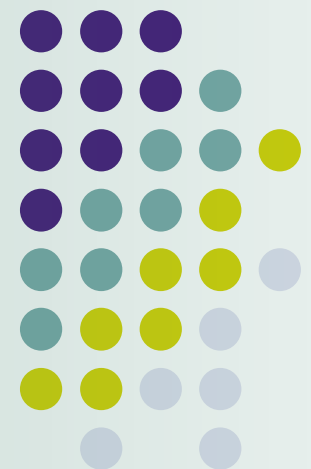


Reuse and Open Access

30 March 2006
Berlin 4 Conference

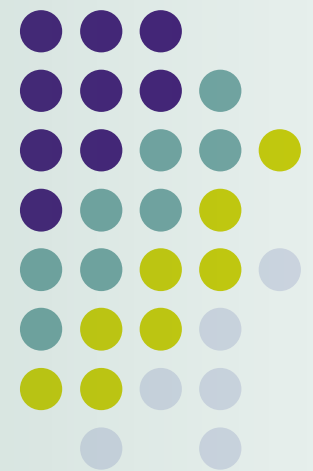




What's the point?

- Scientific innovation is directly related to the freedom to reuse and transform scientific knowledge...it is built on Open Access.
 - Science Commons and Creative Commons: focus on enabling reuse and demonstrating the impact of reusable knowledge.
 - The Neurocommons project: a proving ground.

primer: Creative Commons licenses



Make the policy clear to all copyright holders



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- to copy, distribute, display, and perform the work
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国家的版权法律默认地赋予了原作者很多权利，但是越来越多的人开始意识到自己并非需要保留所有权利。相反他们更愿意选择“保留部分权利”(Some Rights Reserved)或“不保留权利”(No Rights Reserved)。

十一种授权选择

“创作共用”协议机制提供了由4个最常见的授权选择的组合方式，任何作品都可以通过选择这性地组合声明自己的作品授权，实际上可以有11种常见的组合方式。这些组合方式构成了从“松”到“紧”的授权限制，给作品的创造者更加灵活便利的选择。为网络上的数字作品提供了新的“护身符”。

演示



[观看动画，了解“创作共用”的使命（英文）](#)

