

Revolutionizing scientific communication and collaboration

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Allen Press Emerging Trends in Scholarly Publishing Seminar

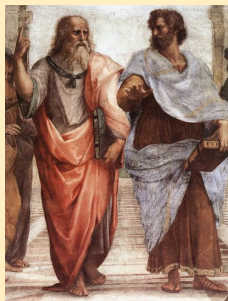
Washington, USA

April 12, 2007

Motivation

Communication is essential for science

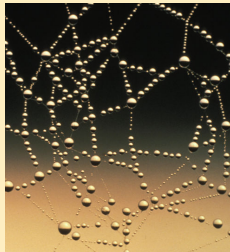
- Exchange inside the scientific community
 - Science is built on the previously done work
 - Avoid redundancy – do not invent the wheel twice
 - Find collaborations
 - Get inspiration
- Make knowledge available for the general public



Motivation

Scientific communication and *Web 2.0*

- New web technologies dubbed as *Web 2.0* make communication and collaboration cheaper, easier, faster and decentralized.
- They are complementary to current scientific communication but might become a substitution for those classical channels.



We are just at the beginning

I find it ironic that science is about the adoption, discovery and exploitation of new knowledge and techniques, yet the biggest revolution on the web is passing us by.

Greg Tyrelle (*Nature*, 1 December 2005, 438, 548-549)

Scientists are more interested in their careers and grants than using tools that promote better communication and data sharing.

David Lipman

“He’s optimistic that this attitude may change in the future, however, especially as a new generation used to communicating through social sites such as MySpace enters research.”

(*Nature*, 1 March 2007, 446, 10-11)

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(*Nature*, 1 March 2007, 446, 10-11)

There is so much to talk about ...



Pg



HubMed: pubmed rewired



... but I will focus on two topics.

Wikis – Knowledge management made easy

What's a wiki

- *wiki wiki* – hawaiian for *quick*
- When Tim Berners-Lee invented the WWW he thought about a web everybody can edit - wikis are exactly that
- Create/change/delete web pages online
- All versions are kept and can be recovered/compared
- Contributions of users can be determined



Wiki features – Viewing a document

Precedings : doi:10.1038/npre.2007.153.1 : Posted 21 Jun

The screenshot shows a web browser window displaying the Wikipedia article for 'Metagenomics'. The browser's address bar shows the URL 'http://en.wikipedia.org/wiki/Metagenomics'. The page title is 'Metagenomics' and the subtitle is 'From Wikipedia, the free encyclopedia'. The article text states that metagenomics is the study of genomes recovered from environmental samples, as opposed to clonal cultures. It lists contents such as history, sequences from environmental samples, community metabolism, and references. The history section mentions Norman R. Pace and his work on cloning DNA directly from environmental samples in 1985 and 1991.

http://en.wikipedia.org/wiki/Metagenomics

Metagenomics... Editing Metageno... Metagenomics - ... Metagenomics - ... Talk:Metagenomi...

article | discussion | edit this page | history

Your **continued donations** keep Wikipedia running!

Metagenomics

From Wikipedia, the free encyclopedia

Metagenomics (also **Environmental Genomics**, **Ecogenomics** or **Community Genomics**) is the study of **genomes** recovered from **environmental** samples as opposed to from **clonal cultures**.

Contents [hide]

- 1 History
- 2 Sequences from environmental samples
- 3 Community metabolism
- 4 References
 - 4.1 Review articles
 - 4.2 Methods
 - 4.3 Bioinformatics
 - 4.4 Marine ecosystems
 - 4.5 Sediments
 - 4.6 Extreme environments
 - 4.7 Medical Sciences and biotechnological applications
 - 4.8 Patents
- 5 External links

History [\[edit\]](#)

This relatively new field of **genetic** research allows the genomic study of organisms that are not easily cultured in a laboratory. Early molecular work in the field was conducted by **Norman R. Pace** and colleagues, who used **PCR** to explore the diversity of ribosomal RNA sequences from organisms present in uncultured environmental samples. Considerable efforts ensured that these were not PCR false positives and supported the existence of a complex community of unexplored species. Although this methodology was limited to exploring highly conserved, non-protein coding genes, it did support early microbial morphology-based observations that diversity was far more complex than was known by culturing methods.

