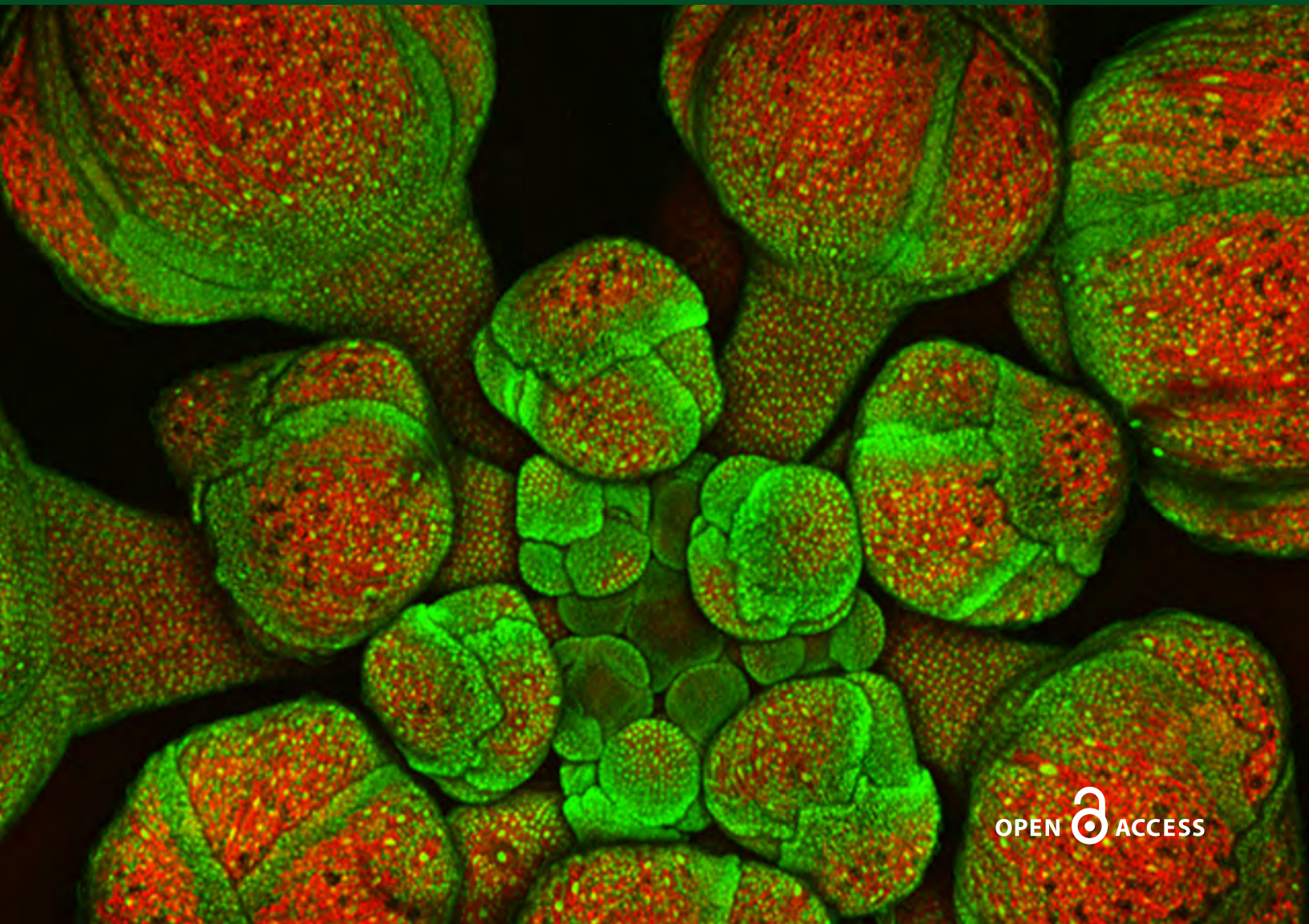




# PLOS

PUBLIC LIBRARY of SCIENCE  
[www.plos.org](http://www.plos.org)

Progress Update  
July 2010



OPEN  ACCESS

## 2009: The Year According to PLoS

This progress update covers the highlights of our 2009 fiscal year, which corresponds to calendar year 2009. We also include some information about what we are working on in 2010.

