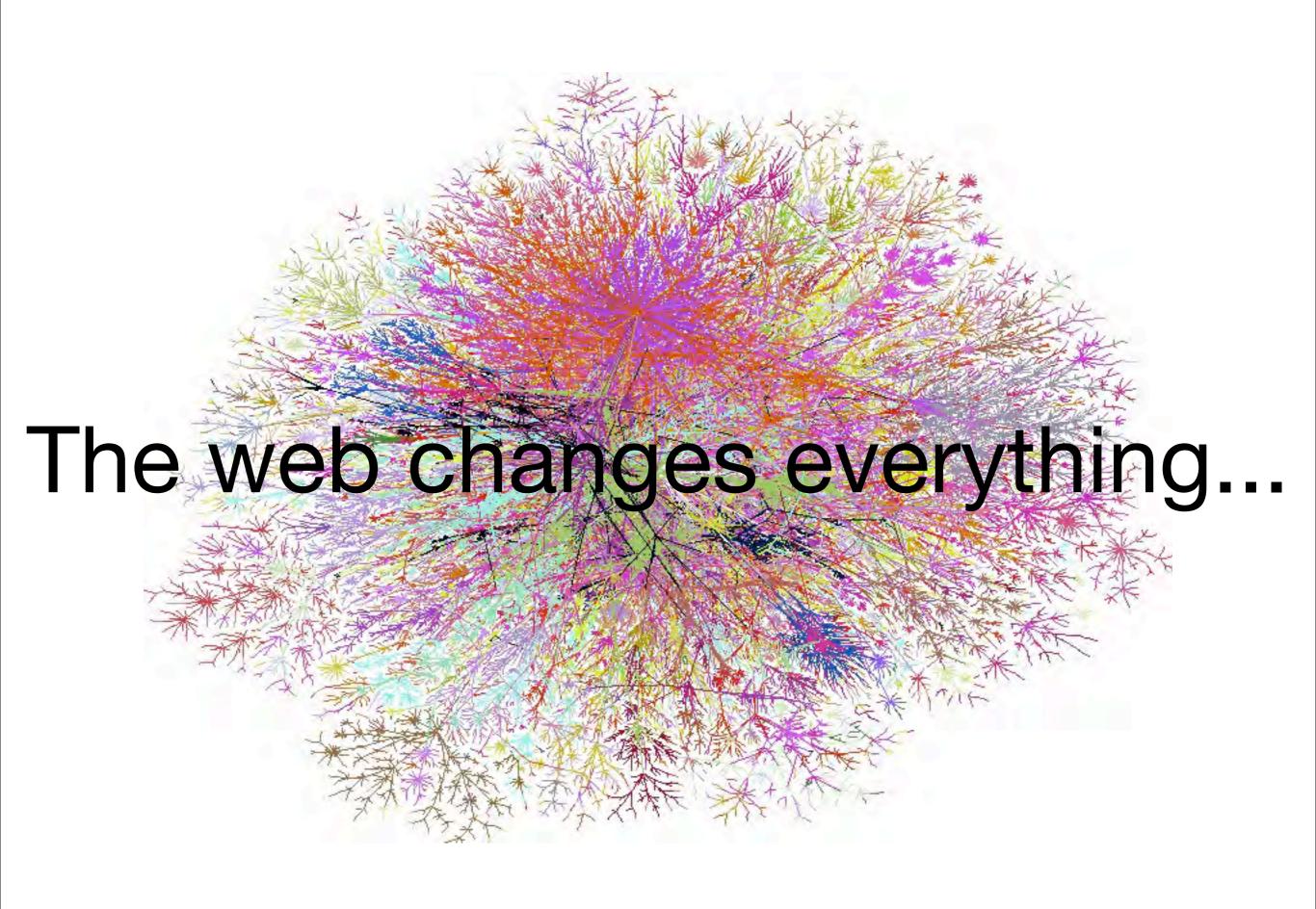
...but also...