The insights gained from these breakthrough studies led Pace to propose the idea of cloning DNA directly from environmental samples as early as 1985 (ASM News 51:4). This led to the first report of isolating and cloning bulk DNA from an environmental sample, published by Pace and colleagues in 1991 (J. Bacteriol. 173: 4371) while Pace

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- 日本語

Wiki features – History of versions

Precedings : doi:10.1038/npre.2007.153.1 : Posted 21 Jun 2007

http://en.wikipedia.org/w/index.php?title=Metagenomics&action=his Technorati

W Metagenomics - ... W Editing Metageno... W **Metagenomics...** W Metagenomics - ... W Talk:Metagenomi...

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Metagenomics

From Wikipedia, the free encyclopedia

Revision history
View logs for this page

(Latest | **Earliest**) View (previous 50) (next 50) (20 | 50 | 100 | 250 | 500).

For any version listed below, click on its date to view it.
For more help, see [Help:Page history](#) and [Help:Edit summary](#).
(cur) = difference from current version, (last) = difference from preceding version.
b = bot edit, **m** = minor edit, **→** = section edit, **-** = automatic edit summary

- (cur) (last) **15:33, 3 April 2007** PIMaster3 (Talk | **contribs**) **m**
- (cur) (last) **15:52, 1 April 2007** 75.26.23.16 (Talk) (*~Review articles*)
- (cur) (last) **20:18, 27 March 2007** Sabedon (Talk | **contribs**) (*~Sequences from environmental samples - added reference to bacteriophages including Wiki link*)
- (cur) (last) **22:45, 14 March 2007** 146.151.192.120 (Talk) (*~Extreme environments*)
- (cur) (last) **19:21, 14 March 2007** Konrad Foerstner (Talk | **contribs**) (*~Marine ecosystems - - Added Global Ocean Sampling expedition papers*)
- (cur) (last) **17:07, 14 March 2007** Shayno (Talk | **contribs**) (*Added link to PLoS Biol article*)
- (cur) (last) **20:54, 21 February 2007** Rajah (Talk | **contribs**) **m** (*~External links*)
- (cur) (last) **20:53, 21 February 2007** Rajah (Talk | **contribs**) (*~External links - +link to list of Metagenome Projects*)
- (cur) (last) **09:35, 21 February 2007** 68.127.169.234 (Talk) (*~External links*)
- (cur) (last) **09:34, 21 February 2007** 68.127.169.234 (Talk) (*~External links*)
- (cur) (last) **01:35, 10 February 2007** CmdrObot (Talk | **contribs**) **m** (*sp: colleagues~colleagues*)
- (cur) (last) **02:14, 22 January 2007** 68.127.176.233 (Talk) (*~External links*)
- (cur) (last) **21:41, 20 January 2007** Daniel Vault (Talk | **contribs**) **m** (*~History - correct reference*)
- (cur) (last) **18:32, 20 January 2007** Daniel Vault (Talk | **contribs**) (*~References - Include many new references and organize references by environments*)
- (cur) (last) **13:08, 20 January 2007** Daniel Vault (Talk | **contribs**) (*1. Create history heading at top 2.*)

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Wiki features – Discussion

Precedings : doi:10.1038/npre.2007.153.1 : Posted 21 Jun 2007

http://en.wikipedia.org/wiki/Talk:Metagenomics
Technorati

W Metagenomics - ...
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WIKIPEDIA
The Free Encyclopedia

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Talk:Metagenomics

From Wikipedia, the free encyclopedia

I think the subject also need some comments the study of organisms acting as a community. An example being the flow of a metabolite through the different metabolisms. Any thoughts? Or Perhaps that comes under systems biology instead?