署名



署名-非派生作品



署名-非派生作品-非商业用途



署名-非商业用途



署名-非商业用途-保持一致



署名-保持一致





Make the transaction machinable

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<permits rdf:resource="http://web.resource.org/cc/Distribution" />
<requires rdf:resource="http://web.resource.org/cc/Notice" />
<requires rdf:resource="http://web.resource.org/cc/Attribution" />
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<permits rdf:resource="http://web.resource.org/cc/CommercialUse" />
</License>
```


Leverage the Web



Advanced Search

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Find results	with all of the words	<input type="text" value="suber open access"/>	10 results ▾	Google Search
	with the exact phrase	<input type="text"/>		
	with at least one of the words	<input type="text"/>		
	without the words	<input type="text"/>		

Language	Return pages written in	<input type="text" value="any language"/>
File Format	<input type="text" value="Only"/> ▾ return results of the file format	<input type="text" value="any format"/>
Date	Return web pages updated in the	<input type="text" value="anytime"/>
Occurrences	Return results where my terms occur	<input type="text" value="anywhere in the page"/>
Domain	<input type="text" value="Only"/> ▾ return results from the site or domain	<input type="text"/>
Usage Rights	Return results that are	<input type="text" value="not filtered by license"/>
SafeSearch	<input checked="" type="radio"/> No filtering <input type="radio"/> Filter using SafeSearch	

e.g. google.com, .org [More info](#)

- not filtered by license
- not filtered by license
- free to use or share
- free to use or share, even commercially
- free to use share or modify
- free to use, share or modify, even commercially

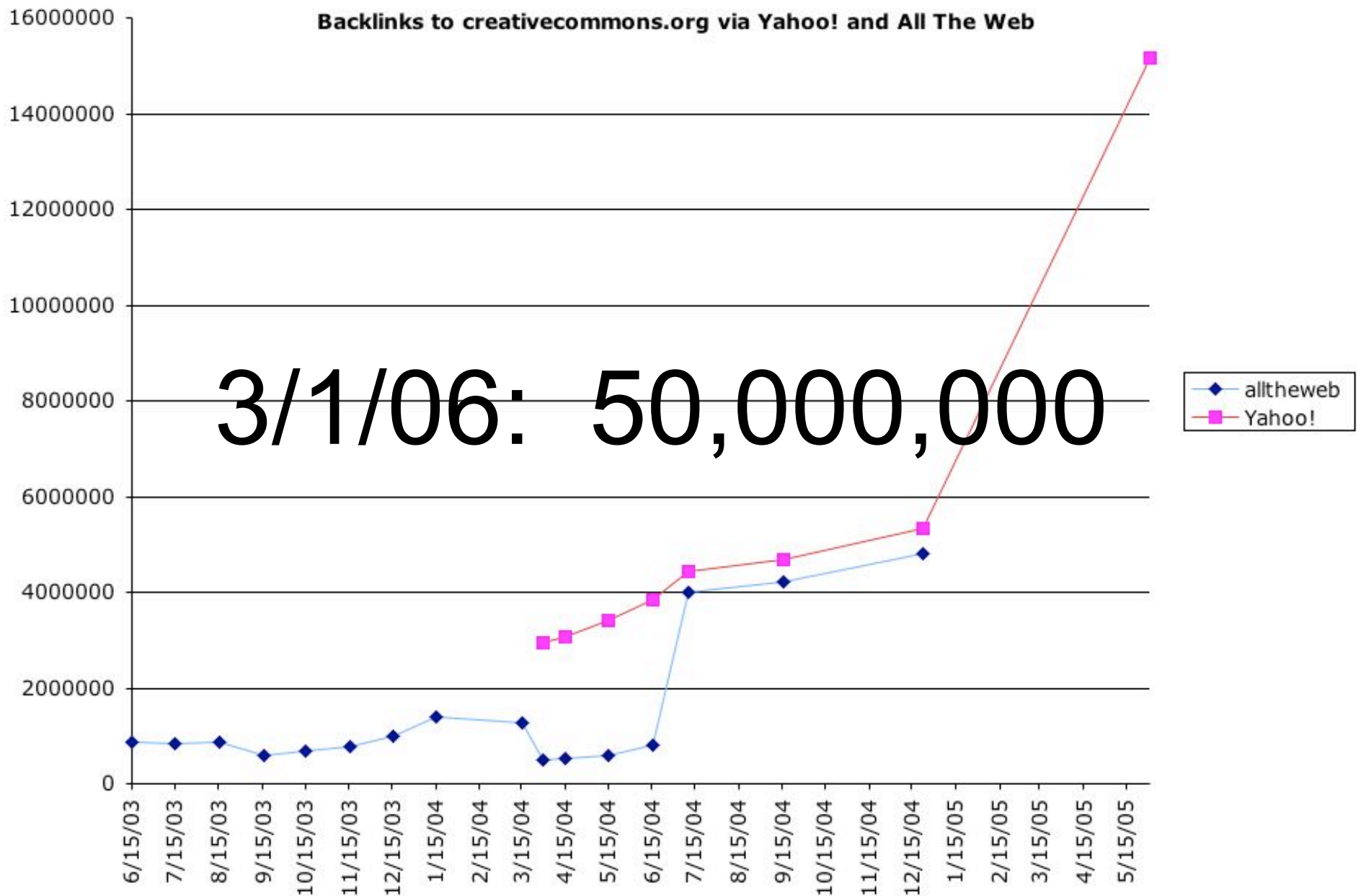
Page-Specific Search

Similar	Find pages similar to the page	<input type="text"/>	Search
