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Building a Public Library of Science

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Meeting of the American Institute of Biological Sciences
Washington, DC

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STM publishing is changing - the promise of the internet

- Reduced costs, global distribution (one copy serves all who connect)
- Potential for Archiving and Searching new and old literature (Google Scholar)
- Improved format for data presentation, opportunities for other novel features
- Text- and data-mining



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But there are problems

- Online journals are available only to subscribers
- Libraries are struggling to provide access to all required journals
- Site licensing is complex and restrictive
- Big deals



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STM publishers are doing well



- \$7billion dollar industry
- Substantial profits
- Fastest growing sub-sector of the media industry for the past 15 years

(Morgan Stanley, 2002)



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Ecology & Evolution: Dominance of commercial publishers

PublisherType	# Journals	% papers
Society	26	21.11%
Commercial	61	69.18%
University Or Uni. Press	14	9.44%
Miscellaneous	1	0.27%
TOTAL	102	100.00%

**Commercial publishers control ~70% of
market share in ecology and evolution**

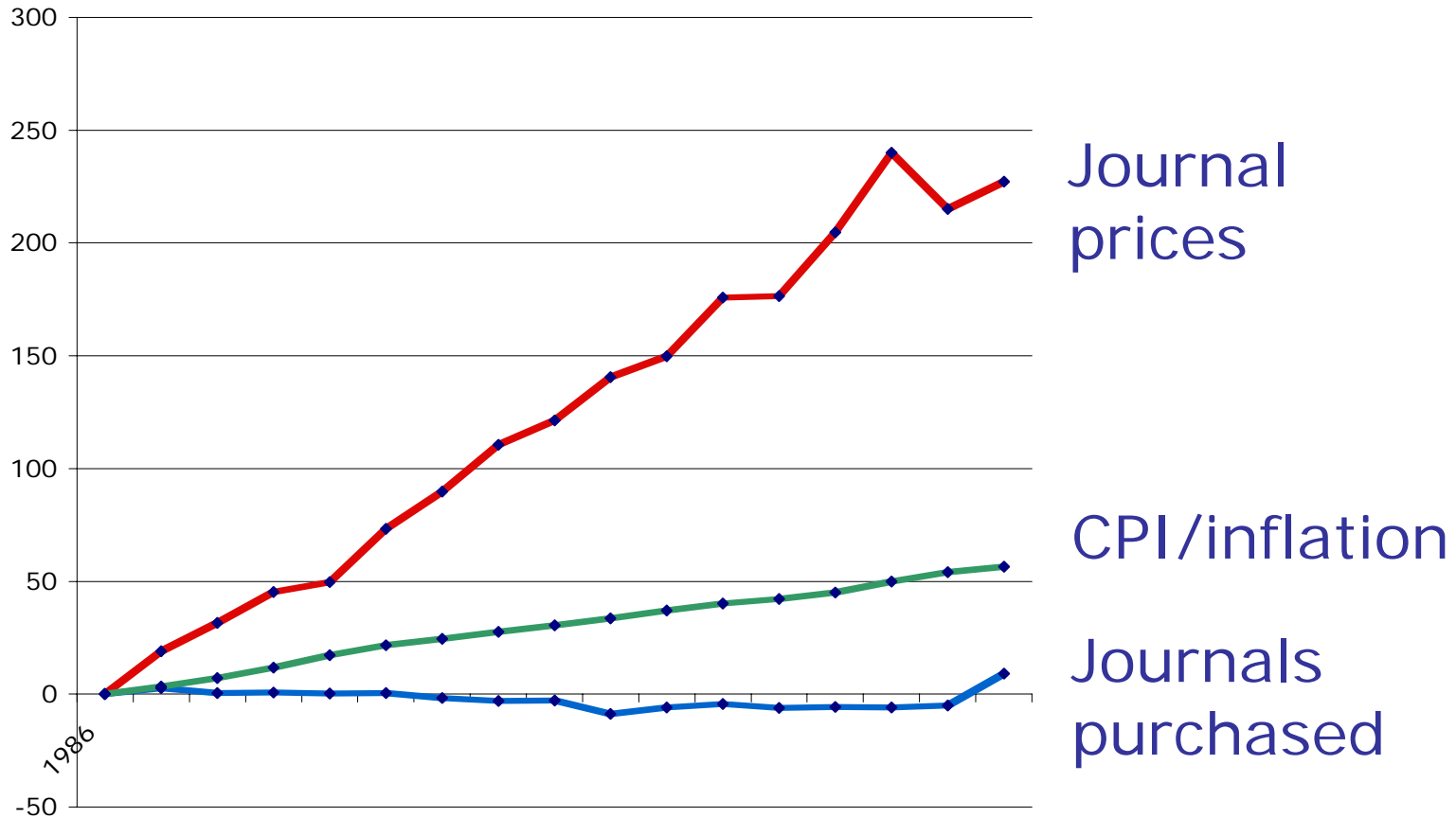
Blackwell	22.5%
Elsevier	15%
ESA	5%



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The journals crisis



Source: Association of Research Libraries