### Highlights:

1. Message from the Founders
2. Publishing Highlights
3. The Evolving OA Landscape
4. Influential Research
5. Customer Service
6. Financial Performance
7. 2010 and Beyond
8. Major Support in 2009
9. Board of Directors, Management

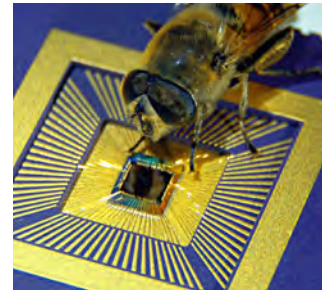
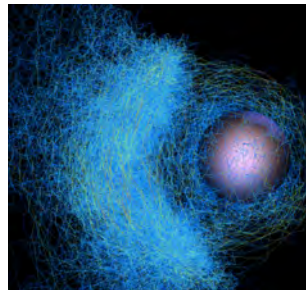
Download our [first PLoS Progress Report](#), released last year, to read more about our mission, our achievements, and our hopes for the future.

## 1. Message from the Founders

Since its conception in 2000, PLoS's mission has been to establish more open, efficient, and effective ways to communicate new ideas and discoveries, so that they reach and engage everyone who has an interest in science or medicine. The foundation of this mission is to make the world's treasury of scientific and medical information a public resource.

When we became a publisher in 2002, our strategy for achieving this goal was to develop a successful, sustainable, and scalable model for open-access (OA) publishing. While the struggle to achieve universal open access is far from over, thanks to our dedicated staff, farsighted supporters, and the thousands of scientists who have published their papers in PLoS journals, 2009 saw us come closer than ever before in meeting this ambitious vision.

Harold E. Varmus  
Patrick O. Brown  
Michael B. Eisen



## 2. Publishing Highlights

### New Ways to Measure Research Impact

In 2009, PLoS became the first publisher to place transparent and comprehensive information (online usage, citations, social bookmarks, notes, comments, ratings, and blog coverage) about the usage and reach of published articles onto the articles themselves, so that the entire research community has access to new tools with

which [to assess research impact](#). These measures for evaluating articles are called [Article-Level Metrics](#) and they have been extremely well received by the community, where they have generated lively debate and concrete analysis of the dataset.

**1. Metrics tab** - this tab contains summary information for every Article-Level Metric that we track.

**2. Breakdown by View Type** - show total HTML page views, PDF downloads, and XML downloads since publication.

**3. Cumulative Views** - this is a graph that shows the sum of the three view types cumulatively over time.

**4. Usage Graph Functionality** - a monthly data box appears when you hover over one of the blue points on the graph.

**5. Link to Tables** - topic-based summary data for each journal.

**6. Cited in** - the number of articles that have cited this PLoS article as recorded by CrossRef, PubMed Central, and Scopus. Links to that information.

**7. Ratings** - this indicates the average user ratings that this article has received in four categories.

**8. Comments and Notes** - users can leave a comment or note on a specific piece of text or on the entire article. Once this has been left, it forms a discussion thread to which other users can reply.

**9. Bookmarked in** - this is a count of how many bookmarks have been made to this article by users of the CiteULike and Connotea "social bookmarking" services.

**10. Blog Coverage** - this is a count of how many blog postings refer to this article, as indexed by the Postgenomic, Nature Blogs, ResearchBlogging.org, and Blogline services.

**11. Trackbacks** - the number of trackbacks that have been made to this article by external sites.

RESEARCH ARTICLE
OPEN ACCESS

### Order in Spontaneous Behavior

Article **1**
Metrics
Related Content
Comments: 15

---

Article Usage ⓘ

Total Article Views: **17672** from May 16, 2007 (publication date) - Jun 28, 2010\*

**2 Breakdown by View Type**

HTML Page Views: **15188**

PDF Downloads: **2129**

XML Downloads: **355**

**3 Cumulative Views from May 16, 2007 (publication date) - Jun 28, 2010**

View Type	Views in Apr '10	Total since May 16 '07
HTML	247	14706
PDF	28	2074
XML	1	353
<b>Total</b>	<b>276</b>	<b>17133</b>

\*Data refer to views from the PLoS ONE Web site only.  
\*Although we update our data on a daily basis (not in real time), there may be a 48-hour delay before the most recent numbers are available.

**5 Metrics Information and Summary Data for PLoS ONE**  
Questions or concerns about usage data? [Please let us know.](#)

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Citations ⓘ

**6 Cited in**  
[CrossRef \(7\)](#), [PubMed Central \(4\)](#), [Scopus \(12\)](#)  
Search for citations in [Google Scholar](#).