Links	Find pages that link to the page	<input type="text" value="e.g. www.google.com/help.html"/>	Search



Backlinks to creativecommons.org via Yahoo! and All The Web

3/1/06: 50,000,000





London Underground bombing, trapped



(viewed 113965 times)

select..

rating: 5.7 (1660 votes)

People trapped in the tube.

This work is licenced under a [Creative Commons Licence](#).

image taken by Adam Stacey

Unintended consequences



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Welcome to CC Mixer

Sampling, Mashing, Sharing

This is a community music sharing site featuring songs licensed under **Creative Commons**, where you can listen to, sample, mash-up, or interact with music in whatever way you want.



To get this project started, we've dedicated space to **WIRED Magazine's November 2004 Issue**, which featured 16 songs on **THE WIRED CD -- Rip. Mix. Sample. Mash. Share.**, all licensed under **the Sampling Licenses**.

If you're into music, browse this site to hear some of the **426 original songs** or some of the **305 remixes** people have built from sampling music on this site.

If you're into sampling, remixing and mash-ups grab the songs and remixes (not to mention **sample packs** and **a cappellas**) for download and you can upload your version back into CC Mixer, for others to enjoy and re-sample. All legal.

our users started using metadata to track genealogy...



Remixes

Remember the Name - REMIX

by: [ojida](#)

date: March 29, 2006 11:18 pm

tags: contest_entry, fortminor, remix, hip_hop, male_vocals, drums, loops, instrumental, piano, rap

license:

Stream

Download ▼

Uses samples from:

Remember the N... by: [Fort Minor](#)

Remember the N... by: [Fort Minor](#)



Freedom Fighters(no money vibe)

by: [shagrugge](#)

date: March 29, 2006 11:15 pm

tags: media, remix, male_vocals, female_vocals, breakbeat, drums, bass, synth, pads, chill, electronic, experimental

license:

