

# Current Status of Open Access: The Value of OA

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**Peter Banks**  
**Banks Publishing**

Council of Science Editors Annual Meeting  
May 21, 2007

# Routes to Freer Access to Research Information

|                                     |  |
|-------------------------------------|--|
| Author-pays OA                      | PLoS, BMC, Hindawi                             |
| Institutional repository            | PubMed Central                                 |
| Free access after delay*            | Highwire journals                              |
| Optional open access                | Many publishers                                |
| Hybrid (free access, subscriptions) | <i>J Clin Invest,</i><br><i>J Postgrad Med</i> |
| Preprint servers                    | arXiv  |

\* Many medical titles blue, some non-medical titles green

# All That Glitters is Green?

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Steven Harnad's proposed return from OA:

**Cost:** Negligible

**Value:** Doubles research impact

**How:** Mandate Green OA (deposit of accepted papers in institutional repositories)

**When:** Now

# Hypothesized Benefits of Green OA

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- **For researchers:** Greatly increases the impact of investing in research by accelerating the spread and application of research findings.
- **For clinicians:** Enables physicians and others to read new clinical research and apply findings in clinical practice.
- **For patients and the public:** Increases public understanding of science and medicine and enables patients to find new and better treatment options.

# Points of Agreement...and Questions

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All parties support freer access to information to accelerate research, care, and patient empowerment, but

- 1) Is OA the best way to achieve these goals?
- 2) What other Web-based tools might be more effective?
- 3) Which organizations (government agencies or nonprofit or for-profit entities) are best positioned to develop new Web-based tools?

# Knowledge Environments and Research Networking Sites

## *Science* Magazine's Signal Transduction Knowledge Environment (STKE)

The screenshot shows the Science Magazine website with the STKE (Signal Transduction Knowledge Environment) section highlighted. The top navigation bar includes links for AAAS, SUBSCRIBE, FEEDBACK, and a search bar containing 'STKE'. Below this, a secondary navigation bar lists 'Magazine', 'News', 'STKE', 'Careers', 'Multimedia', 'Collections', 'Site Help For: Readers', and a 'GO' button. The STKE section features a red header with the 'stke' logo and the text 'Signal Transduction Knowledge Environment'. A horizontal menu below the header lists various categories: 'Issue Archive', 'Literature', 'Community', 'Resources', 'Database of Cell Signaling', 'My STKE', and 'About STKE'. The main content area is titled 'In the Current Issue' and includes a search box on the left, a featured article 'Reversing the Signal to Stimulate Insulin Secretion' with a blue pollen tube image, and an 'Editorial Guide' section.

Science AAAS SUBSCRIBE FEEDBACK SEARCH: STKE PETER BANKS Alerts | A

AAAS Magazine News STKE Careers Multimedia Collections Site Help For: Readers GO

stke Signal Transduction Knowledge Environment

Issue Archive Literature Community Resources Database of Cell Signaling My STKE About STKE

Home > STKE Home

Search STKE

Enter Keyword

Full text

GO

Advanced >

Access to STKE

Access to the full text of articles in Perspectives, Reviews, Protocols, and the Virtual Journal, and use of MY STKE personalization tools requires an STKE subscription. All other STKE features are available free with registration.

**In the Current Issue** 24 April 2007 (Iss)

**Editors' Choice**

**Reversing the Signal to Stimulate Insulin Secretion**  
I. Konstantinova *et al.*, *Cell* 129, 359–370 (2007).  
R. N. Kulkarni *et al.*, *Cell* 129, 241–243 (2007).  
[Summary](#)

**plus...**

- > [Full List of This Week's Summaries](#)
- > [Featured in \*Science\* Magazine](#)

**Editorial Guide**

**Focus Issue: From Egg to Egg—Cell Signaling in Germ Cells**  
Elizabeth M. Adler and Nancy R. Gough  
[Abstract](#) | [Full Text](#) | [PDF](#)

*Growing pollen tube*

> [Image details](#)

> [Current Issue Table of Contents](#)