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Other Indicators of Impact ⓘ

**7 Average Rating (2 User Ratings)**

Insight	☆☆☆☆☆
Reliability	☆☆☆☆☆
Style	☆☆☆☆☆
<b>Overall</b>	☆☆☆☆☆

[Rate This Article](#)

**8 Reader Comments**  
[Comments \(8\) and Notes \(7\)](#)

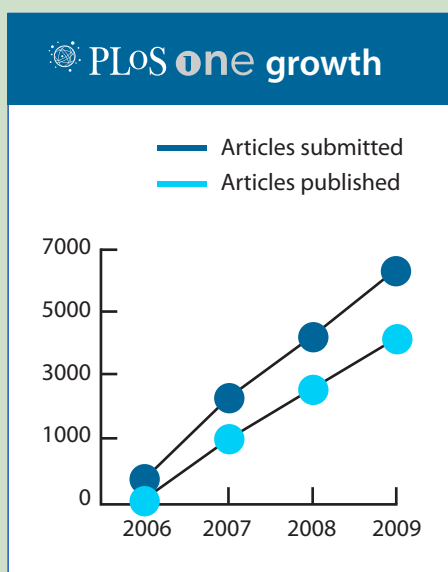
**9 Bookmarked in**  
[CiteULike \(4\)](#), [Connotea \(2\)](#)

**10 Blog Coverage**  
[Postgenomic \(7\)](#), [Research Blogging \(1\)](#)  
Search for related blog posts on [Google Blogs](#), [Bloglines](#), [Nature](#)

**11 Trackbacks**  
[0 trackbacks](#)

## PLoS ONE Innovations

In 2009, *PLoS ONE* won the [ALPSP award for Publishing Innovation](#) for combining “the traditional values of the journal with innovative online features to create an inclusive and efficient publication channel. It is bold and successful and shaping the future of publishing”. *PLoS ONE*'s innovative approach has resonated strongly with researchers, who are submitting articles in ever-increasing numbers.



## A Single Publishing Platform

When *PLoS Biology* moved to PLoS's open-source publishing platform (Ambra) in May 2009, it marked the completion of a two-year project involving the migration of over 9,000 articles. By [centralizing PLoS content](#) on a platform created by us, we were able to implement cross-journal features such as search and collections of articles on different topics. We could also ensure that all articles had the same online user tools, including notes, comments, and ratings.



## 3. The Evolving OA Landscape

2009 was a year for “breathtaking momentum in the right direction” according to OA thought leader [Peter Suber in his “open access in 2009” round up](#). There was an average of five university OA mandates (a requirement from the university for researchers to make their work publicly accessible) and more than one funding agency mandate every month for the entire year from organizations such as MIT, the Chinese Academy of Sciences, the University of Pretoria, and the National Center for Atmospheric Research. Many of them were announced during [Open Access Week](#), which is a major advocacy campaign that PLoS helps to organize each year.

In addition, the [Compact for Open-Access Publishing Equity](#) (COPE) was formed, and its members include illustrious institutions such as Harvard, MIT, Memorial Sloan-Kettering, Columbia, and others. Amongst the goals of COPE is the establishment of funds to help cover the publication fees that support many OA journals.



## 4. Influential Research

During 2009, the PLoS journals continued to hit the headlines by publishing outstanding research along with provocative opinion and commentary.

### Raising Standards of Publishing Integrity

In 2009, *PLoS Medicine* [restated its mission](#)<sup>1</sup>, and realigned its editorial policies to reflect more closely the world's health priorities. In July, demonstrating the editors' commitment to raising standards of publishing integrity, *PLoS Medicine* and *The New York Times* intervened successfully in a court case about ghostwriting. The judge agreed to make public 1,500 documents ([available on the PLoS Medicine Web site](#)<sup>2</sup>) that showed how Wyeth strategically placed articles written by unattributed writers but with academics listed as "authors" in the academic literature to promote the hormone therapy drug Prempro. *PLoS Medicine* continues to campaign against practices such as ghostwriting that subvert scholarly publishing, and to promote the highest standards of reporting, for example, in its [Guidelines and Guidance section](#)<sup>3</sup>. In addition to a diverse range of magazine articles, the journal also commissioned a series on ["packages of care" for mental health disorders in low- and middle-income countries](#)<sup>4</sup>.



### The New York Times

The documents on ghostwriting were uncovered by lawyers suing Wyeth and were made public after a request in court from PLoS Medicine, a medical journal from the [Public Library of Science](#), and The New York Times.