Citation = Re-use

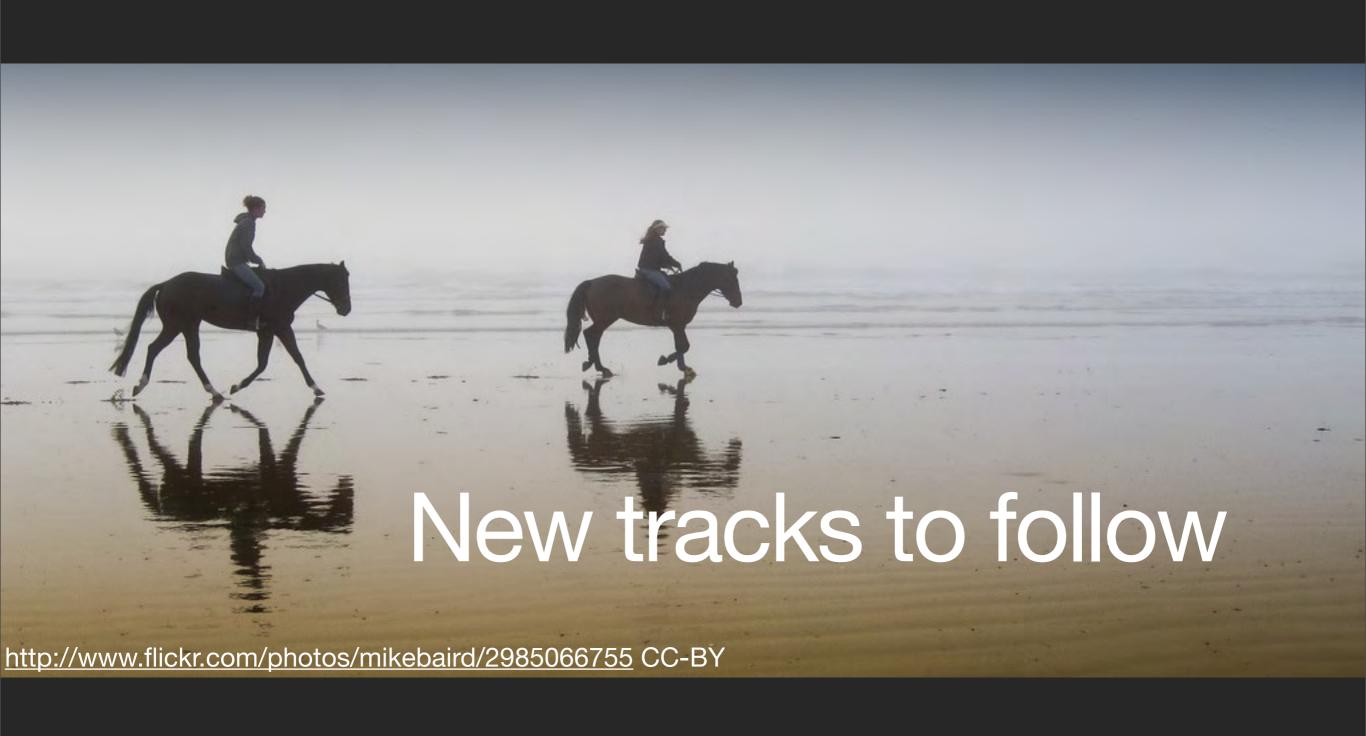


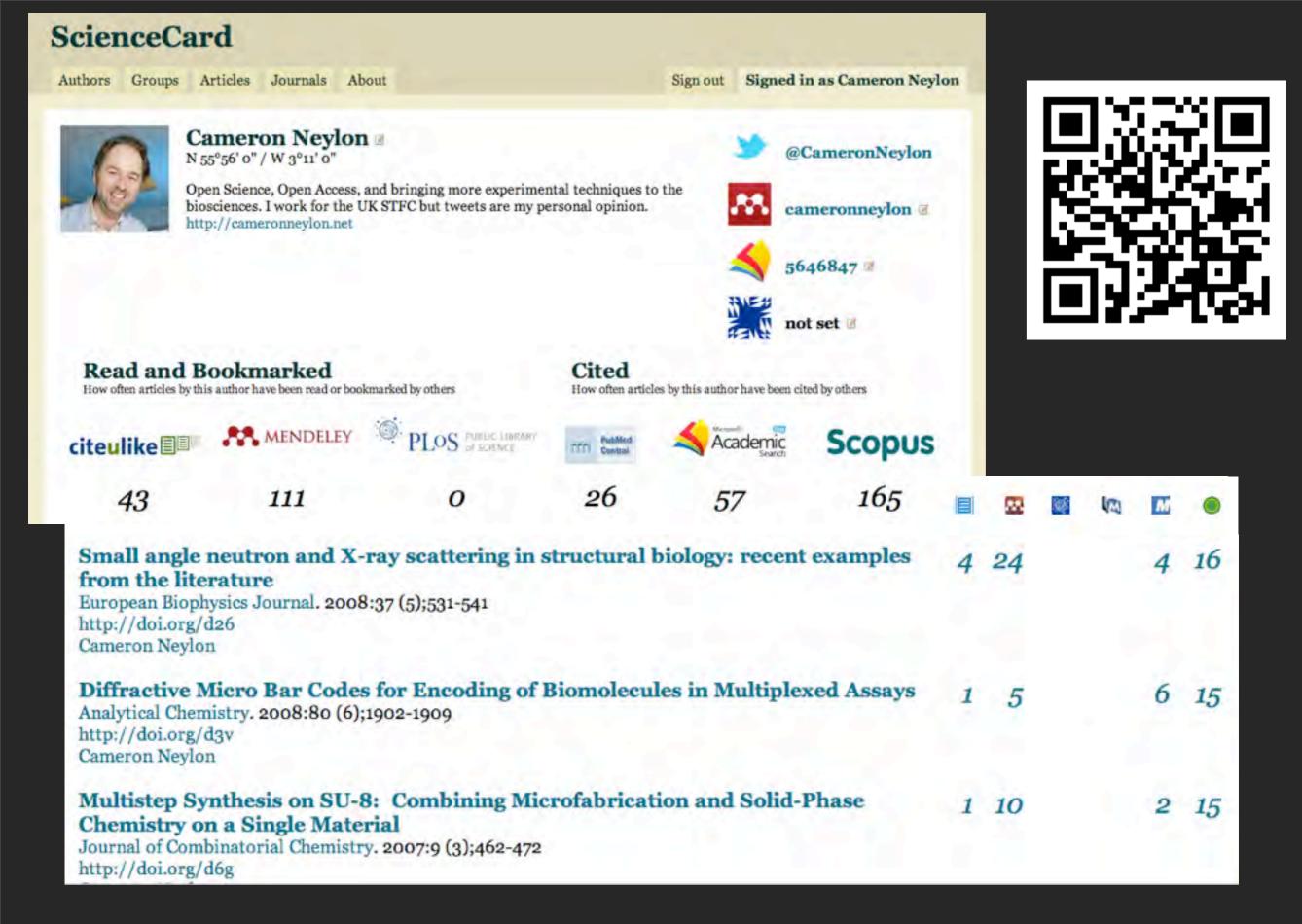


Bollen et al., PLoS ONE 4(6): e6022 doi:10.1371/journal.pone.0006022.g002



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ScienceCard by Martin Fenner - <a href="http://sciencecard.org/CameronNeylon">http://sciencecard.org/CameronNeylon</a>



#### Times of Flight between a Source and a Detector observed from a GPS satelite

relativity explains missing 64ns; superluminal neutrinos now luminal. back to work. (h/t matt knepley)

Relax, neutrinos don't travel faster than light - flaw identified in the OPERA experimenters' analysis

Recommended reading for the thousands who believed the 'faster-than-light' neutrinos signalled the end of relativity

Faster-Than-Light Neutrino Puzzle Claimed Solved by Special Relativity arXiv



#### Vitamin E and the Risk of Prostate Cancer: The Selenium and Vitamin E Cancer Prevention Trial (SELECT)

JAMA: The Journal of the American Medical Association

JAMA Study: #VitaminE and the Risk of #ProstateCancer

Latest JAMA study shows vit E may † prostate cancer risk – sure, b/c they used 400 IU/d of all rac-α-tocopheryl acetate!