It does include an aspect of studying an entire community at a genetic level.

I'd say yes and no to this. Following a metabolite through different metabolisms would fall under something like systems biology and might not require any genomic information at all so metagenomics might not be the right label. Such studies are also not the sole concern of metagenomics. Diversity and evolution are also concerns in the field.


On the other hand, such a study is one of the really useful things that metagenomics can do and do well and probably what a lot of people in the field are doing, so it definitely deserves a prominent mention if not is own section. It's just not what I'm doing in metagenomics, so I didn't think to put it in.

Also, just because I started the page page, doesn't mean you can't add what you'd like to it. If you have some knowledge or interest in this area, please contribute. Jmpepley 21-05, 25 Jan 2005 (UTC)

Diversa Corporation [edit]

Obviously someone closely with Diversa Corporation has edited this piece. Metagenomics is obviously not only Diversa Corporation !!! I removed Press releases and all mentions to Diversa Corporation in the references. More editing is needed.


--Daniel Vaulot 13:10, 20 January 2007 (UTC)



This page was last modified 13:10, 20 January 2007.

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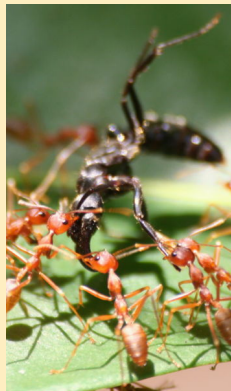
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Applications of wikis

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Collaborative organising/writing of ...

- ... all kinds of knowledge (Wikipedia)
- ... books (Wikibooks)
- ... labs/collaborations
- ... communities/projects
- ... documentations/manuals/how-tos
- ... conferences (barcamps)
- ... documents like papers, grants, patents, business plans etc.
- ... do I have to go on?



OpenWetWare – Sharing life science lab information

OpenWetWare Precedings : doi:10.1038/npre.2007.153.1 : Posted 21 June 2007

http://openwetware.org/wiki/Main_Page

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Main Page

OpenWetWare is an effort to promote the sharing of information, know-how, and wisdom among researchers and groups who are working in biology & biological engineering. Learn more about us [here](#).
If you would like edit access, would be interested in helping out, or want your lab website hosted on OpenWetWare, please [join us](#).

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Labs From around the world	Protocols Share techniques & more	Courses Host & view classes	Groups Host & view organizations

News Highlights

We're Hiring! Apply Now	BioSysBio 2007 Conference	Video Highlight Crisanti Lab	Lab Highlight Christophides Lab
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Media Spotlight

What's New

- 4/4: Steering committee meeting
Call in or [add items to the agenda](#).
- 3/9: Wiki Chat
You can now [chat](#) on the wiki!
- 2/7: OpenWetWare data dumps
[Download](#) full backup of OpenWetWare.
- 1/18: Steering committee meeting
Call in or [add items to the agenda](#).
- 12/23: OpenWetWare welcomes its

Plastics Wiki – Information about plastic science

http://plastics.inwiki.org/Main_Page

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PLASTICS
In wiki

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topics

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Main Page


Welcome to **Plastics Wiki**,
the free plasticopedia that anyone can edit.
1,297 articles in English

- processing
- materials
- suppliers
- industry
- products
- personalities
- equipment
- additives
- manufacturers

Processing

Plastics Molding

The



forming of a resin/fiber material into a solid mass of prescribed shape and size.

- Injection molding IM
- Compression molding CM
- Transfer molding TM
- Extrusion molding EX
- Blow molding BM
- Rotational molding RM
- Laminating LM
- Foam molding FM
- Rotomolding RM
- Vacuum plug assist molding VPAM
- Pressure plug assist molding PPAM

Plastic Thermoforming

Forming a thermoplastic sheet into a 3D shape by clamping and heating it to tender it soft.