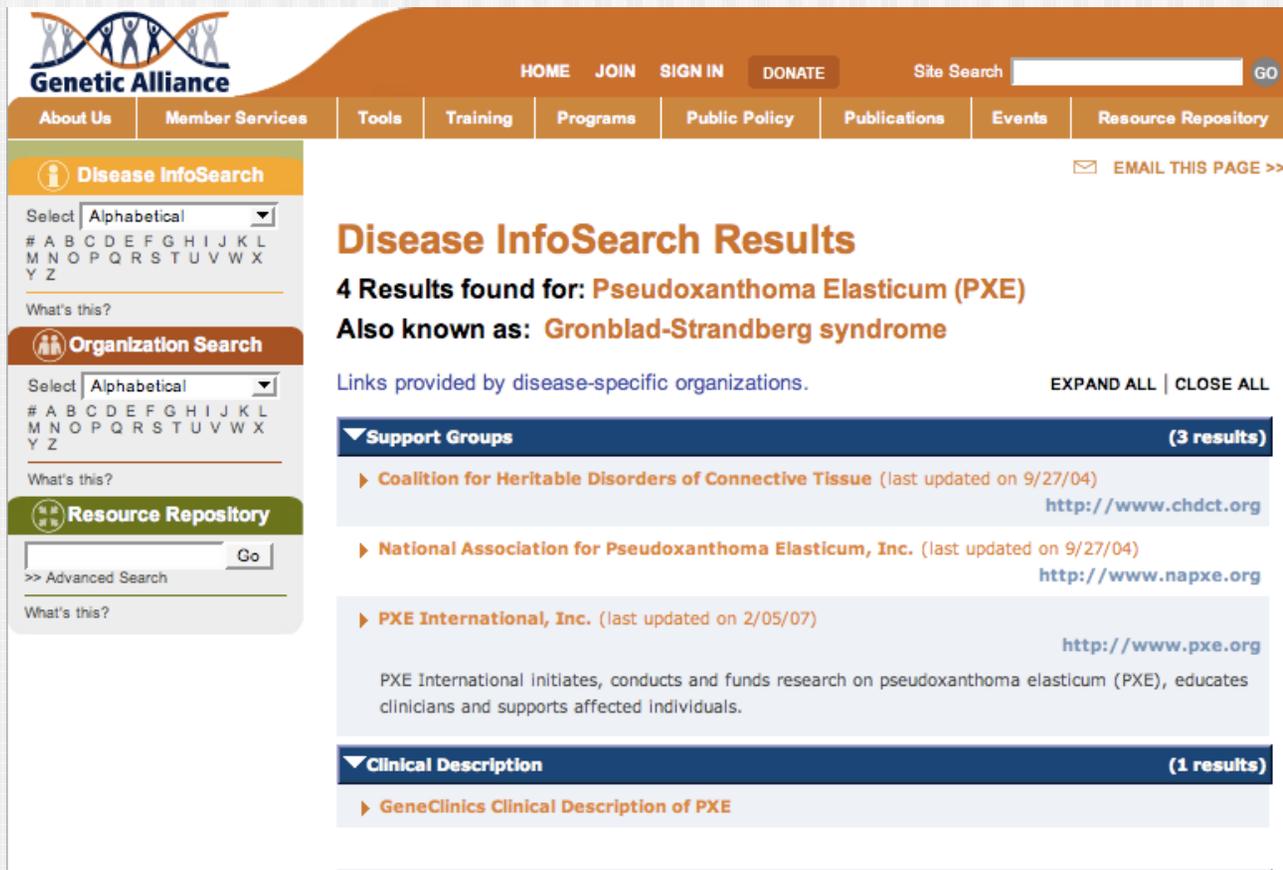
# Portals to Evidence-Based Medical Standards

## *BMJ* Clinical Evidence and Best Treatments

The screenshot displays the BMJ Clinical Evidence website interface. At the top, there is a navigation bar with links for Home, Log out, and Help. Below this, the site title "BMJ Clinical Evidence" is prominently displayed, along with dropdown menus for "Sections" and "Full review list", and a search box. A secondary navigation bar includes links for Conditions, Subscribe, EBM resources, About us, and Contact us. The main content area is titled "Endocrine and metabolic Disorders" and features a review for "Diabetic nephropathy" by Michael Shlipak. A horizontal menu below the title offers options: Interventions, Key points, About this condition, Updates (4), Guidelines (5), References, and Your responses. A light blue box suggests reading the key points. The main text explains the search process for systematic and rigorous answers. A section titled "What are the effects of treatments in people with type 1 diabetes and early nephropathy?" lists "Beneficial" treatments, including Angiotensin converting enzyme inhibitors and Glvcaemic control. On the right side, there are links for "Print page" and "Print re", a "Updates (new)" section stating that up-to-the-minute updates are provided, and a "Respond to this review" section encouraging user feedback.

# Portals to Patient Information and Educational Resources

## Genetic Alliance Disease Information Portal



The screenshot displays the Genetic Alliance website interface. At the top, there is a navigation bar with links for HOME, JOIN, SIGN IN, and DONATE, along with a site search box. Below this is a secondary menu with categories like About Us, Member Services, Tools, Training, Programs, Public Policy, Publications, Events, and Resource Repository. The main content area is titled "Disease InfoSearch Results" and shows 4 results for "Pseudoxanthoma Elasticum (PXE)", also known as "Gronblad-Strandberg syndrome". The results are organized into sections: "Support Groups" (3 results) and "Clinical Description" (1 result). The "Support Groups" section lists three organizations: Coalition for Heritable Disorders of Connective Tissue (CHDCT), National Association for Pseudoxanthoma Elasticum, Inc. (NAPXE), and PXE International, Inc. The "Clinical Description" section lists the GeneClinics Clinical Description of PXE.

**Genetic Alliance**

HOME JOIN SIGN IN DONATE Site Search  GO

About Us Member Services Tools Training Programs Public Policy Publications Events Resource Repository

**Disease InfoSearch** EMAIL THIS PAGE >>

Select Alphabetical  
# A B C D E F G H I J K L  
M N O P Q R S T U V W X  
Y Z

What's this?

**Organization Search**

Select Alphabetical  
# A B C D E F G H I J K L  
M N O P Q R S T U V W X  
Y Z

What's this?

**Resource Repository**

Go  
>> Advanced Search  
What's this?