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Office of Fair Trading, 2002

- “There is evidence to suggest that the market for STM journals may not be working well.”
- “Many commercial journal prices appear high, at the expense of education and research institutions.”
- “...it remains to be seen whether market forces...will remedy the problems that may exist.”

*UK response to proposed merger
of Elsevier and Harcourt*

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Why market forces don't work

- Each paper is unique and every journal a monopoly
- Researchers are cushioned from the real cost of publication
- Funding for research and research output often split between different organisations and funding agencies.



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PLoS – a brief history

- Founded in October, 2000
- Circulated an open letter urging publishers to increase access to research literature
- >30,000 signatories
- Some positive effects, but overall response from publishers fell short of demands
- In December, 2002, \$9million grant from Moore Foundation to launch open access journals.

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What is open access?

- Free and unrestricted access online
- Readers/users are licensed to download, print, copy, redistribute, etc.
- Author retains copyright (Creative Commons Licence)
- Papers are deposited in a public online database

Based on the Bethesda Principles, April 2003

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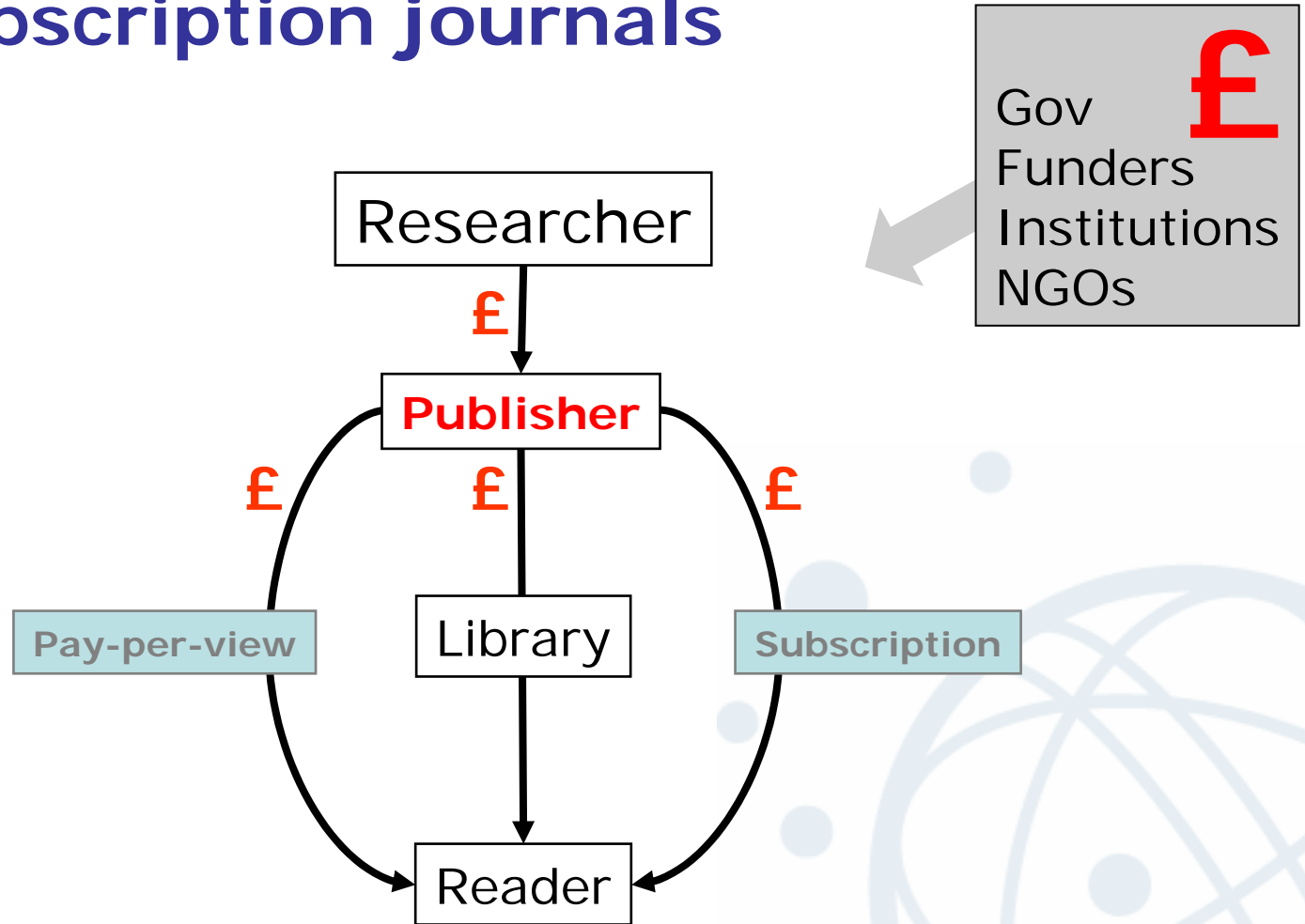
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Subscription journals