- Vacuum forming
- Free blowing
- drape forming
- free blowing
- sheet bending

Plastic Extrusion


continuous process of melting a plastic material and forcing it through an orifice.

- Sheet Extrusion
- Profile Extrusion
- Pipe extrusion
- Blown Film Extrusion
- Cast Film Extrusion
- Foam Extrusion

Materials

Thermoplastics

- Acrylonitrile butadiene styrene (ABS)
- Acrylic
- Celluloid
- Cellulose acetate
- Ethylene-Vinyl Acetate (EVA)
- Ethylene vinyl alcohol (EVAL)
- Fluoroplastics (FE)
- Ionomers
- Liquid Crystal Polymer (LCP)
- Polyacetal (POM or Acetal)
- Polyacrylates (Acrylic)
- Polyacrylonitrile (PAN or Acrylonitrile)
- Polyamide (PA or Nylon)
- Polyamide-imide (PAI)
- Polycarbonate (PC)
- Polyketone (PK)
- Polyester
- Polyethylene
- Polyetheretherketone (PEEK)
- Polyetherimide (PEI)
- Polyethersulfone (PES)- see Polysulfone
- Polyethylenechlorinates (PEC)
- Polyimide (PI)
- Polylactic acid (PLA)
- Polymethylpentene (PMP)
- Polyphenylene oxide (PPO)
- Polyphenylene sulfide (PPS)
- Polyphthalamide (PPA)
- Polypropylene (PP)
- Polystyrene (PS)
- Polysulfone (PSU)
- Polyvinyl chloride (PVC)



WikiProteins – A semantic web wiki for protein annotation

Precedings : doi:10.1038/npre.2007.153.1 : Posted 21 Jun

http://www.wikiprofessional.info/

Technorati

Wiki **Proteins**
Knowledge at a glance.

"Real-time community annotation can play an important role in updating protein records." Prof. Amos Bairoch

"This is the first time that Wiki technology and semantic technology are combined for scientific purposes." Prof. Michael Ashburner

"I welcome this initiative because it enables investigators to collaborate in an open environment." Prof. Mark Musen

As cited in Nature News...

WikiProteins is the first Wiki Professional serving scientists working on biology and disease.

What's next?

- WikiAuthors
- WikiChemicals
- WikiClinical
- And... **Any WikiProfessional of your choice**

Wikis for Professionals are workspaces on the Semantic Web, enabling real-time knowledge exchange and exploration.

Demonstration

Click the button below to enter the demo.

[view demo](#)

This demo has been viewed 4520 times.

Keep me informed

First name: Middle initial(s):

Last name:

E-mail address:

[keep me informed](#)

Potentials and Challenges

Precedings : doi:10.1038/npre.2007.153.1 : Posted 21 Jun 2007

To solve/consider

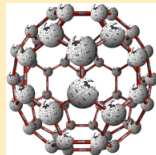
- Quality
- Motivate people / critical mass
- References
- Identity vs. Privacy
- Credits
- Licenses



Potentials and Challenges

Future

- More Semantic Web under the hood (“web of data”)
- More functionality (e.g. mind mapping)
- Wiki-Science as proposed by Kevin Kelly
 - “Paper” as wiki
 - Constantly improving
 - Many contributors
 - *Wiki-science will often be the first word on a new area. Some researchers will specialize in refining ideas first proposed by wiki-science.*



Online conferences

Why?

Talks/Conferences are an excellent way of communicating science, but usually reach only a small audience.

Advantages of online conferences

- Broader audience can be reached
- Cheaper
- Fewer time restrictions
- Save fuel and avoid CO₂-emissions

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An example - First Online EMBL PhD Symposium

Precedings : doi:10.1038/npre.2007.153.1 : Posted 21 June

http://onlinesymposium.predocs.org/ Technorati

Welcome to... Media — Firs... Roland Krau... Discussion a... Participant's ... Pedro Beltra...