Stream

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Uses samples from:

Girl and Super... by: [DeBenedictis](#)

Self Medicated... by: [pablo perez](#)

Son So... by: [Claran...](#)

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Just One Man - Brasileiro -remix

by: [teru](#)

date: March 29, 2006 07:37 pm

tags: media, remix, male_vocals, downtempo, guitar, chill

ratings: ★★★★★☆ (4.00/1)

license:

[Reviews \(2\)](#)

Stream

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Uses samples from:

Just One Man by: [Chris Horne](#)

Flyfloatflute ... by: [Marcos Oliva](#)

Brasil... by: [Marcos...](#)

[More...](#)



open metadata has become a metric of reuse



Back to the point: reuse

- Tracking through copyright licensing lets us track the reuse
- Reuse leads to creativity the original authors did not envision
- Reuse is a fascinating ***metric*** of the impact of a creative work...

Reusing open text: The Neurocommons project



in conjunction with

TERANODE®

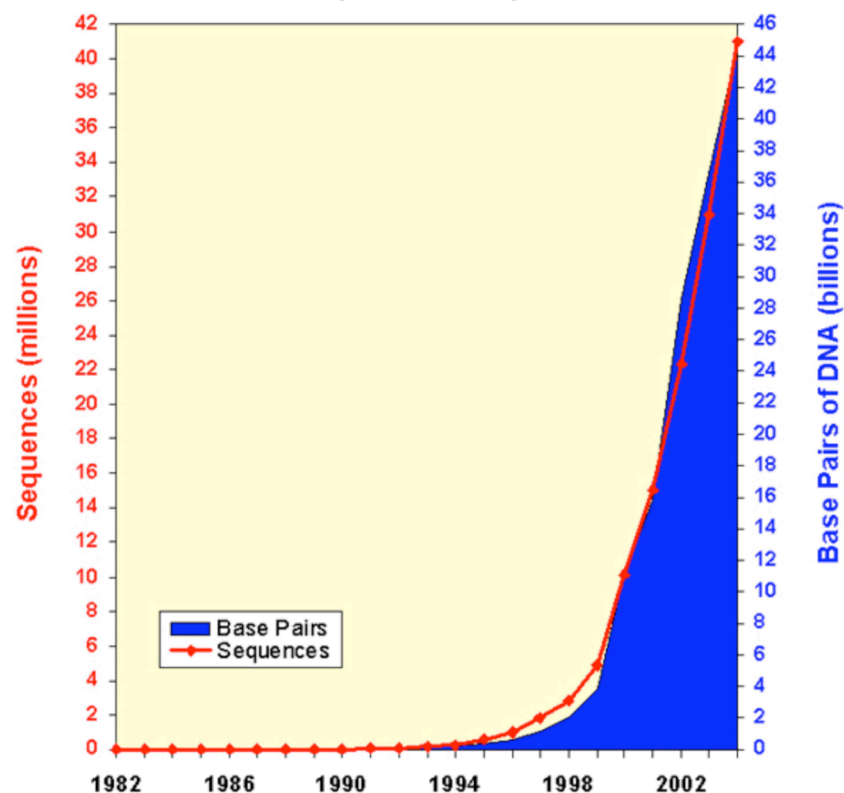


The Neurocommons Project

- Public domain graph of neurological facts built on Open Access knowledge and public databases
- Standard software infrastructure
 - Text mining
 - Relationship storage
 - Metadata storage
- Community of practice - must develop beyond Science Commons...
- Operations manuals and project documentation



Growth of GenBank (1982 - 2004)



Knowledge explosion

Key MEDLINE® Indicators

	FY2004	% Change	FY2003	% Change	FY2002	% Change	FY2001	% Change	FY2000	% Change
Citations Indexed for MEDLINE	571,000	+9%	526,338	+5%	502,056	+8%	463,014	+5%	442,000	+2%
PubMed® Searches	677 Million	+35%	503 Million ¹	+32%	380 Million	+15%	330 Million ²	+35%	244 Million	----

Semantic Web (Berners-Lee 2001)

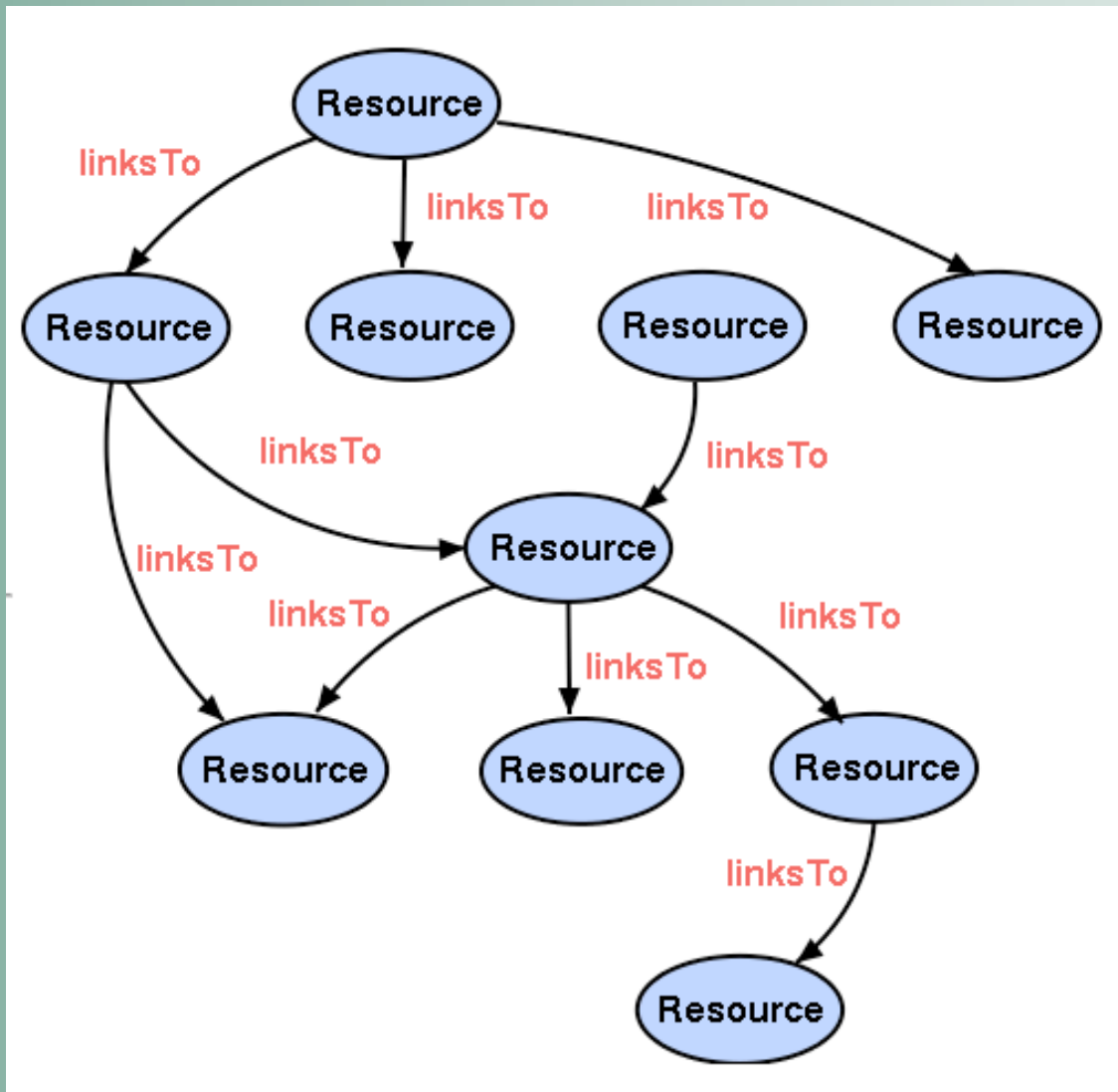


image courtesy of w3.org

Semantic Web (Berners-Lee 2001)

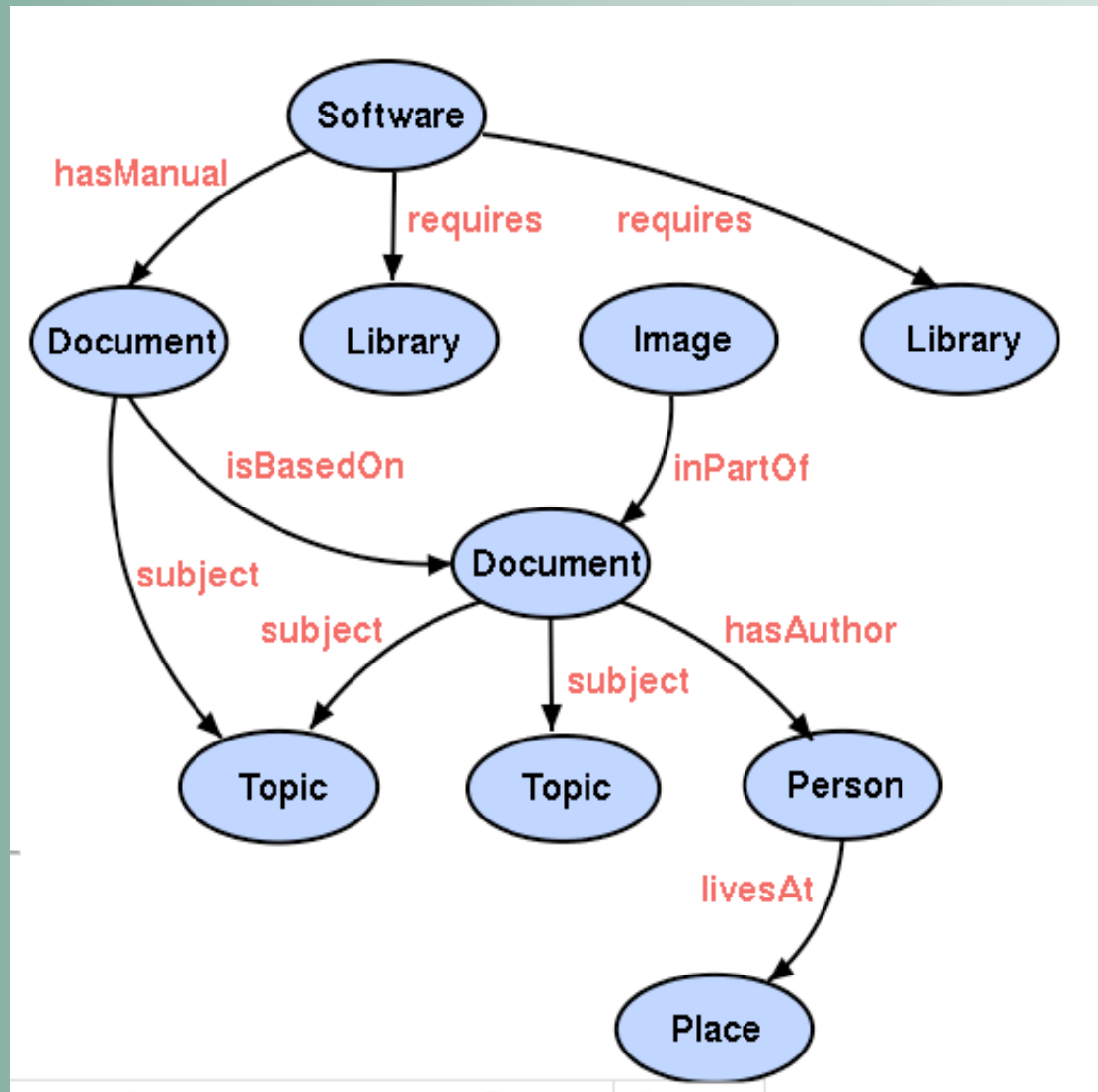