### Disease InfoSearch Results

4 Results found for: **Pseudoxanthoma Elasticum (PXE)**  
Also known as: **Gronblad-Strandberg syndrome**

Links provided by disease-specific organizations. EXPAND ALL | CLOSE ALL

#### Support Groups (3 results)

- ▶ **Coalition for Heritable Disorders of Connective Tissue** (last updated on 9/27/04)  
<http://www.chdct.org>
- ▶ **National Association for Pseudoxanthoma Elasticum, Inc.** (last updated on 9/27/04)  
<http://www.napxe.org>
- ▶ **PXE International, Inc.** (last updated on 2/05/07)  
<http://www.pxe.org>  
PXE International initiates, conducts and funds research on pseudoxanthoma elasticum (PXE), educates clinicians and supports affected individuals.

#### Clinical Description (1 results)

- ▶ **GeneClinics Clinical Description of PXE**

# Evidence for Value of OA

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Two hypothesized lines of evidence for the value of OA to researchers:

- Increase in rate and speed of citation, supposedly indicating broader and more rapid spread of knowledge that will stimulate additional research
- Researchers' self-reports that their access to research articles is limited, and that open access would remove barriers to knowledge and innovation

# Citation Advantage for Self-Archived Manuscripts

Openly accessible papers are cited more often, but reason is unclear: Are self-archived articles more likely to be cited, or are heavily cited articles more likely to be self-archived because they are of higher quality, or do they gain additional citations from earlier posting?

- Harnad and colleagues argue access itself promotes citation ([opcit.eprints.org/oacitation-biblio.html](http://opcit.eprints.org/oacitation-biblio.html)).
- Henneken et al. ([arxiv.org/abs/cs/0604061](http://arxiv.org/abs/cs/0604061)), Moed ([arxiv.org/abs/cs.DL/0611060](http://arxiv.org/abs/cs.DL/0611060)), and Davis and Fromerth ([arxiv.org/abs/cs.DL/0603056](http://arxiv.org/abs/cs.DL/0603056)) attribute citations to higher quality or earlier posting.
- Ongoing prospective study by Phil Davis may provide answers.

# Citation Advantage for Self-Archived Manuscripts—New Doubts

“Do Open Access Articles Have Greater Citation Impact? A critical review of the literature,” by Ian Craig, Andrew Plume, Marie McVeigh, James Pringle and Mayur Amin, *Journal of Informetrics* (in press), available at [www.publishingresearch.net](http://www.publishingresearch.net)

New comprehensive review of recent bibliometric literature finds little evidence for an OA effect on article citation rates. When effects of quality and earlier posting are considered and there is greater control for disciplinary differences and publication dates, the relationship between open access and citation almost disappears.

# Evidence That Researchers' Access Is Limited

- Rowlands, Nicholas, and Huntingdon (2004): 61% of senior authors can get hold of most or all of the titles they need; 77% said that access was becoming 'a lot' or 'a little' easier.
- Rowlands and Nicholas, New Journal Publishing Models (2005): 74% of researchers thought that high prices made it difficult to access the journal literature—but only 26% made it a point to publish in affordable journals.
- EPS UK Scholarly Journals 2006 Baseline Report: Around 50% of all researchers, regardless of discipline, experience problems with access.

# Value of OA to Researchers Remains Uncertain

Rowlands and Olivieri, PRC Summary Paper, “Journals and Scientific Productivity” (2006) finds

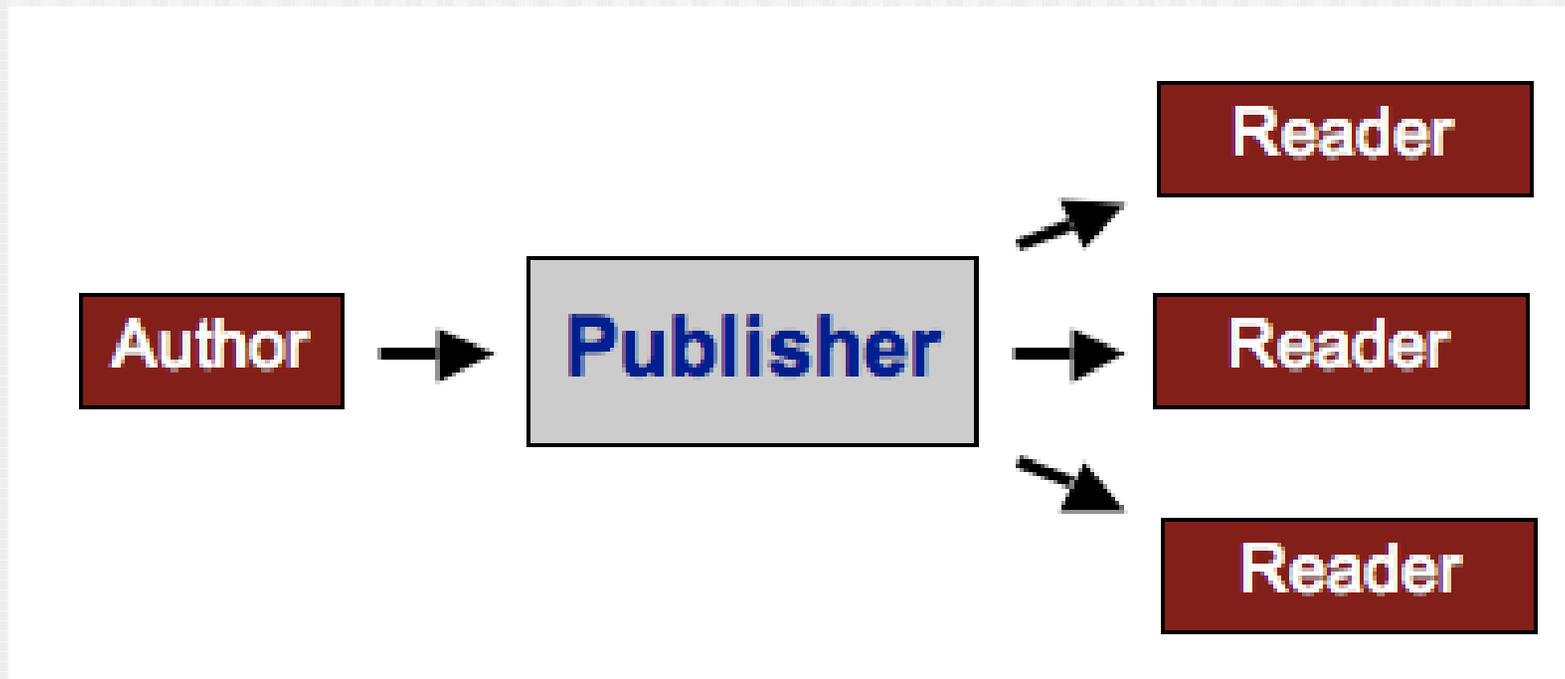
- Biggest single productivity issue facing biomedical researchers is funding.
- Researchers do not consider that problems in accessing the journal literature are a significant barrier to their work.
- 97% of researchers believe that they are very up-to-date with the current literature in their areas.