De acuerdo a nuevos estudio, consumo de #VitaminaE incrementa riesgo de

Yo se que dijeron que la vitamina E no incrementaba el riesgo de cancer, per opinion



Altmetric.com by Euan Adie - <a href="http://altmetric.com/interface/explorer.html">http://altmetric.com/interface/explorer.html</a>

Bookmarks = Re-use

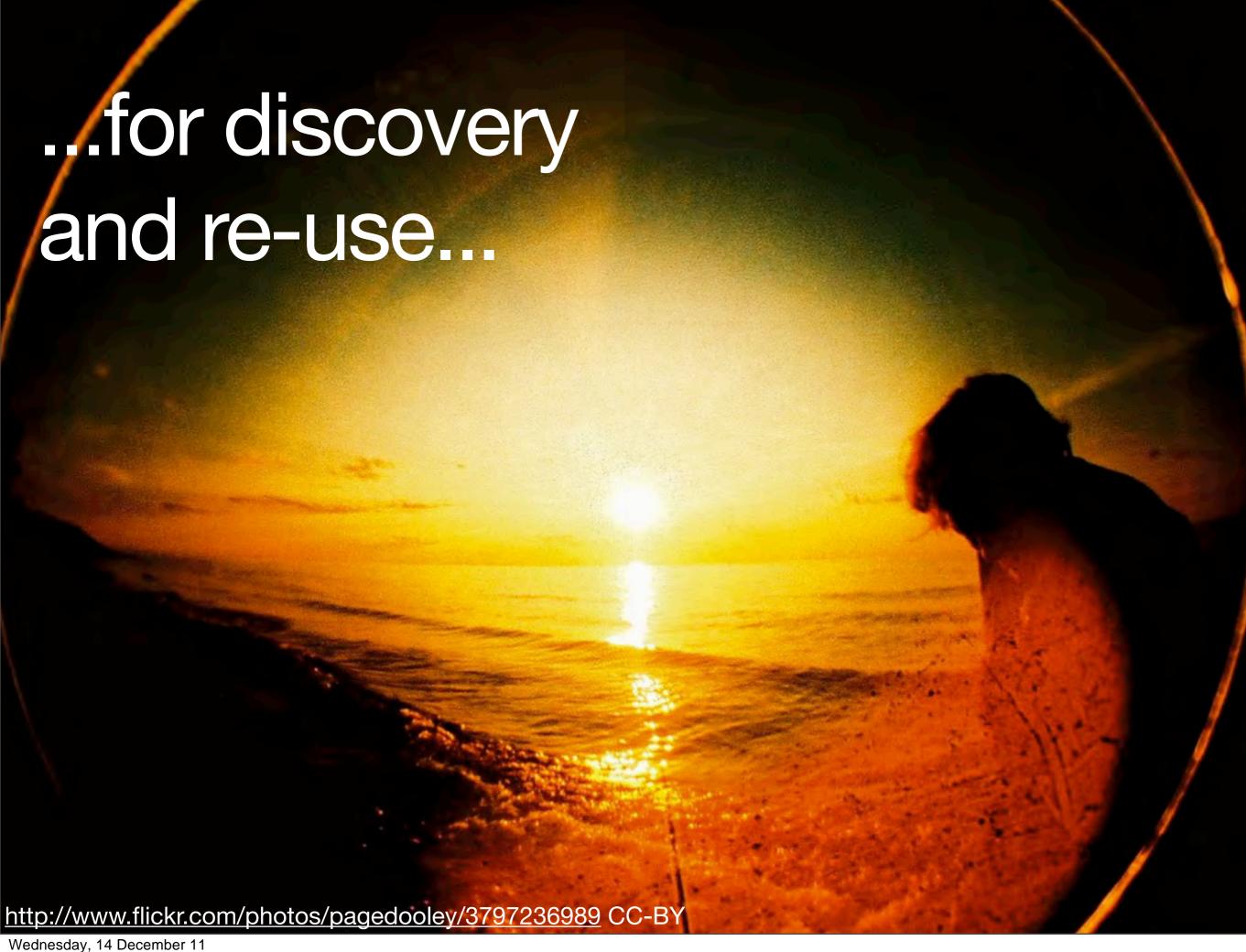
Discussion = Re-use



...on an open network.