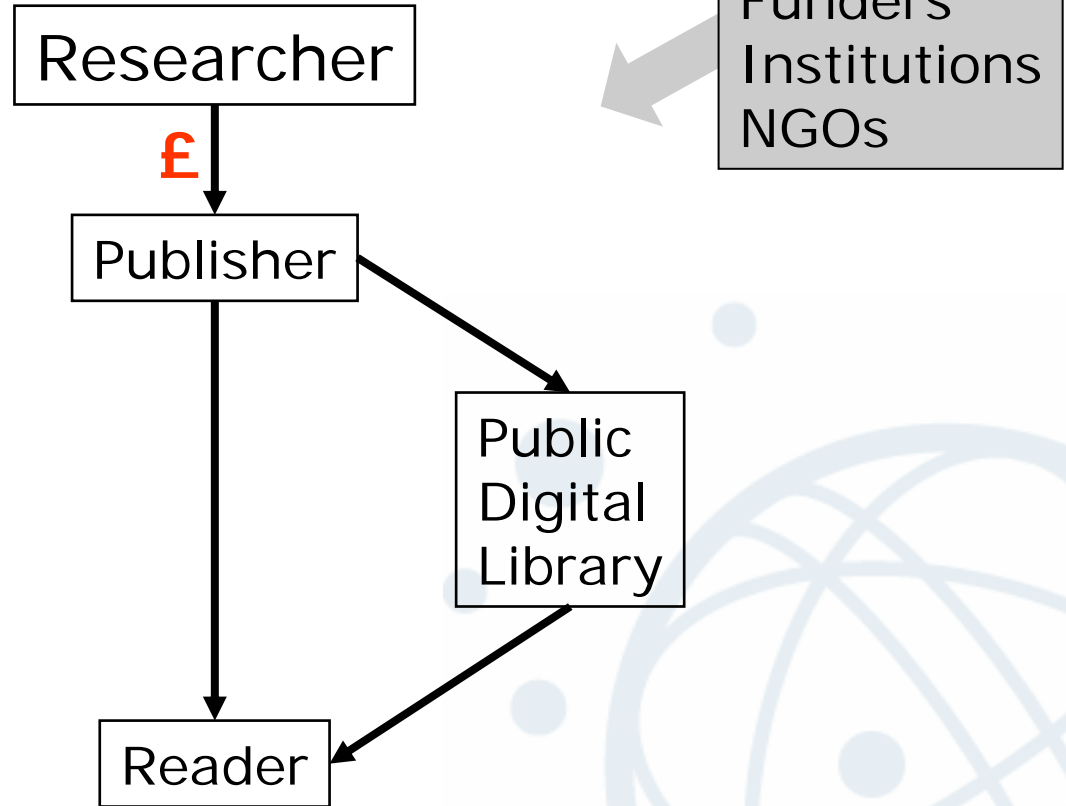


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Open access journals

Publishing is the final step in a research project





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Benefits of open access

- Maximum impact for authors
access to the largest possible audience
- New ways to access and use literature
full-text searching and mining
- Greatly expanded access to research
for scientists, educators, physicians, the public, NGOs,
developing countries
- An effective publishing market
market forces keep prices in check

“research (enabled by technology) is changing its nature profoundly; it is now possible to collect and analyse/mine vast amounts of data, rather than simply collecting what you need to test a particular hypothesis.”

Sally Morris ALPSP Alert 95, 2005

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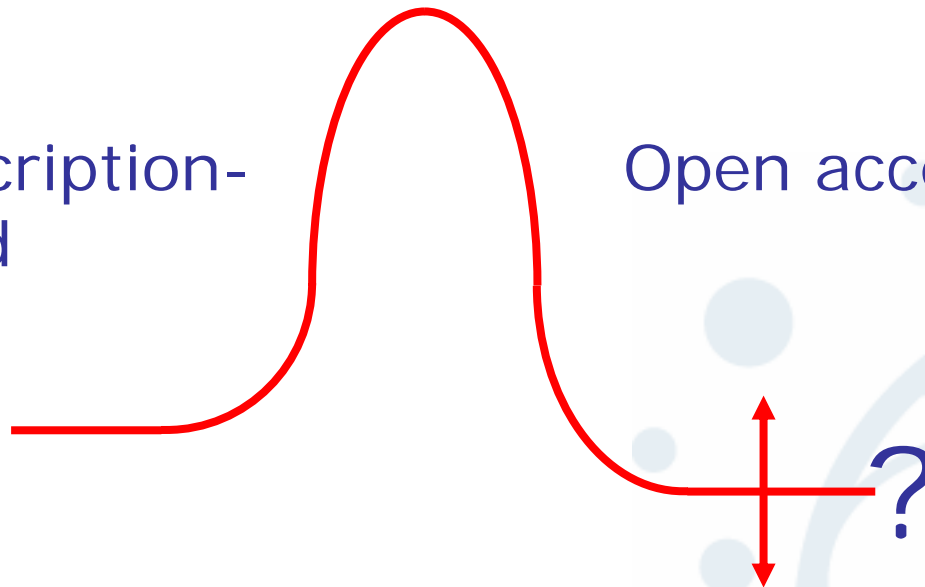


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Transition state economics

Subscription-
based



Open access



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Barriers to open access

- Publishers - commercial success
- Scientific Societies - publishing supports them
- Authors - submitting to a new journal
- Funding agencies - don't currently fund publishing
- Libraries - funding uncertainties

"Based on the 2004 budget, total income (and expenditure) was £1250k. Roughly 75% of total income comes from journals (£900k), but running the journals is only 25% of total expenditure (£300k)"

Jill Lancaster, BES debate



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Catalysts for change

- Open access journals - BMC, PLoS
- Experimentation amongst publishers and Societies – PNAS, ESA, OUP, APS, COB, Springer, Blackwell
- Policy change in funding agencies – NIH, HHMI, Wellcome Trust, RCUK, Berlin Declaration
- Governments? – UK Inquiry
- Other organizations - SPARC, JISC, UN WSIS, OSI, EU
- Open letter signed by 25 Nobel Laureates
- Institutions, libraries
- Pioneer authors