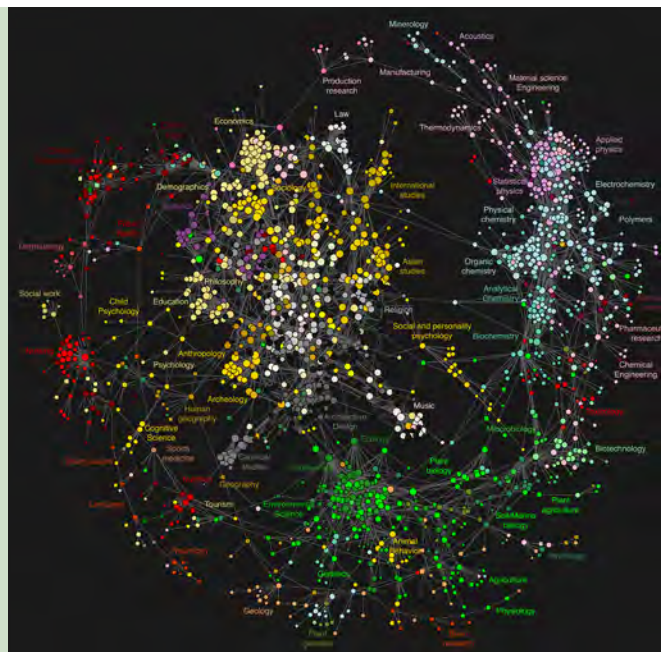
### PLoS ONE in the News

[More than 200 articles](#) published in *PLoS ONE* during 2009 were covered by international media and bloggers. *PLoS ONE* continued to publish strong



research in the area of [paleontology](#)<sup>5</sup>, including articles about [a complete fossil of a primate skeleton named Darwinius masillae](#)<sup>6</sup>, and [three mid-Cretaceous dinosaurs discovered in Australia](#)<sup>7</sup>. Other research highlights included articles on [giant orb-weaving](#)

[spiders](#)<sup>8</sup>, [mobile phone-based clinical microscopy](#)<sup>9</sup>, and [creating high-resolution maps of science using clickstream data](#)<sup>10</sup>.

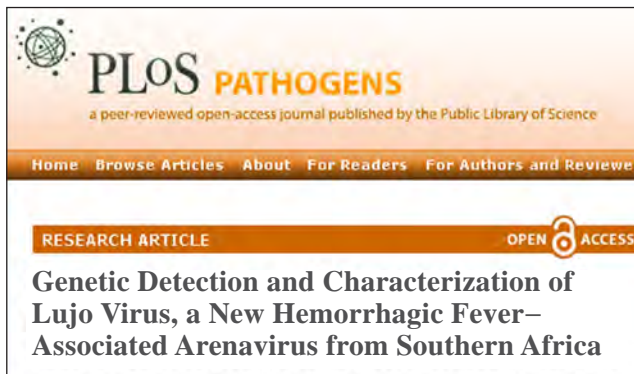


## Research Highlights from the PLoS Community Journals

*PLoS Computational Biology*—[Parkinson's drugs show promise against drug-resistant tuberculosis](#)<sup>11</sup>. Researchers used computer models and lab experiments to look for established drugs that might be of use in treating resistant forms of tuberculosis. They found that the active component in two agents effective against Parkinson's disease also block the multiple-drug resistant tuberculosis bacterium.

*PLoS Genetics*—[Link between vitamin D deficiency and increased risk of multiple sclerosis](#)<sup>12</sup>. Researchers determined a direct interaction between vitamin D and the activity of a gene affected by a common genetic variant that influences a person's risk of developing multiple sclerosis. The work has practical implications for studies of disease mechanisms and prevention.

*PLoS Pathogens*—[New arenavirus identified](#)<sup>13</sup>. A multi-institutional research team identified Lujo virus (LUJV), a new member of the family Arenaviridae and the first hemorrhagic fever-associated arenavirus from the Old World to be discovered in three decades.



*PLoS Neglected Tropical Diseases*—[The feasibility of onchocerciasis elimination in endemic areas in Africa](#)<sup>14</sup>. This study provided empirical evidence that elimination of onchocerciasis with ivermectin treatment is feasible in some endemic foci in Africa. The African Programme for Onchocerciasis Control has adopted an additional objective to assess progress towards elimination endpoints in all onchocerciasis control projects and to guide countries on cessation of treatment where possible.