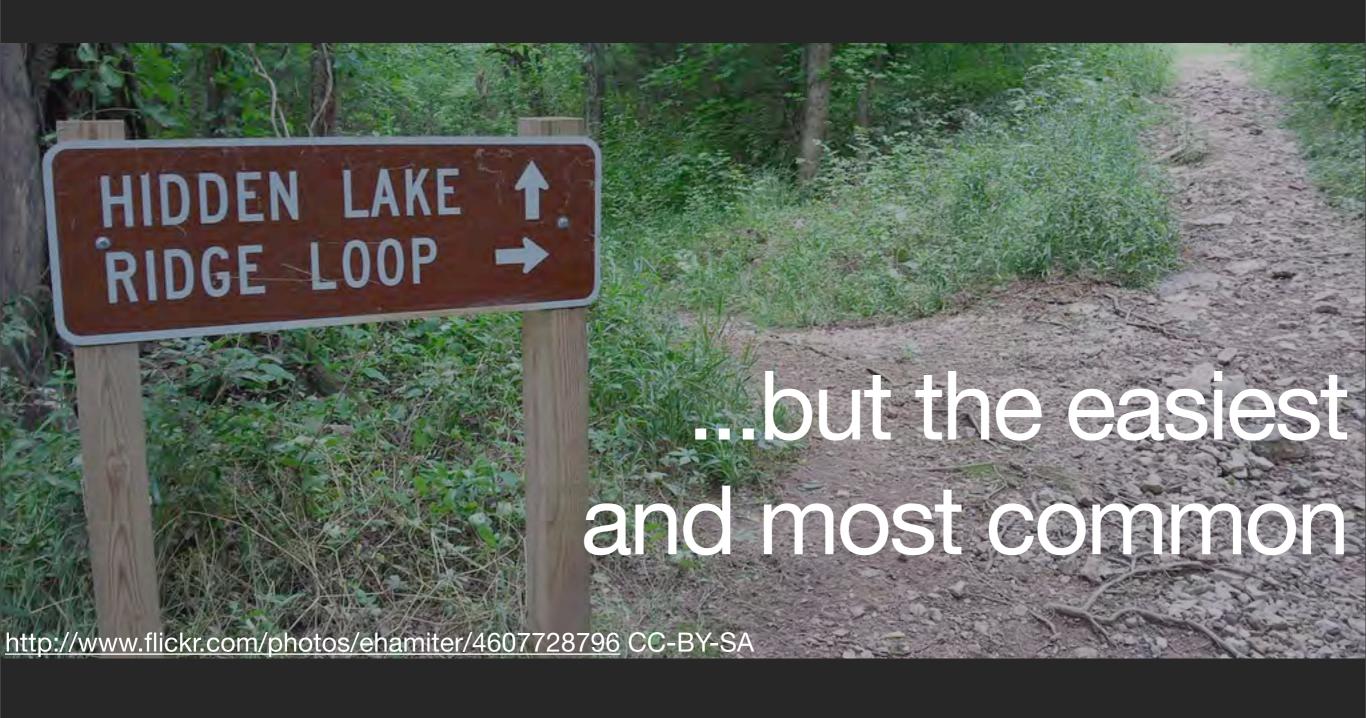