# Value of OA to Researchers Remains Uncertain

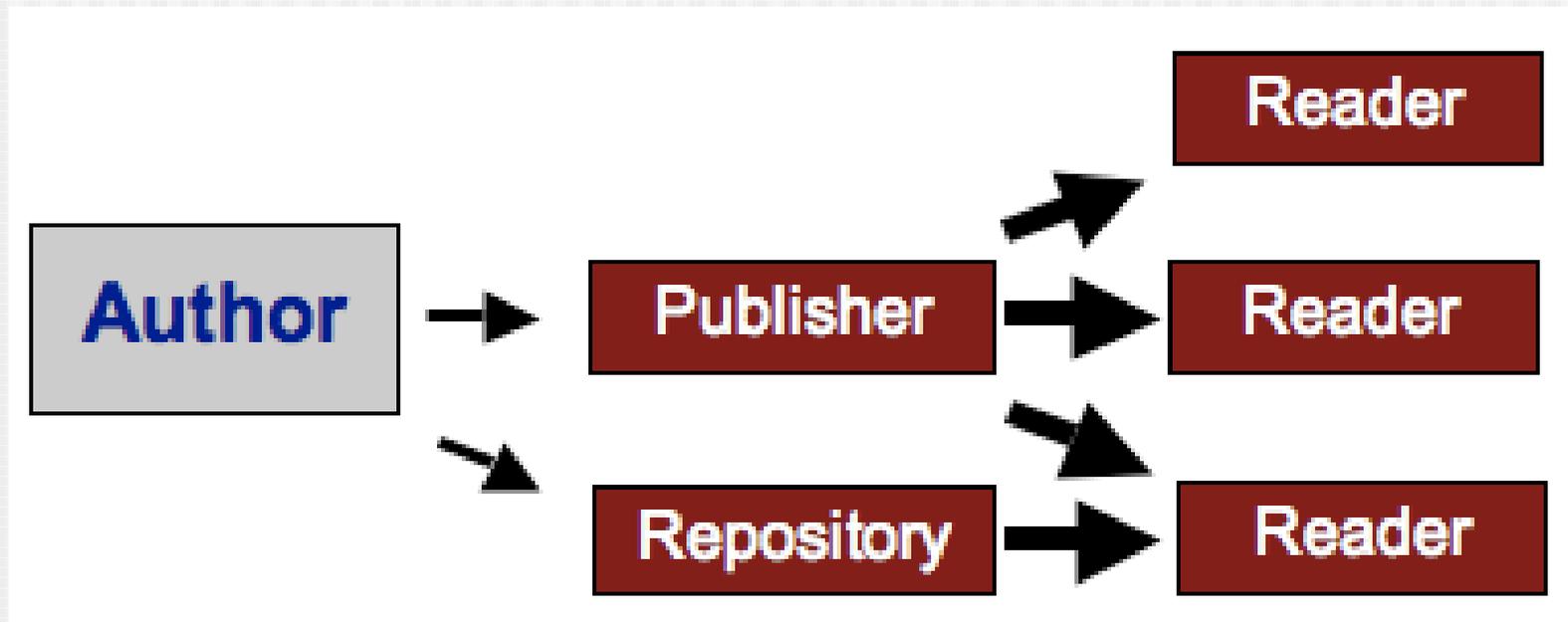
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- Higher rate of citation based on usage, even if confirmed, would not prove that OA accelerates research.
- Reports of researchers' complaints do not prove that research is inhibited by limited journal access. Indeed, usage reports suggest at least those researchers in major research institutions do not have significant access problems that limit research.
- Will need qualitative, descriptive studies to tease out how information can be presented to stimulate research.