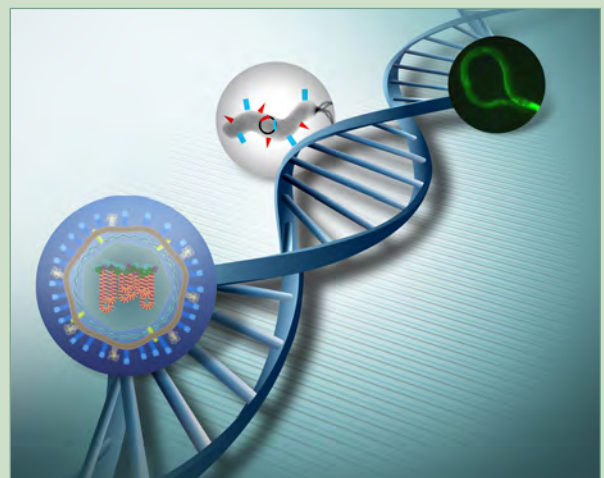
## The Funding of Scientific Research—An Essay That Inspired Debate

In 2009, Professor Peter Lawrence of the University of Cambridge, United Kingdom, wrote a widely discussed [Essay](#)<sup>15</sup> proposing that “the granting system turns young scientists into bureaucrats and then betrays them”. This article in *PLoS Biology* has accrued many comments and is one of the most discussed articles we have published. The article was also widely covered in the mainstream media, and led to a question in the UK Parliament.



## Genomics and Emerging Infectious Disease

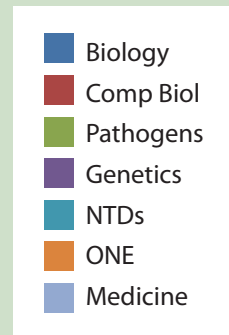
*PLoS Biology* also led a collaborative project amongst the PLoS journals in 2009 to publish an outstanding collection of [Essays, Perspectives, and Reviews](#)<sup>16</sup> on the part that genomics is playing in our understanding of emerging infectious disease. The collection was produced with support from Google.org, and was the most ambitious cross-journal article collection that PLoS has published to date. All of the PLoS article collections are now accessible through a [single Web page](#)<sup>17</sup>.



## 5. Customer Service

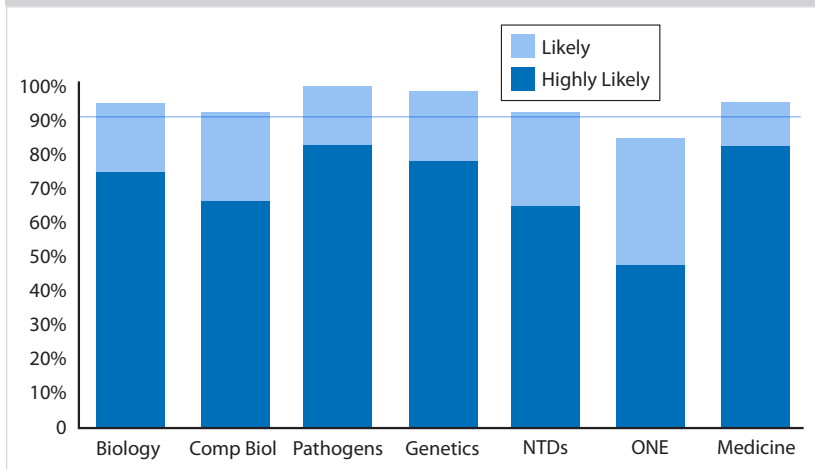
### Author Satisfaction Survey

In 2009, we conducted our first comprehensive survey of authors about all aspects of our service. The survey covered published and rejected authors in 2008, and we were pleased to report that overall levels of satisfaction are very high. An overwhelming majority of published authors are likely to publish with us again and demonstrated very high levels of satisfaction with the open access and distribution of their published work and the overall publishing experience with PLoS. Please view this [PowerPoint slide show with audio commentary](#) to find out more. This research will be repeated annually as we continually seek to improve our services for readers and authors.