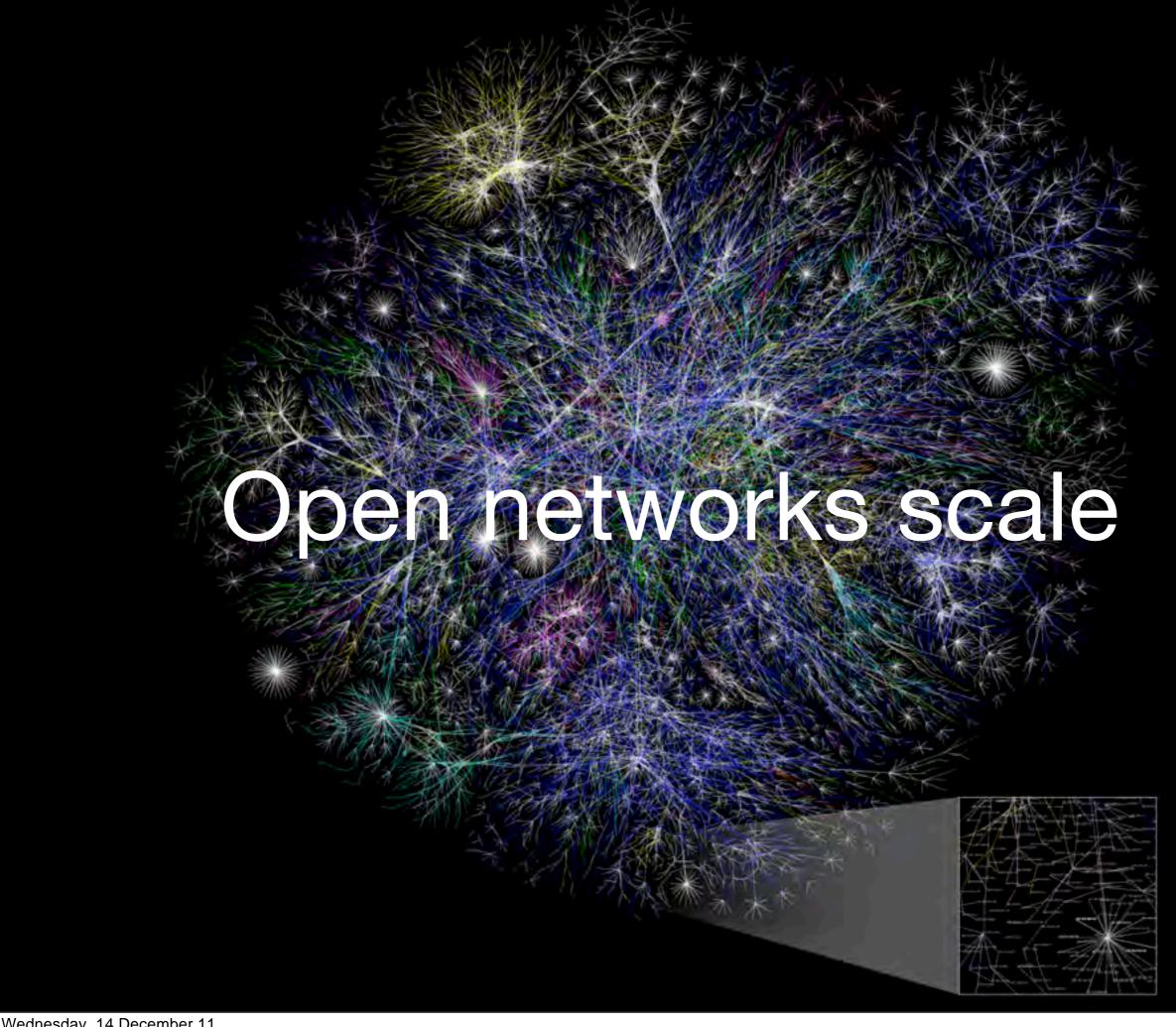
...and the easiest way...