image courtesy of w3.org



The problem

- WWW just needed *technical* interconnection to link pages
- Semantic Web needs *knowledge* interconnection to link resources
- Most of that rich interconnection is proprietary
 - Locked up behind restrictive contracts based on copyrights
 - Publisher can encrypt down to clickstream...

Extracting knowledge



p53 activates ICAM-1 (CD54) expression in an NF-kappaB-independent manner.

Gorgoulis VG, Zacharatos P, Kotsinas A, Kletsas D, Mariatos G, Zoumpourlis V, Ryan KM, C, Papavassiliou AG.

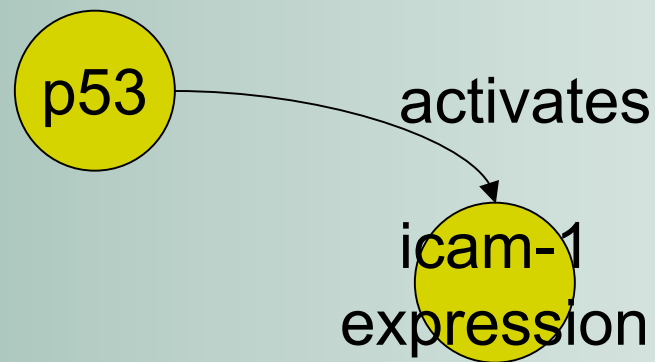
<p53><activates><icam-1 expression>

Natural language processing (NLP) can
extract these relationships

Republishing knowledge



<p53><activates><icam-1 expression>



Republishing using Semantic Web creates
open knowledge sub-graphs

Open Access: More rights, more impact...



BMC Neuroscience
Volume 7

Viewing options:

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Research article

Select estrogens within the complex formulation of estrogens (Premarin(R)) are protective against neu implications for a composition of estrogen therapy t function and prevent Alzheimer's disease

Liqin Zhao and Roberta D Brinton

BMC Neuroscience 2006, **7**:24 doi:10.1186/1471-2202-7-24

Published 13 March 2006

Abstract (provisional)

Background

Results of the Womens Health Initiative Memory Study (WHIMS) raised conc formulation of hormone interventions. Conjugated equine estrogens (CEE), u WHIMS trial, is a complex formulation containing multiple estrogens, includi ovaries, as well as other biologically active steroids. Although the full spectr present in CEE has not yet been resolved, 10 estrogens have been identified determine which estrogenic components, at concentrations commensurate w following a single oral dose of 0.625 mg CEE (the dose used in the WHIMS t and whether combinations of those neuroprotective estrogens provide addc computer-aided modeling analyses, to investigate the potential correlation c confer estrogen neuroprotection with estrogen interactions with the estrogen