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The Wellcome Trust

- Analysis of publishing, 1995-99
- 16,646 papers
- Total funding £1.5 billion
- Assume papers cost £1500
- Costs of publishing represent 1.7% costs of research

Sources:

Wellcome Trust

Research Outputs Database

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PLoS Publishing strategy

- Launch two high quality open access journals to rival existing top tier journals.
- PLoS Biology in October, 2003
- PLoS Medicine in October 2004
- Then launch more specialist open access journals
- Stimulate and partner other organizations to do the same

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PLOS BIOLOGY

Basic information

- Launched Oct 2003 (IF in June 2005)
- Year 1
 - Articles submitted – 757
 - Articles published – 140
 - Extensive media coverage
- All the qualities of a top-tier journal
- Online journal has primacy
- Monthly issues
- Publication charge \$1500
- Print subscription at cost

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Table of Contents

[Previous](#)

Vol 3(4) April 2005



About the Cover

[Editorial](#)

[Feature](#)

[Book Review/Science in the Media](#)

[Primers](#)

[Research Articles and Synopses](#)

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Editorial



The PLoS Community Journals

e129

Mark Patterson, Catriona MacCallum, Hemai Parthasarathy, Caitlin Sedwick

2005 will see the launch of three new open access journals from the Public Library of Science - PLoS Computational Biology, PLoS Genetics, and PLoS Pathogens.

[Full-text](#) | [Print PDF \(54K\)](#) | [Screen PDF \(54K\)](#)

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Feature



As the Antarctic Ice Pack

Recedes, a Fragile Ecosystem

Hangs in the Balance e127

Liza Gross

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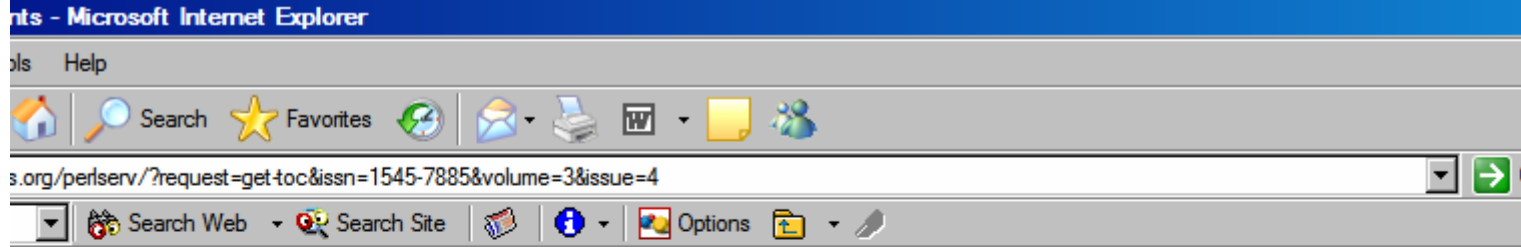
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- [Figure Guidelines](#)
- [Submission Checklist](#)
- [Submit a Paper](#)

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- [Reviewer Guidelines](#)
- [Reviewer Login](#)

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criteria do such cells have to fulfil before we can be confident about their true potential?

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[TOP ▲](#)

Research Articles and Synopses

All *PLoS Biology* research articles are accompanied by a synopsis written by a professional science writer for a general audience. It is our goal that the synopses will provide non-experts with insight into the significance of the published work.



Gray Wolves as Climate Change Buffers in Yellowstone

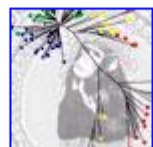
[e92](#)

Christopher C. Wilmers, Wayne M. Getz

Reintroducing wolves can help ameliorate the negative effects of warmer winters on other species and reveals the importance of maintaining intact food chains in the face of climate change.

[Full-text](#) | [Print PDF \(1399K\)](#) | [Screen PDF \(235K\)](#)

Synopsis: [Gray Wolves Help Scavengers Ride Out Climate Change](#)



Lineage-Specific Expansions of Retroviral Insertions within the Genomes of African Great Apes but Not Humans and Orangutans [e110](#)

Chris T. Yohn, Zhaoshi Jiang, Sean D. McGrath, Karen E.