## Not the only way.

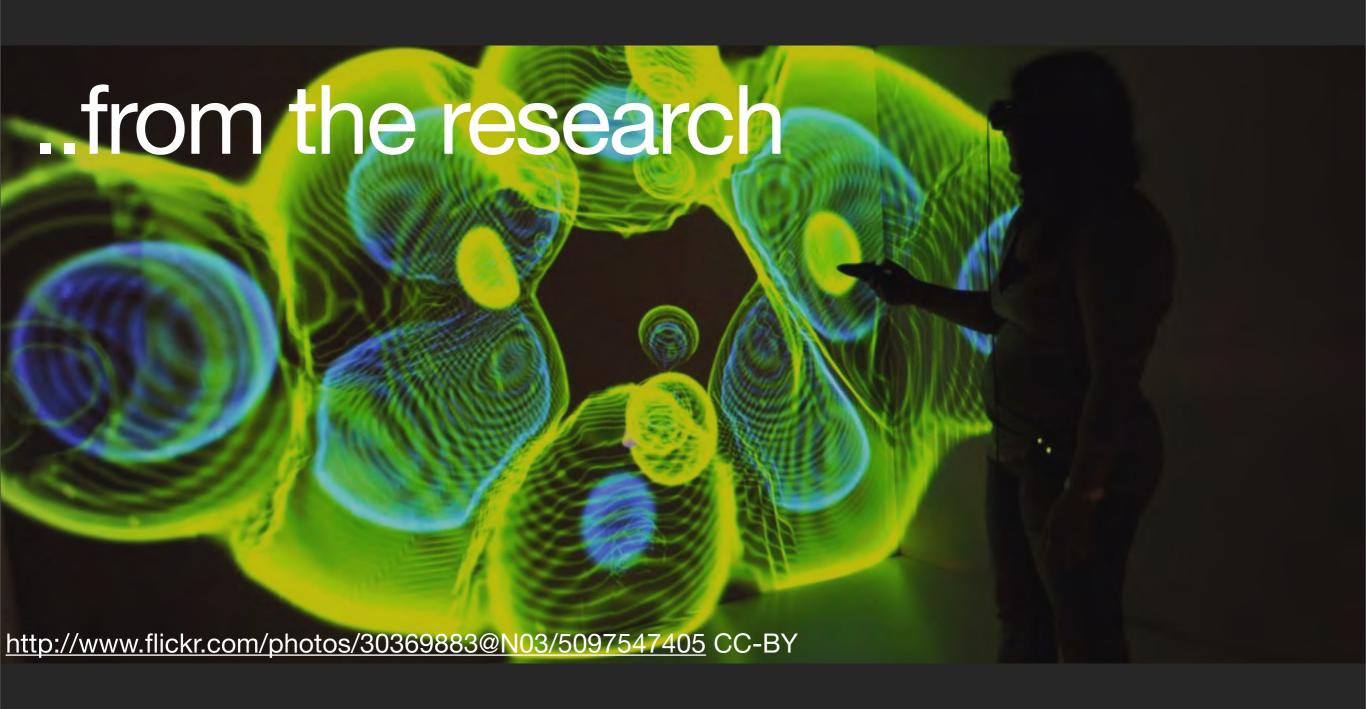


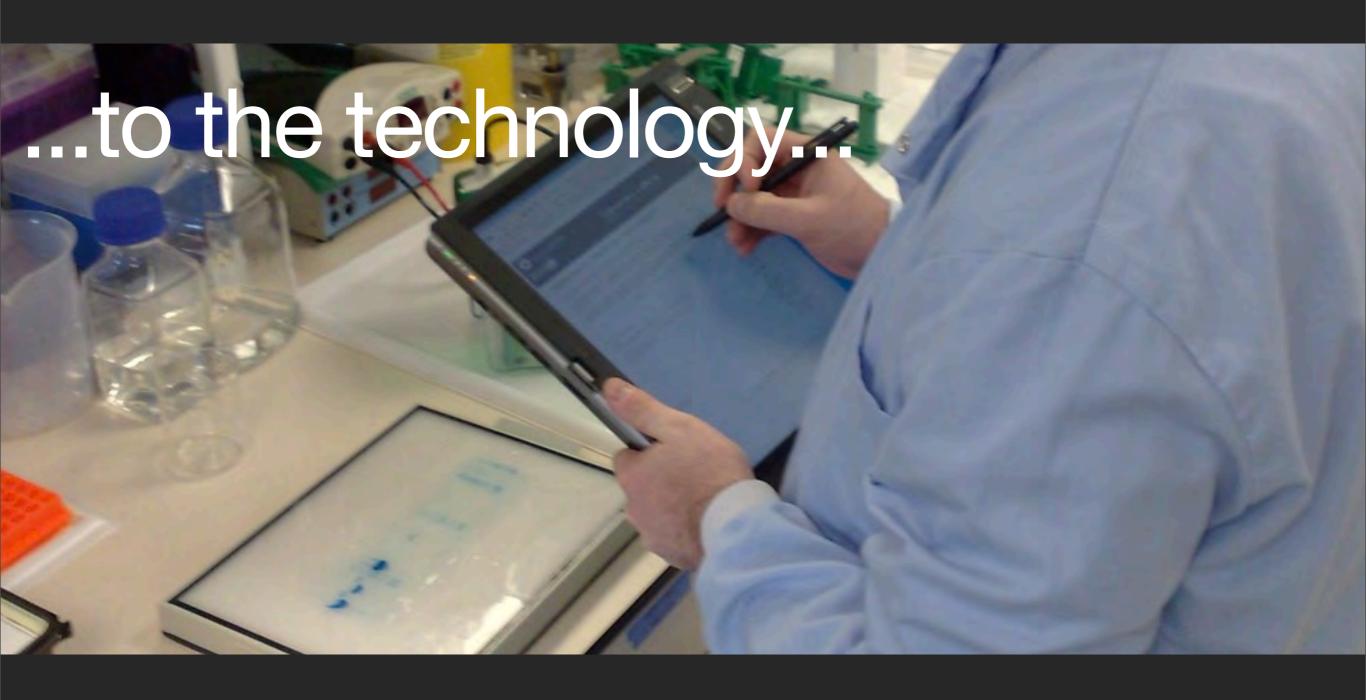
# The solutions won't come from where we expect...



...enable solutions to discover problems...













### The rest will follow...