First Online EMBL PhD Symposium
December 4 - 8, 2006
Life Sciences - Shaping the Future

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Welcome to the First Online EMBL PhD Symposium

Life Sciences - Shaping the future!

The goal of the First Online EMBL PhD Symposium was to provide a meeting place for the larger audience of people involved in life sciences to discuss the state-of-the-art and perspectives of development. The future of scientific communication itself was also discussed. In addition to scientific topics, we invited the participants to our career development forum that helped to shape a better future for scientists by sharing your experiences.

Rather than using a conventional meeting format with formal presentations and rather limited options for interaction between the invited speakers and the participants, we introduced an open internet-based platform for everyone interested to ensure that all opinions were heard. We invited prominent scientists to share their vision on development of life sciences in selected fields in a form of web-based presentations and invited everyone else to further discuss it and present their own views in a similar fashion.

The symposium is over but the content is now available for everybody.

First Online EMBL PhD Symposium

An example - First Online EMBL PhD Symposium

Facts

- Open for 5 days to registered participants; after that media available without restrictions
- Video, audio, presentation files
 - 14 pre-recorded talks
 - 2 pre-recorded interviews
 - 1 panel discussion
 - 1 talk discussion
- Participants could contribute by commenting on talks, in chats and with their own media.
- Implemented using the Plone CMS



http://onlinesymposium.predocs.org/media.1.html

Welcome to ... Media — F... Roland Krau... Discussion a... Participant's ... Pedro Beltra...

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- Neurobiology Session
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Media

[Up one level](#)

Different audio and video media are waiting for you and your opinions.

[Overview of the speakers](#)
Our external speakers

[Career Development Session](#)
What does it mean to be a scientist? Why would you choose to be a scientist? What are the job possibilities if you think that an occupation in science is yours? These and other questions we would like to address in our Career Development part of the symposium. By offering interesting material from various science experts and different angles we are aiming to highlight the plethora of possibilities that is opening up for everybody who wants to pursue a 'career' in science. The term 'career development' is related to many myths and promises and we try to uncover the 'false hopes' and bring you the reality of working as a scientist a little bit nearer. Among others we are featuring an exclusive interview with Prof. Dr. Tim Hunt who won the Nobel Prize 2001 for his outstanding discoveries of proteins regulating the cell cycle.

[Omics / Systems Biology Session](#)
Life is more than just the sum of its parts. Analyzing all entities of a biological system and their interactions are essential to the understanding of the mechanisms of biology. The computer based integration of many different types of biological experiments can lead to such new insights. In this session we will focus on some examples of systems biology.

[Neurobiology Session](#)
The nervous system is the basis of our emotions, our creativity and our conscious sense of ourselves. Understanding how it functions in order to "repair" it when it is "broken" is an intellectual challenge of the highest order. What is the progress on the molecular basis of mental illness and how can we develop better drugs for neurological disorders are some of the questions tackled in this session.


[Scientific Communication 2.0 Session](#)
How can the internet help you to do science more efficiently? Wikipedia and Google Maps are two prominent results of a quiet web revolution that is currently taking place. This new movement towards sharing and community contribution of knowledge, dubbed "Web 2.0", will deeply influence scientific communication and science in general - also yours.

[Participant's Contributions](#)

[Advertising Media](#)

[http://onlinesymposium.predocs.org/media/omics-session/roland-kraut](#) Technorati

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First Online EMBL PhD Symposium
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 - Omics / Systems Biology Session
 - Leroy Hood - Systems Biology and Systems Medicine: Dealing with Complexity
 - Stuart Kim - Systems biology of aging

Roland Krause - Shared components of protein complexes
 Up one level

Recorded exclusively for the Online Symposium, this screencast reports about protein complexes and the trickiness of catching them correctly. Roland Krause, group leader at the Max-Planck-Institute in Berlin, will be online in the chat on Wednesday to answer your questions.