Hayden, Philipp Khaitovich, Matthew E. Johnson, Marla Y.



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The first three Community Journals



PLOS GENETICS



PLOS PATHOGENS



PLOS COMPUTATIONAL
BIOLOGY

Published in partnership with the
International Society for Computational Biology

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www.plosgenetics.org

The screenshot shows the PLoS Genetics homepage. At the top, it says "PLoS GENETICS" and "a peer-reviewed, open-access journal published by the Public Library of Science". There are navigation buttons for "Submit Paper", "Get E-mail Alerts", and "Advertise". A sidebar on the left lists various links like "Home", "About PLoS Genetics", "Editorial Board", etc. The main content area features an announcement: "Announcing a New Genetics & Genomics Community Journal". The text states that PLoS is pleased to announce the launch of *PLoS Genetics*, a new open-access, peer-reviewed journal published monthly by PLoS and run by an international Editorial Board, headed by the Editor-in-Chief, Wayne N. Frankel. It mentions the journal's initiation in July 2005 and its focus on genetics and genomics research. An image of a cell is shown next to the text. Below the text, it says "PLoS has enjoyed strong support from the genetics and genomics community. In the past year, a number of groundbreaking computational biology papers were published in *PLoS Biology*."

genetics.plosjms.org

The screenshot shows the login page for genetics.plosjms.org. It features a header with the PLoS GENETICS logo and "Manuscript Submission and Peer Review". Below the header, there is a login form with fields for "Login Name" (containing "mpatterson") and "Password" (containing "*****"). There are "Login" and "Reset" buttons. Below the form, there are links for "REGISTER for a new account" and "Unknown/Forgotten password?". At the bottom, there is a footer with contact information for the PLoS editorial office: plosgenetics@plos.org, Public Library of Science, AllenTrack by Allen Press, Inc., and Powered by eJournalPress.

www.ploscompbiol.org

The screenshot shows the PLoS Computational Biology homepage. At the top, it says "PLoS COMPUTATIONAL BIOLOGY" and "Published in partnership with the International Society for Computational Biology". There are navigation buttons for "Submit Paper", "Get E-mail Alerts", and "Advertise". A sidebar on the left lists various links like "Home", "Journal Information", "Editorial Board", etc. The main content area features an announcement: "Announcing a New Computational Biology Community Journal". The text states that PLoS and the International Society for Computational Biology (ISCB) are pleased to announce the launch of *PLoS Computational Biology*, a monthly, peer-reviewed open-access publication with the inaugural issue scheduled for July 2005. It mentions the journal is run by Editor-in-Chief Philip E. Bourne and an international Editorial Board. An image of a network graph is shown next to the text. Below the text, it says "PLoS has enjoyed strong support from the computational biology community. In the past year, a number of groundbreaking computational biology papers were published in *PLoS Biology*."

compbiol.plosjms.org

The screenshot shows the login page for compbiol.plosjms.org. It features a header with the PLoS COMPUTATIONAL BIOLOGY logo and "Published in partnership with the International Society for Computational Biology Manuscript Submission and Peer Review". Below the header, there is a login form with fields for "Login Name" (containing "mpatterson") and "Password" (containing "*****"). There are "Login" and "Reset" buttons. Below the form, there are links for "REGISTER for a new account" and "Unknown/Forgotten password?". At the bottom, there is a footer with contact information for the PLoS editorial office: ploscompbiol@plos.org, Public Library of Science, International Society for Computational Biology, AllenTrack by Allen Press, Inc., and Powered by eJournalPress.



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Priorities

- Maintain quality in PLoS Biology, PLoS Medicine
- Continue launch of community-based titles and a venue for more specialised research
- Establish collaborations to convert/launch OA journals
- Keep lobbying for open access



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Long-term goals

- Economic sustainability
- Development of tools/resources for researchers
- Development of educational resource for students and teachers
- Open access becoming the favoured mode of publishing

**Committed to making the world's
scientific and medical literature
a public resource**



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