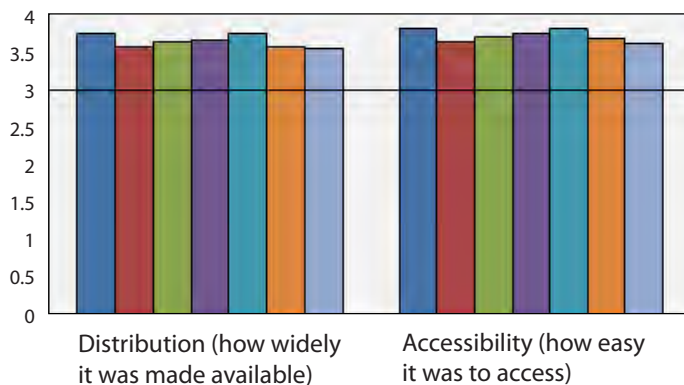


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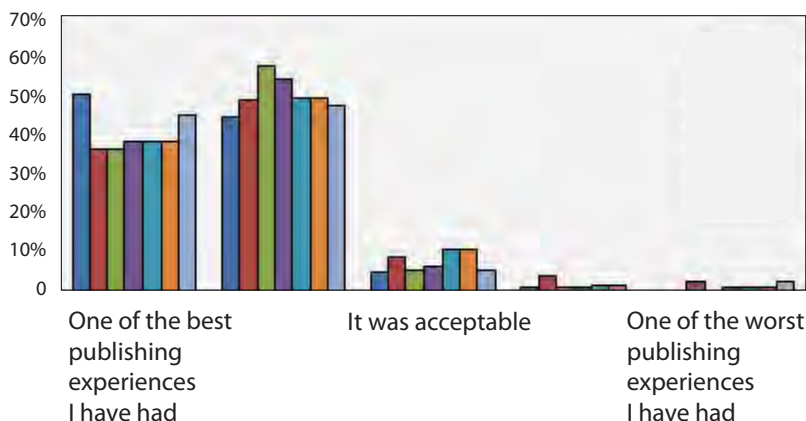
### Majority are "likely" or "highly likely" to submit again to PLoS



### Levels of enthusiasm for distribution and access are very high



### Overall satisfaction with publishing experience is very good



## 6. Financial Performance

PLoS continued on its path towards operating profitability in 2009, exceeding plan expectations on all fronts. Total revenues for the period grew to \$9.4MM—a 36% increase over 2008 levels—fueled mainly by strong growth in publishing volumes. Consistent with our sustainability strategy to achieve operating profitability in 2010, operating revenues increased 45% over 2008 levels (\$8.9MM) while expenses increased only 24% over the same period, substantially narrowing our operating gap. Public support for the year was \$0.5MM, slightly lower than the previous year but consistent with expectations as we fund more of our growth through our publishing operations. PLoS posted its first profitable quarter in Q1 2010 due to strong growth in publishing activity, and we anticipate meeting or exceeding our financial targets for 2010.

### Income Statement (\$000's)

12 months ended December 31, 2009

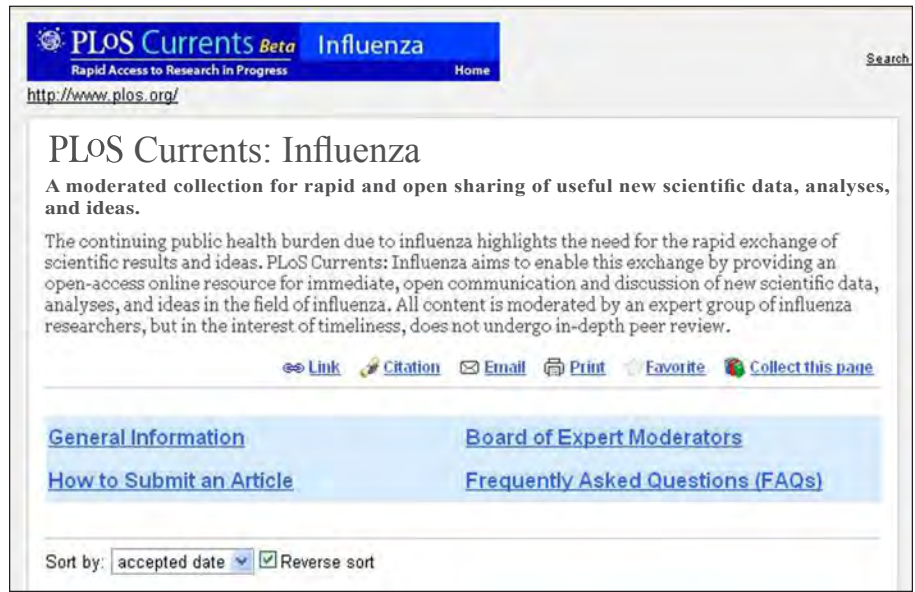
	2009	2008
<b>OPERATING REVENUES</b>		
Net Publication Fee Revenue	\$8,390	\$5,476
Advertising Revenue	192	183
Memberships	296	291
Interest & Other Income	21	193
<b>Total Operating Revenues</b>	<b>\$8,899</b>	<b>\$6,142</b>
<b>OPERATING EXPENSES</b>		
Direct Expenses	\$5,372	\$4,555
Operating Expenses	4,337	3,254
Advertising & Marketing	74	63
<b>Total Expenses</b>	<b>\$9,783</b>	<b>\$7,872</b>
<b>Operating Income/(Loss)</b>	<b>(\$884)</b>	<b>(\$1,730)</b>
<b>PUBLIC SUPPORT</b>		
Grants	\$497	\$770
<i>Less: Fundraising Expense</i>	121	59
<b>Net Public Support</b>	<b>\$376</b>	<b>\$711</b>
<b>Net Income/(Loss)</b>	<b>(\$508)</b>	<b>(\$1,019)</b>