eprints archives: more text, more impact



11th Joint Symposium on Neural Computation

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Year: 2004

Number of records: **30**.

Conference or Workshop Item

Navalpakkam, Vidhya and Itti, Laurent (2004) [A mathematical framework for the design and analysis of feature biasing strategies](#). In: 11th Joint Symposium on Neural Computation,, May 15 2004, University of Southern California.

Mileusnic, Milana and Loeb, Gerald E. (2004) [A model of the mammalian muscle spindle](#). In: 11th Joint Symposium on Neural Computation, May 15 2004, University of Southern California.

Merwine, David K. and Grzywacz, Noberto M. (2004) [Bayesian local directional accuracy of a directionally selective Ganglion-cell ensemble](#). In: 11th Joint Symposium on Neural Computation, May 15 2004, University of Southern California.

Chu, Wilson and Lu, Zhong-Lin and Doshier, Barbara Anne (2004) [Characterizing and modeling temporal dynamics of perceptual decision making](#). In: 11th Joint Symposium on Neural Computation, May 15 2004, University of Southern California.

Polsky, Aloian and Mel, Bartlett W. and Schiller, Jackie (2004) [Computational subunits in thin dendrites of pyramidal cells](#). In: 11th Joint Symposium on Neural Computation, 15 May 2004, University of Southern California.

Carmi, Ran and Itti, Lawrence (2004) [Disentangling topdown from bottom up influences on attentional allocation in dynamic scenes](#). In: 11th Joint Symposium on Neural Computation, May 15 2004, University Of Southern California



What about copyright?

- Applies to *creative expression*, not *facts of nature*
- One major copyright problem is the way firewalls and contracts are used to prevent technical reuse