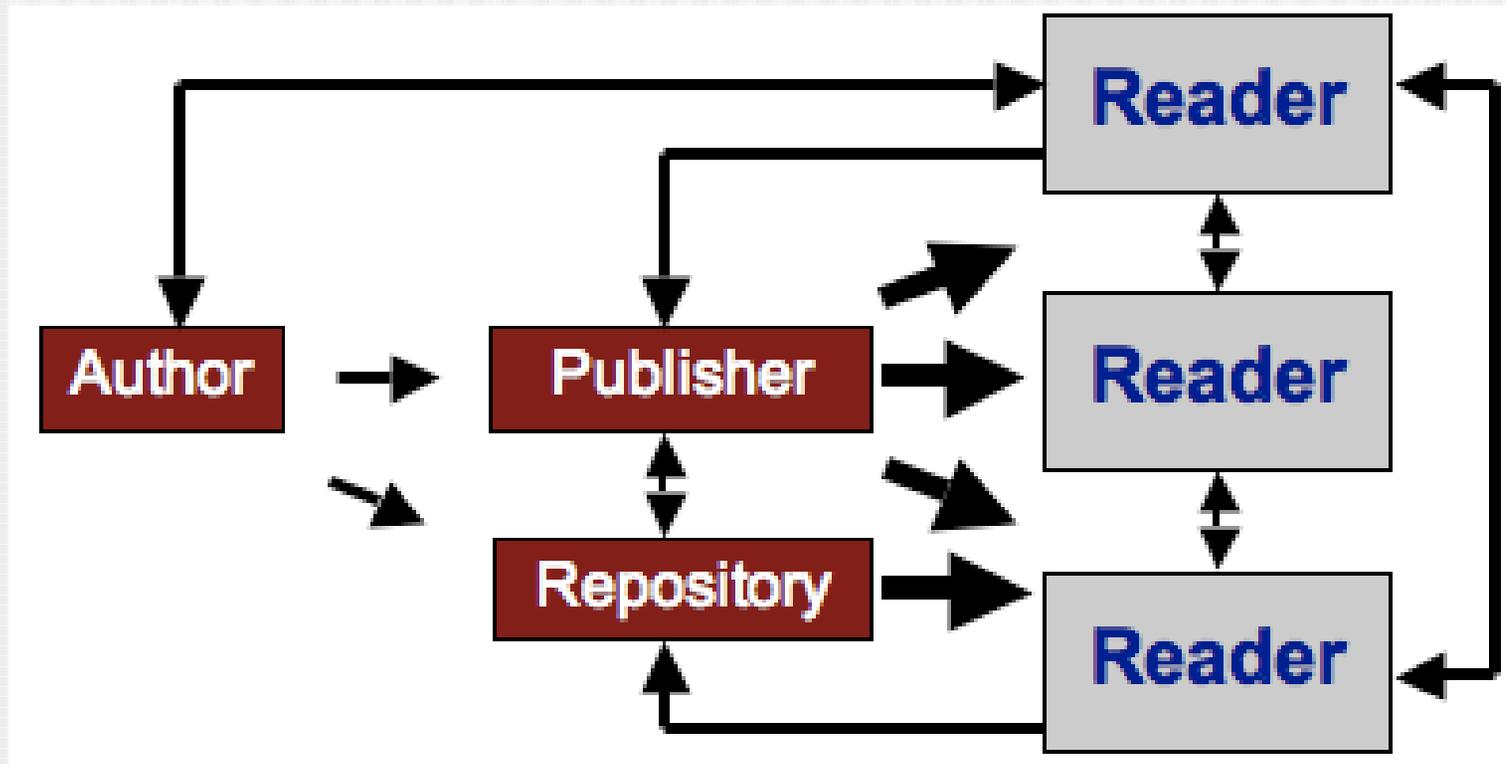
# Subscription-Based Information Flow



# OA-Based Information Flow



# Intellectual Network Information Flow



# Scholarly Web 2.0 Applications: Private Organizations, Not Government

Sponsored  
social and  
scientific  
networking  
sites

The screenshot shows the 'Community' page of the Science Signaling Community. On the left, there are navigation menus for 'In Community' (Directory, Forums, E-Letters), 'Search STKE' (with a search bar and filters for 'All of Science's STKE' and 'Only Community'), 'Help & Feedback' (STKE Help, Feedback), and 'My STKE' (My Folders, My Alerts, My Display Settings). The main content area is titled 'Community' and includes a 'Directory' section with contact information for Alex Almasan and Coralie A. C. Carraway, and a 'Forums' section with two discussion threads titled 'Can Mesoscopic Models Test Spatial Mechanisms of Cell Signaling?' by Upinder Bhalla and Julian Shillcock.

# Scholarly Web 2.0 Applications: Private Organizations, Not Government

CiteULike lets researchers and clinicians share, store, and organize papers they are reading.

**citeulike** 

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Article title  Search

#### Navigation

- [Home](#)
- [Log in](#)
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- [Discussion list](#)

#### Journals

- [Browse current issues](#)

#### Groups

- [View group](#)

#### Experimental Features

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## Everyone's library

Some recent papers posted to CiteULike - all mixed together.