[Information and Discussion](#)

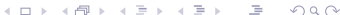
[Video - mov](#)
 27 MB

[Video - avi](#)
 32 MB

[Audio - ogg](#)
 12 MB

[Audio - mp3](#)
 22 MB

[Presentation - pdf](#)
 1.7 Ml




Panel discussion

Precedings : doi:10.1038/npre.2007.153.1 : Posted 21 Jun 2007

http://onlinesymposium.predocs.org/chat/discussion-about-the-influen... Technorati

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- Discussion with Roland Krause about protein-protein interaction networks

Discussion about the influence of Web 2.0 technologies on science and scientific communication

This is the recording of the open IRC discussion about the influence of Web 2.0 technologies on science and scientific communication. It took place at the second day of the symposium (Tuesday, December 5, 2006, 16:00 CET).

The participants were

- Euan Adie (stewtoo)
- Pedro Beltrao (pedrobeltrao)
- Phillip Gebhard (argonaut_lysine)
- Michal Karzynsky (karzynski)
- Roland Krause (rolandkrause)
- Michael Kuhn (michael_kuhn)
- Greg Tyrelle (greg_tyrelle)
- chaired by Konrad Förstner (konrad_foerstner)


16:02 <@konrad_foerstner> I would like to welcome all logged in participants and will shortly introduce the topic. Today scientific communication is done mainly by publishing in journals of professional publishing companies. In the last years a (small) fraction of scientist started to use newer web technologies like blogs as an additional channel. Let's try to have look at the future with the first questions: Do you think blogs will not only complement but substitute the classical way of publishing in

Poster session

Precedings : doi:10.1038/npre.2007.153.1 : Posted 21 Jun 2007

http://onlinesymposium.predocs.org/media/participants-contributions/ir Technorati

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 - Pedro Beltrao - Modularity and Evolvability

Participant's Contributions

Up one level

[Pedro Beltrao - Modularity and Evolvability](#)
This is a short presentation on modularity and evolvability in different evolving systems. It tries to argue for more transparent and modular scientific process.

[E.L. Willighagen - Distributing molecular information over the internet](#)
This poster introduces methods developed in the last 10 years that allow distributing molecular content over the internet, starting with Chemical MIME types and ending with chemistry enriched blogs and blog aggregators. During the conference I will add more and more detail to this overview, so questions are most welcome!

[Jean-Claude Bradley - The UsefulChem Project: Open Source Chemistry Research using Blogs and Wikis](#)
Here is my talk at the American Chemical Society on September 14, 2006 in San Francisco. This is a fairly condensed summary of the UsefulChem project, with plenty of examples on how we use blogs and wikis to do open source/open notebook science.

Poster session

Precedings : doi:10.1038/npre.2007.153.1 : Posted 21 Jun 2007

http://onlinesymposium.predocs.org/media/participants-contributions/p

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Pedro Beltrao - Modularity and Evolvability

This is a short presentation on modularity and evolvability in different evolving systems. It tries to argue for more transparent and modular scientific process.

Modularity and evolvability

Cells
Language
Software
Scientific process

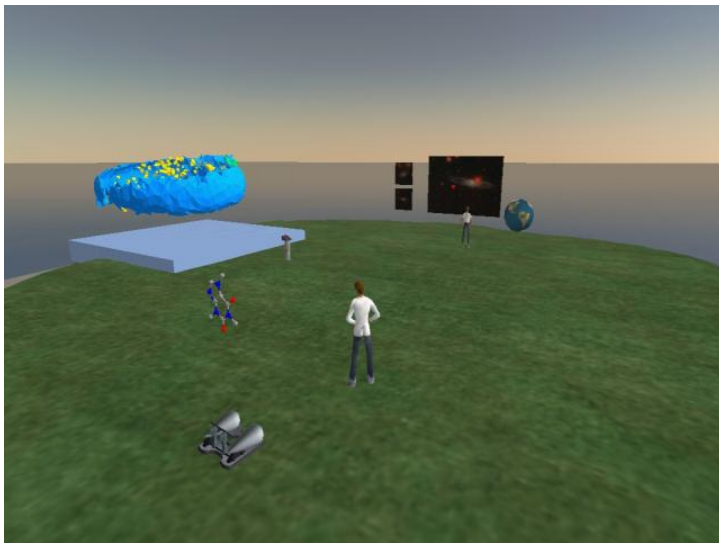
Pedro Beltrao
http://pbeltrao.blogspot.com