- Another is the prevention of translation into local languages - but Neurocommons *can be translated...*

Extracting knowledge



: Genes Dev. 1995 Sep 1;9(17):2143-56.

Rel:

The WT1 gene product stabilizes p53 and inhibits p53-mediated apoptosis.

Maheswaran S, Englert C, Bennett P, Heinrich G, Haber DA.

<WT1 GP><stabilizes><p53>

<WT1 GP> <inhibits><p53-mediated apoptosis>

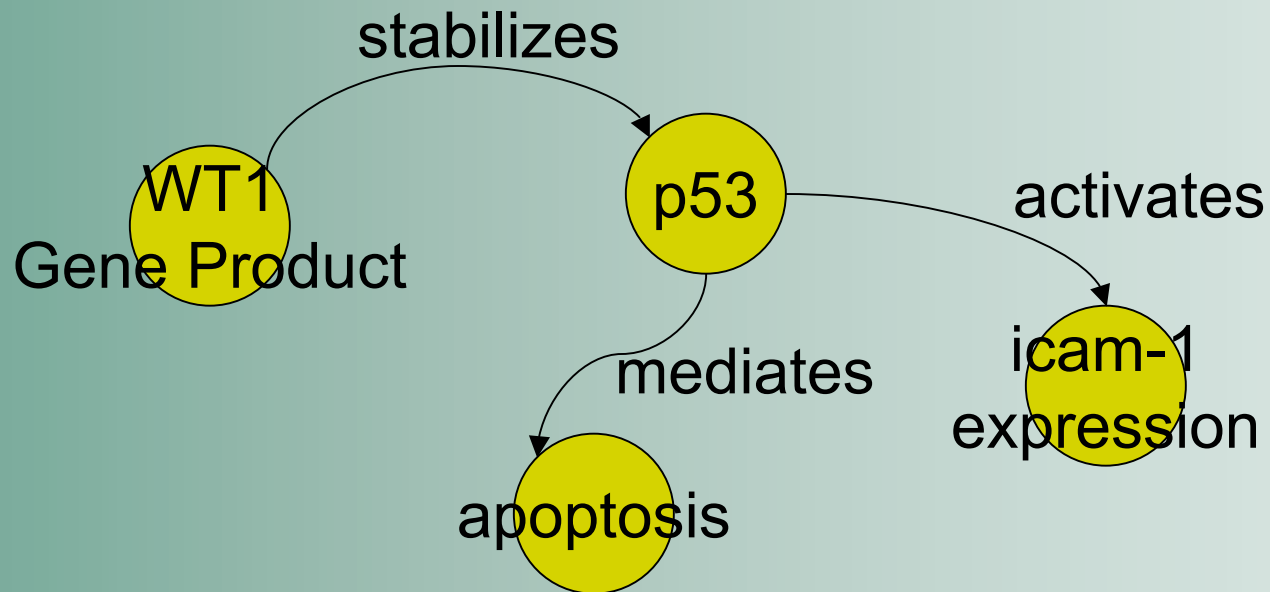


Graphing knowledge

<WT1 GP><stabilizes><p53>

<p53><activates><icam-1 expression>

<WT1 GP> <inhibits><p53-mediated apoptosis>





NCBI

Copyright and Disclaimers

PubMed

Entrez

BLAST

OMIM

Taxonomy

Structure

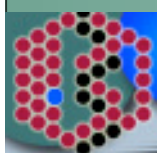
NCBI

SITE MAP

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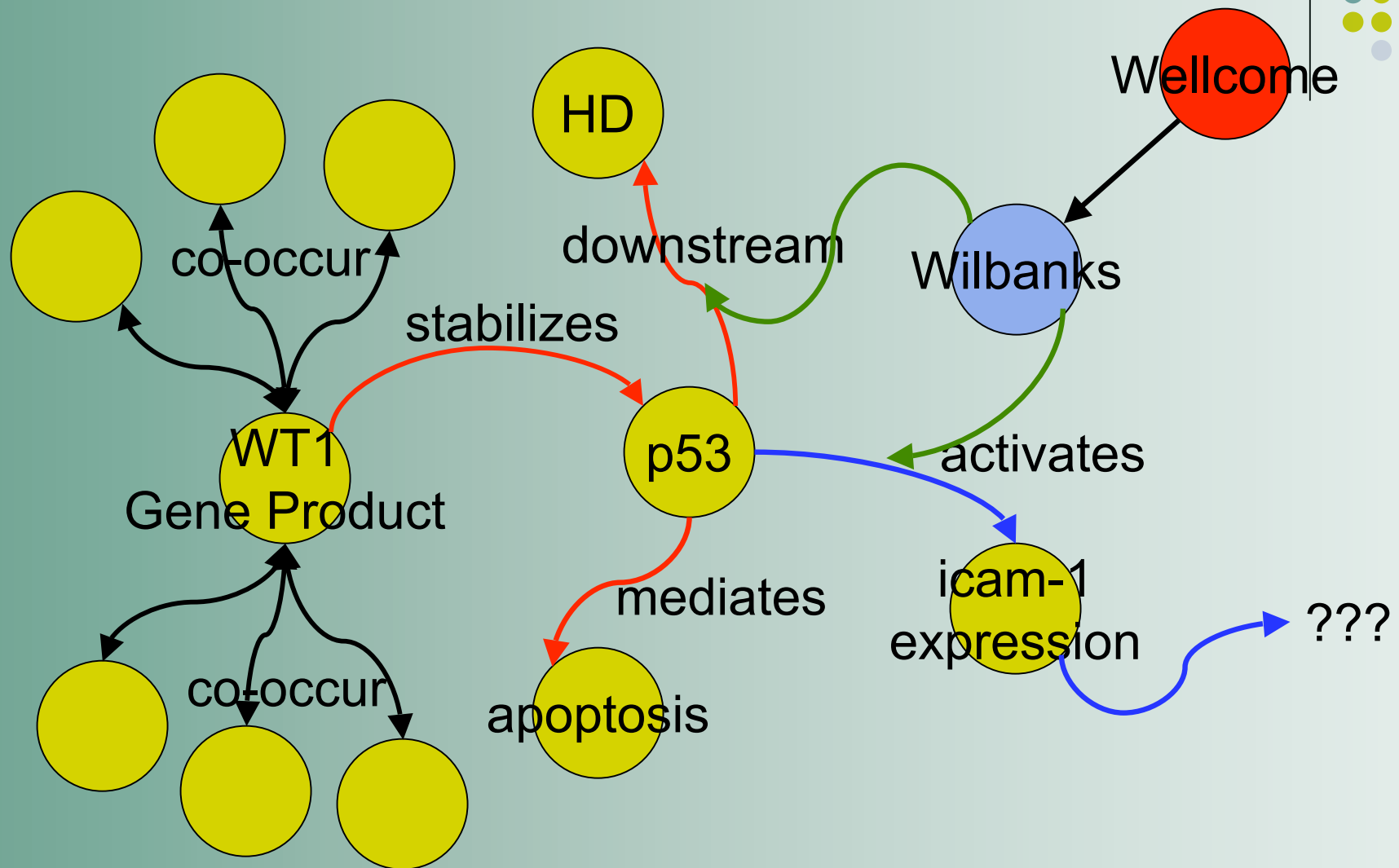


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Reuse of knowledge






Status

- Funded by Teranode (venture backed software company, Seattle WA)
- Launched January 2006
 - Partnerships with major research hospitals, neuroscience infrastructure, W3C HCLSIG, Open Access publishers
 - Working group of neuroinformaticists, neuroscientists, Semantic Web, NLP, legal theorists
- Alpha release: 4th Quarter, 2006

Diabetes Type 2

 Advanced Search

WHAT'S NEW

SEARCH

Search Results for 'Diabetes Type 2'

[\[Edit Search\]](#)All · [Pathway](#)

Pathways

☐ [WNT Pathway](#)

"The
GS
dep

☐ [Insulin Re](#)

"W
gly

Compounds

☐ [SB21673](#) 

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Why was this found?

WNT Pathway plays a role in Diabetes Type 2
WNT Pathway is a primary target of SB21673

[Wikipedia](#), 3/2/2002

Interacts with

[PubMed](#), 7/14/2004

Interacts with such as

Compounds

☐ [SB21673](#)

Why was this found?

WNT Pathway plays a role in Diabetes Type 2

WNT Pathway is a primary target of SB21673



Where we're going