- [Revealing static and dynamic modular architecture of the eukaryotic protein interaction network](#)  
*Mol Syst Biol*, Vol. 3 (24 April 2007)  
by [Komurov K](#), [White M](#)  
posted to [eukaryota](#) [interaction network](#) [protein](#) by [zwang](#) as ★★★★★ on 2007-04-24 17:07:07
- [Densities of Floor-Dwelling Frogs and Lizards in Lowland Forests of Southeast Asia and Central America](#)  
*The American Naturalist*, Vol. 115, No. 6. (1980), pp. 761-770.  
by [Inger RF](#)  
posted to [frog](#) [neotropics](#) by [destanton](#) as ★★ on 2007-04-24 17:04:04

#### Everyone's Tags

Most active tags on CiteULike

Filter:

[algorithm](#) [algorithms](#)  
[analysis](#) [annotation](#)  
[attention](#) [auditory](#)  
[bayesian](#)  
[bioinformatics](#) [biology](#)  
[cancer](#) [cell](#)  
[classification](#)  
[clustering](#) [coding](#)  
[collaboration](#)  
[communication](#)

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# Meanwhile, Congress Fiddles With OA & Research Funding Burns

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## The NIH budget

- Has remained flat since 2003.
- Has not kept pace with biomedical inflation for four years.
- Can support acceptance of a little more than 20% of applications.
- Will likely support smaller research grants than in the past.
- Would cause funding for the National Cancer Institute to fall by \$40 million if passed as proposed.

## Value of OA for Clinicians

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- It may take as long as one or two decades for original research to be put into routine clinical practice.
- A 1998 review of published studies on the quality of care: Only about three of five patients with chronic conditions received recommended care.
- Most examples of success in translating research into practice have involved inpatient settings—not outpatient settings.

# Value of OA for Clinicians

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Translating research into practice requires more access to information, but also

- Provider reminder systems
- Local opinion leaders
- Computerized decision-support systems
- Financial incentives

Success may be influenced by the care setting, the patient, organizational factors, and the desired behavior change—no one solution works in all settings.

# New Web Strategies to Improve Practice Patterns for Clinicians

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There is little evidence that OA by itself can change clinical practice. Instead, we should explore new ways in which the Web can educate providers and improve clinical care. These may involve not only Web-based, but also print- and especially PDA-based tools.

# RSS Feeds



Home | News | CME | Conferences | Resource Center | Job Center | Help  
HemeOncLinx Home > MDLinx RSS Feeds

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in Advanced CTCL

Roll over  
to learn

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- Sign Up For Free Newsletter

### Hematology-Oncology RSS News Feeds

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|  |                     |                             |                                 |                          |                          |
|--|---------------------|-----------------------------|---------------------------------|--------------------------|--------------------------|
| <b>HemeOncLinx (all news)</b>                | <a href="#">XML</a> | <a href="#">+ MY YAHOO!</a> | <a href="#">+ Add to Google</a> | <a href="#">+ MY AOL</a> | <a href="#">+ MY MSN</a> |
| <b>Subspecialties of Hematology-Oncology</b> |                     |                             |                                 |                          |                          |
| Alternative Therapies                        | <a href="#">XML</a> | <a href="#">+ MY YAHOO!</a> | <a href="#">+ Add to Google</a> | <a href="#">+ MY AOL</a> | <a href="#">+ MY MSN</a> |
| Anemia/Polycythemia                          | <a href="#">XML</a> | <a href="#">+ MY YAHOO!</a> | <a href="#">+ Add to Google</a> | <a href="#">+ MY AOL</a> | <a href="#">+ MY MSN</a> |

# Knowledge Environments

AHA Communities  
**LEARNING LIBRARY**

-Select a Community- **Go** Association...  
A Division of American Heart Association Association...  
Learn and Live...

My AmericanHeart

Library Research Awards Member Services Conferences and Education Practice Guidelines Patient Information Support Our

SEARCH [Advanced Search](#)

## Metabolic Syndrome Community

### HA Journals

-  [Arteriosclerosis, Thrombosis, and Vascular Biology](#)
-  [Circulation](#)
-  [Circulation Research](#)
-  [Hypertension](#)
-  [Stroke](#)

### Welcome to the AHA Metabolic Syndrome Community



**AHA Metabolic Syndrome Community Editor  
Neil Stone, MD**

Welcome to our website. I want to underscore the word "our" because the purpose of this AHA website is to help bring together a community of health professionals interested in lipids and metabolic issues as they pertain to cardiovascular prevention and treatment. We've given a lot of thought to making this website a valued health resource. We've also added commentaries designed to put new studies and important advisories or appropriate AHA statements in perspective. This is important because most often before new knowledge can be used effectively in the clinic, it needs to be considered carefully in terms of quality and reproducibility, contrasted with prior knowledge, and on a practical note, thought about in terms of applicability and usefulness to the various populations that our readers serve. This website has the promise to help achieve this.

### See also:

- [Lipid Management Community](#)
- [Women's Health Community](#)

**SIGN IN**

Welcome **KEVIN FITZPATRICK**  
[View/Update Profile](#) | [Logout](#)

*This site is made possible through an educational grant from AstraZeneca*

**WEB UPDATE**

[CLICK HERE](#)

for the latest efficacy data

### Editorial Commentaries

["If I had 8 days to chop down a tree, I'd spend 6 days sharpening](#)

ther Journals

# Clinical Practice Standards

## Online access



### **BMJ Clinical Evidence Online**

Your trusted and effective source of medical evidence for clinical decisions.