# 7. 2010 and Beyond

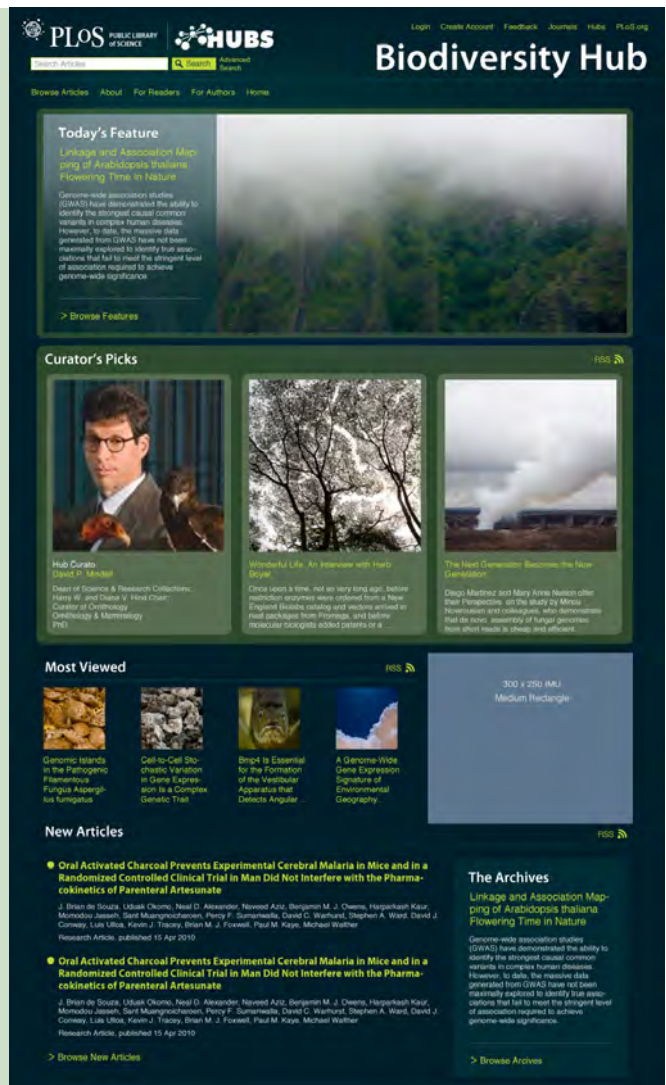
## PLoS Currents

In August 2009, Harold Varmus (the Nobel Prize-winning co-founder of PLoS) announced the launch of PLoS Currents, a series of new and experimental Web sites for the rapid communication of research results and ideas. The first topic covered by Currents was [Influenza](#) in response to the worldwide H1N1 influenza outbreak. PLoS Currents submissions are vetted by expert moderators and hosted on the Google knol platform. Contributions are also citable and are archived in PubMed Central. We are expanding the series in 2010 and will announce further details on the [PLoS blog](#).



## PLoS Hubs

Later this year, PLoS will also launch a prototype version of the PLoS Hub for Biodiversity, a resource that will aggregate relevant articles from a range of open-access sources, including our own journal Web sites and PubMed Central. Biodiversity is a very broad interdisciplinary topic with data, analyses, and ideas currently spread across many locations. The aims of this Web site will be to create a place to share the latest findings, to connect researchers who have complementary interests and ideas, and to accelerate the pace of research and discovery. We're collaborating with a number of different organizations to create this new site, including the [Census of Marine Life](#), the [California Academy of Sciences](#), the [Natural History Museum, London](#), the [Consortium for the Barcode of Life](#), the [Encyclopedia of Life](#), and the [Biodiversity Heritage Library](#).



Mock-up of Biodiversity Hub home page. Final version may vary.