- Data sets and relationships from data
- Extend FOSS infrastructure
 - Annotation, markup and query
 - Publishing - automatic additions to the graph
- International partnerships - “leapfrog” the established systems of publishing
- Coordinate with other scientific domains



“Steal this book”

- Back to the point: it's about reuse...
- If you want this infrastructure in your domain, all our work will be available
 - Graph: public domain
 - Software written by SC: under OSI licenses to open APIs
 - Can use corporate partner software, or use Free Software / Open Source Software wired to the open APIs

Promise to practice...



Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities

Preface

The Internet has fundamentally changed the practical and economic realities of distributing scientific knowledge and cultural heritage. For the first time ever, the Internet now offers the chance to constitute a global and interactive representation of human knowledge, including cultural heritage and the guarantee of worldwide access.

We, the undersigned, feel obliged to address the challenges of the Internet as an emerging functional medium for distributing knowledge. Obviously, these developments will be able to significantly modify the nature of scientific publishing as well as the existing system of quality assurance.

In accordance with the spirit of the Declaration of the Budapest Open Access Initiative, the ECHO Charter and the Bethesda Statement on Open Access Publishing, we have drafted the Berlin Declaration to promote the Internet as a functional instrument for a global scientific knowledge base and human reflection and to specify measures which research policy makers, research institutions, funding agencies, libraries, archives and museums need to consider.



Thanks to MIT, CSAIL, the
Omidyar Network, Teranode
& the High Q Foundation

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