### **BMJ Clinical Evidence Concise and Online**

Combining the benefits of online access to the full edition with a useful printed handbook of key information, for a special package price.

## Other ways to get *BMJ Clinical Evidence*



### **BMJ Clinical Evidence Concise**

A useful condensed print version of key information from our full *BMJ Clinical Evidence* online service for easy reference when you are away from your computer.



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# Evidence-Based Medical Summaries



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# Value of OA for Patients: The Claim

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“...all Americans will be positively affected as a result of this bill: Patients diagnosed with a disease or condition will be able to use the Internet to access the full text of articles containing the latest information on treatment and prognosis... The Internet gives the homemaker in Houston the ability to find volumes of information about a recent medical diagnosis given to a family member.”

Sen. John Cornyn, Federal Research Public Access Act,  
Floor Speech, May 2, 2006

# Value of OA for Patients: The Reality

At median follow-up of 68 months (range 1–93), treatment-related adverse events occurred significantly less often with anastrozole than with tamoxifen (1884 [61%] vs 2117 [68%];  $p < 0.0001$ ), as did treatment-related serious adverse events (146 [5%] vs 277 [9%];  $p < 0.0001$ ) and adverse events leading to withdrawal (344 [11%] vs 442 [14%];  $p = 0.0002$ ). Patients given anastrozole had significantly fewer overall events for the Global Index of the Women's Health Initiative (744 [24%] vs 851 [27%]; hazard ratio 0.85 [95% CI 0.77–0.94],  $p = 0.001$ ) and the Global Index of Disease-Free Survival and Serious Adverse Events (1453 [46%] vs 1594 [51%]; 0.88 [0.82–0.94];  $p = 0.0004$ ).

# Value of OA for Patients: The Reality



## **Median household income, 2003:**

\$43,318; Black, \$30,000;  
Hispanic, \$33,000; Non-Hispanic White  
\$48,000; Asian, \$55,000

**Poverty:** 35.9 Million Americans (12.9%)  
live in poverty.

**Race:** Among 281 million Americans,  
35.5 million (12.5%) are Hispanic/Latino  
and 34.7 (12.3%) are African American.

**Uninsured:** 47 million in 2003, up about  
7 million since 2000.

# Value of OA for Patients

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Despite claims that OA will help all patients find relevant health and treatment information, it is of most use to those who already have access to good patient-oriented Web information, including those who are

- Caucasian
- Affluent
- Well-educated
- Equipped with high-speed Internet access at home

# Value of OA for Patients

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People most at risk of poor health outcomes from cancer and other serious health problems are members of underserved populations, including those who

- Have low socioeconomic status.
- Have low health literacy (90 million adults in U.S.).
- Are elderly.
- Belong to marginalized ethnic and minority groups.
- Have limited formal education.
- Have limited access to relevant health information, especially information widely available over the Internet.

# The Digital Divide in Health Care

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“The digital divide is a special problem in health care... Currently, substantial barriers prevent major segments of the population from seeking and/or using online health information.”

Gary L. Kreps, PhD

Disseminating relevant health information to underserved audiences:  
implications of the Digital Divide Pilot Projects  
*J Med Libr Assoc.* 2005 October; 93(4 Suppl): S68–S73.

# What Really Works in Health Education for Patients

- Accurate, up-to-date research information
- Materials presented in a patient-accessible format, with attention to the user's educational level, cultural and ethnic background, information needs, and psychological and cognitive state
- Hope and reassurance
- Networking with other patients who have similar conditions
- Connection with health professionals and resources
- Information on preparing for medical tests and procedures, including explanations of medical terminology and evidence-based treatment approaches

# patient**INFORM**

ACCESS + INTERPRETATION = UNDERSTANDING + EMPOWERMENT

- Makes available selected clinical research of most relevance to patients
- Delivers information through voluntary health association Websites tailored to the educational, economic, and cultural needs of the target audience
- Within health association sites, linked to other health resources and tools
- Is not intended as an alternative to open access
- Can be linked to information and resources to promote access to care and interaction with health professionals

ACS :: Breast Cancer Studies Show Survival Benefit When Herceptin Used Early - Microsoft Internet Explorer

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Address [http://www.cancer.org/docroot/NWS/content/NWS\\_1\\_1x\\_Breast\\_Cancer\\_Studies\\_Show\\_Survival\\_Benefit\\_When\\_Herceptin\\_Used\\_Early.asp](http://www.cancer.org/docroot/NWS/content/NWS_1_1x_Breast_Cancer_Studies_Show_Survival_Benefit_When_Herceptin_Used_Early.asp) Go

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## Herceptin 'Revolutionary' for Breast Cancer

### Studies Confirm Survival Benefit When Drug Used Early

**Article date:** 2005/10/20

In May 2005, oncologists attending the annual meeting of the American Society of Clinical Oncology heard presentations about the breast cancer drug [Herceptin \(trastuzumab\)](#) that many considered a treatment breakthrough. Researchers had found that using Herceptin early in the course of [breast cancer](#) could cut recurrences in half and improve survival for women with a particularly aggressive form of the disease.

Now those studies have been published, giving doctors and patients more details about the advantages and side effects of this new treatment strategy. They appear in this week's issue of the [New England Journal of Medicine](#) and are again being hailed by experts.

"Clearly, the results reported in this issue of the journal are...