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obiology
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Wine and Cheese session

Precedings : doi:10.1038/npre.2007.153.1 : Posted 21 Jun 2007



Hanging out at *Nature's* Second Life island *Second Nature*

Lessons learned

Precedings : doi:10.1038/npre.2007.153.1 : Posted 21 Jun

- Hard to find people willing to give a talk
 - uncomfortable with the high accessibility (esp. for unpublished data).
 - Too techy?
 - No free trip
 - Many participants but most were passive
 - Very positive feedback from participants
- ⇒ Makes sense if you want to reach many people
- ⇒ Maybe use a hybrid approach



Alternative approaches

If you want to do this with less hassle

- Use (free) hosted web services
 - Blog
 - Video/Audio/Slide sharing platforms
 - IRC/XMPP server
 - Disadvantage
 - less customizable
 - not everything under one roof
- May be soon included in social network software



Take home messages

- Web 2.0 has a deep impact on scientific communication and collaboration
- Wikis are excellent for collaborative work
- Online conferences are a cheap way to reach a broad audience
- To solve/consider: manpower, quality, identity, credits
- Future: More functions and semantic web technologies used

Thanks for your attention.

Any questions?

The presentation slides are available on my web site:

<http://konrad.foerstner.org>

References and Sources

Reference

<http://wikipedia.org>
[http://en.wikipedia.org/wiki/RSS_\(file_format\)](http://en.wikipedia.org/wiki/RSS_(file_format))
<http://network.nature.com>
<http://www.xing.com>
<http://del.icio.us>
<http://www.hubmed.org>
<http://www.postgenomic.com>
<http://microformats.org>
<http://www.blogger.com>
<http://openwetware.org>
http://plastics.inwiki.org/Main_Page
<http://www.wikiprofessional.info>
http://www.edge.org/3rd_culture/kelly06/kelly06_index.html
<http://onlinesymposium.predocs.org>
<http://plone.org>
http://blogs.nature.com/wp/nascent/2006/10/berkman_second_nature_and_the.html

Image sources

The School of Athens – http://commons.wikimedia.org/wiki/Image:Sanzio.01.Plato_Aristotle.jpg
Spider Web – http://commons.wikimedia.org/wiki/Image:Water_drops_on_spider_web.jpg
Wiki Wiki – <http://commons.wikimedia.org/wiki/Image:WikiWiki.jpg>
Ants – <http://commons.wikimedia.org/wiki/Image:Oecophylla.jpg>
Marmot warning – <http://commons.wikimedia.org/wiki/Image:WarningMarmotAustria.JPG>
Terracota army – http://commons.wikimedia.org/wiki/Image:Xian_guerreros_terracota_detalle.JPG
Japanese Classroom – <http://commons.wikimedia.org/wiki/Image:JapaneseClassroom.jpg>
Hammock – <http://www.flickr.com/photos/emzee/139794246/>
Web2.0 – extended mindcloudmap - <http://flickr.com/photos/kosmar/62381076/>

About this document

Created in \LaTeX using the *beamer* class, pdf \LaTeX and *emacs*.
Gimp and firefox were used to take screen shots of websites.
All these programs run on *OpenBSD*.

<http://www.latex-project.org>
<http://latex-beamer.sourceforge.net>
<http://www.tug.org/applications/pdftex>
<http://www.gnu.org/software/emacs>
<http://www.mozilla.com/en-US/firefox/>
<http://www.gimp.org/>
<http://www.openbsd.org>



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