## Research Impact

Although PLoS is pleased to have placed comprehensive usage, reach, and impact data on each article, we can only unlock the true potential of the Article-Level Metrics program when we open the code to the world. Once this is done, others can build and improve on what we started. In the future, we hope that these measures will be adopted by other publishers so that eventually many of us operate with a similar level of transparency that will be of benefit to all scientists and their careers, and will accelerate scientific progress.

## OA Landscape

In the United States, the [Federal Research Public Access Act](#) (FRPAA), which promises to strengthen the National Institutes of Health (NIH) policy and extend it across the federal government, was reintroduced into the House, and the Obama administration issued a call for comments from the community on how best to make this happen.

## New Manuscript Submission System

The rapid growth of PLoS means that we need to overhaul some of our systems and functionality in 2010. In particular, the increase in submission volumes across all titles, and particularly on *PLoS ONE*, means that we need a new manuscript submission system. We have partnered with industry-leading supplier Aries to improve our capabilities in this area with a system called PLoS Editorial Manager.



*PLoS Medicine iPhone App*

*PLoS iPad App*

## Increased Discoverability

More PLoS articles in the world means our audiences need new ways to discover our content, which is another good reason why we improved our [search functionality](#).

Members of the development community used our content to help us go mobile. They created our first ever [iPhone application](#), which we launched for *PLoS Medicine*, and an [iPad application](#) for all of our journals.

## PLoS Forum

In March 2010, PLoS held the first PLoS Forum in San Francisco, California, US. Over 70 invited thought leaders came together to brainstorm about the future of scientific communication. The lively and creative discussions will help to inform PLoS's longer term ambitions for transforming the ways we present and use new research findings.





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Page 2: Luca Galuzzi. *PLoS Biology*. 7(12).  
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Page 5: Johan Bollen et al. *PLoS ONE*. 2009. 4(3).  
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Page 11: Jeffrey Gauthier. *PLoS Biology*. 2009. 7(4).  
Page 12: Adrian H. Elcock. *PLoS Computational Biology*. 2010. 6(3).

### References and links:

1. [www.plosmedicine.org/doi/pmed.1000072](http://www.plosmedicine.org/doi/pmed.1000072)
2. [www.plosmedicine.org/static/ghostwriting.action](http://www.plosmedicine.org/static/ghostwriting.action)
3. [www.plosmedicine.org/doi/pmed.0050099](http://www.plosmedicine.org/doi/pmed.0050099)
4. <http://tinyurl.com/pmed-mentalhealth>
5. <http://tinyurl.com/pone-paleo>
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11. [www.ploscompbiol.org/doi/pcbi.1000423](http://www.ploscompbiol.org/doi/pcbi.1000423)
12. [www.plosgenetics.org/doi/pgen.1000369](http://www.plosgenetics.org/doi/pgen.1000369)
13. [www.plospathogens.org/doi/ppat.1000455](http://www.plospathogens.org/doi/ppat.1000455)
14. [www.plosntds.org/doi/pntd.0000497](http://www.plosntds.org/doi/pntd.0000497)
15. [www.plosbiology.org/doi/pbio.1000197](http://www.plosbiology.org/doi/pbio.1000197)
16. <http://tinyurl.com/pbio-geid>
17. [www.ploscollections.org](http://www.ploscollections.org)



## 8. Major Support in 2009

- [William K. Bowes, Jr. Foundation](#)
- [Alfred P. Sloan Foundation](#)
- [John D. and Catherine T. MacArthur Foundation](#)

## 9. Board of Directors, Management

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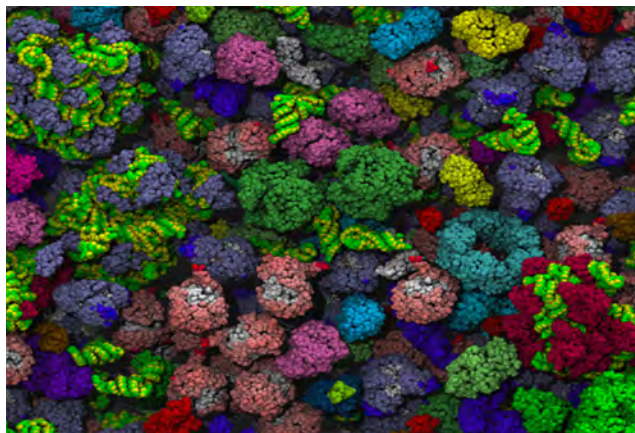
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**Catherine Nancarrow**, Managing Editor, *PLoS Community Journals*

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