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NEJM -- Trastuzumab after Adjuvant Chemotherapy in HER2-Positive Breast Cancer - Microsoft Internet Explorer

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Address <http://content.nejm.org/cgi/content/abstract/353/16/1659> Go

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**ORIGINAL ARTICLE**

[◀ Previous](#)     
 Volume 353:1659-1672     
 October 20, 2005     
 Number 16     
 [Next ▶](#)

## Trastuzumab after Adjuvant Chemotherapy in HER2-Positive Breast Cancer

*Martine J. Piccart-Gebhart, M.D., Ph.D., Marion Procter, M.Sci., Brian Leyland-Jones, M.D., Ph.D., Aron Goldhirsch, M.D., Michael Untch, M.D., Ian Smith, M.D., Luca Gianni, M.D., Jose Baselga, M.D., Richard Bell, M.D., Christian Jackisch, M.D., David Cameron, M.D., Mitch Dowsett, Ph.D., Carlos H. Barrios, M.D., Günther Steger, M.D., Chiun-Shen Huang, M.D., Ph.D., M.P.H., Michael Andersson, M.D., Dr.Med.Sci., Moshe Inbar, M.D., Mikhail Lichinitser, M.D., István Láng, M.D., Ulrike Nitz, M.D., Hiroji Iwata, M.D., Christoph Thomssen, M.D., Caroline Lohrisch, M.D., Thomas M. Suter, M.D., Josef Rüschoff, M.D., Tamás Sztó, M.D., Ph.D., Victoria Grooten, M.Sc., Carol Ward, M.Sc., Carolyn Straehle, Ph.D., Eleanor McFadden, M.A., M. Stella Dolci, Richard D. Gelber, Ph.D., for the Herceptin Adjuvant (HERA) Trial Study Team*

**ABSTRACT**

*Background* Trastuzumab, a recombinant monoclonal antibody against HER2, has clinical activity in advanced breast cancer that overexpresses HER2. We investigated its efficacy and safety after excision of early-stage breast cancer and completion of chemotherapy.

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## The Distinctive Nature of HER2-Positive Breast Cancers

*Harold J. Burstein, M.D., Ph.D.*

Breast cancer is not a single disease but a group of several important tumor subtypes, each with a different natural history and each requiring a different treatment. Overexpression of HER2 (which derives its name from human epidermal growth factor receptor 2) defines one of these unique subtypes. The *HER2/neu* gene is a member of a family of genes encoding transmembrane receptors for growth factors, including the epidermal growth factor receptor (EGFR), HER2, HER3, and HER4. The intracellular domain of HER2 has tyrosine kinase activity that regulates important aspects of the physiology, growth, and differentiation of cells.<sup>1,2</sup> Extracellular domains of the HER2 protein interact with HER family members, allowing HER2 to serve as a coreceptor and to facilitate signal transduction as part of a heterodimer complex that forms after ligand binding. There is no known ligand for HER2 itself, however, suggesting that the primary role of HER2 is to modulate signals after ligand binding to other HER-family receptors.

Amplification of the *HER2/neu* oncogene and related genetic elements in the amplicon on chromosome 17 causes a marked

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## trastuzumab

**Trade Name(s):**  
Herceptin

**Type of Drug:**  
Trastuzumab is a monoclonal antibody which belongs to the general class of man-made substances called biologic response modifiers. It is used to treat breast cancer.

**How Drug Works:**  
Trastuzumab (monoclonal antibody) is a protein that fits like a lock and key with a protein on certain breast cancer cells. The protein (antigen) on the breast cancer cells is the Epidermal Growth Factor Receptor, called HER-2. Once it attaches to the cells, it brings other immune cells to help kill the cancer cells. It is usually given with chemotherapy.

**How Drug Is Given:**  
Trastuzumab is given by intravenous infusion over 90 minutes at first, then in later treatments, over 30 minutes.

*Read the following information. If you do not understand it or if any of it causes you special concern, check with your doctor.*

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# Breast Cancer Survivor Channels Anger into Action

## Advocacy Group Helps Young Women Cope with Diagnosis

Article date: 2004/10/01



"The good news is, the world is a very different place today than it was 6 years ago if you're a young woman with breast cancer."

At age 39, Randi Rosenberg is relishing a role she never thought she'd play: that of new mom.

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Hello and welcome! You've entered a vibrant community established by people just like you whose lives have been touched by cancer. We hope you'll find strength and inspiration from our personal stories, discussions and expressions of caring.

### Love Is in the Air!

As Valentine's Day approaches, it's worth asking yourself, "Who more than a cancer survivor or a loved one truly "gets" the importance of love, connection, and intimacy?" Many of us have a thing or two to share on this topic! We invite you to read some highlights from the [CSN Member Web Pages](#). Even better, we invite you to [submit your own story](#).

If you're considering treatment for any kind of cancer, register for your [free cancer treatment decision tools](#), brought to you by the American Cancer Society and NexCura.

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# Conclusions

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- The value of OA is uncertain for researchers, very limited for clinicians, and essentially nonexistent for many patients.
- The Web can be a powerful tool for sharing research ideas and educating patients and providers, but OA should not be the sole, or even the main, emphasis of Web-based strategies.
- Novel health applications of the Web are most likely to come from private organizations and firms, not from government.

# Contact

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