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**DEVELOPING UNIVERSAL
OPEN ACCESS
TO NEUROSCIENCE
LITERATURE**

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ABSTRACT

Open Access (OA) is the online access to scientific literature, free of charge and free of most copyright and licensing restrictions. OA was named one of the top recent science news stories by science, learned society (including Society for Neuroscience, see latest SFN forums at www.sfn.org) and media publishers (Nature, Science, The Scientist, The Wall Street Journal) and governments (USA, EU, UK, India). Rapidly rising conventional subscription journal prices have been denounced by leading universities, found dysfunctional by independent analysts (PNB Paribas, Citigroup, Credit Suisse), and are supported by science funding bodies (NIH, Howard Hughes Med Inst USA; the Wellcome trust UK; the Max Planck Society and the DFG, Germany, the CNRS and INSERM, France), graduate students, leading scientists and the panel of Nobel Prize laureates. OA movement includes the development of OA journals and OA archives. There are high profile OA journals (such as PLoS Biology and PLoS Medicine) successfully competing with most influential science, technical and medical (STM) serials. OA archives (institutional or governmental, such as PubMedCentral,

PMC by National Library of Medicine USA) allow scholars to deposit their articles published previously in regular peer-reviewed subscription-based journals, to secure free access to their creative works by peers and the public. Modern web search capabilities (ex. Google Scholar) allow easy web accessibility of an article at either publisher or an archive web site. OA journals and OA archives both provide the tools to liberate scholarship from commercial publisher cabal, to improve the impact of scientists' publications, their university recognition, and ease grant application and reporting requirements. OA accelerates research, shares knowledge, improves the usefulness of scholar literature, higher education and global scientific heritage. Wider development of Open Access depends on educating the scientific community about its simplicity and benefits. This session describes the primer of run by scholars non-profit OA science journals (Neurobiology of Lipids and Doping Journal) and nation-wide OA archive (Israel Scholar Works). It also serves to educate global neuroscience community about other noteworthy OA projects, their usefulness and ease of use.

WHAT IS OPEN ACCESS TO SCIENCE LITERATURE?

Open Access (OA) science/scholar literature is digital, online, free of charge, and free of most copyright and licensing restrictions.

“Free access to taxpayer funded research globally may soon be within grasp, and make possible the freer flow of medical knowledge that strengthens our capacity to find cures and to improve lives”

(An Open Letter to the US Congress Signed by 25 Nobel Prize Winners, Aug 2004)

WHY OPEN ACCESS WILL BENEFIT EVERY NEUROSCIENTIST?

Open-Access (OA) to your published works means:

- 1. Free unrestricted universal access to your research by peers and the public**
- 2. Greater impact of your works because of increased readership and citation index**

OA gives to authors worldwide audience larger than that of any subscription-based journal, no matter how prestigious or popular, and provably increases the visibility and impact of their work. In addition to authors OA serves the interests of several other groups.

WHO ELSE BENEFIT FROM OPEN ACCESS?

Readers: OA gives them barrier-free access to the literature they need for their research, not constrained by the budgets of the libraries where they may have access privileges. It increases their convenience, reach, and retrieval power.

Teachers and students: OA puts rich and poor on an equal footing for these key resources and eliminates the need for permissions to reproduce and distribute content.

Libraries: OA solves the pricing crisis for scholarly journals. OA also serves library interests in other, indirect ways. Librarians want to help users find the information they need, regardless of the budget-enforced limits on the library's own collection. University librarians want to help faculty increase their audience and impact and thereby help the university raise its research profile.

Universities: OA increases the visibility of their faculty and institution, reduces their expenses for journals, and advances their mission to share knowledge.

Journals and publishers: OA makes their articles more visible, discoverable, retrievable, and useful.

Funding agencies: OA increases the return on their investment in research, making the results of the funded research more widely available, more discoverable, more retrievable, and more useful. OA serves public funding agencies in a second way as well, by providing public access to the results of publicly-funded research.

Governments: As funders of research, governments benefit from OA in all the ways that funding agencies do (see previous entry). OA also promotes democracy by sharing government information as rapidly and widely as possible.

Citizens: OA gives them access to peer-reviewed research (most of which is unavailable in public libraries) and gives them access to the research for which they have already paid through their taxes. It also helps them indirectly by helping the researchers, physicians, manufacturers, technologists, and others who make use of cutting-edge research for their benefit.

Source: Peter Suber. Introduction to Open Access. Available as a link at a footer of this page:

<http://neurobiologyoflipids.org/openaccess/sfn2004.html>

OPEN ACCESS INCREASES IMPACT

Recent study on the impact of Open Access showed that across four diverse science “disciplines, freely available articles do have a greater research impact. Shedding light on this category of open access reveals that scholars in diverse disciplines are adopting open-access practices and being rewarded for it.”

(Park *et al.* *College and Research Libraries* Sept 2004 65(5) Journal FileID=31968)

Also see detailed bibliography of research on how Open Access accelerates the impact of science publications:

<http://opcit.eprints.org/oacitation-biblio.html>

OPEN ACCESS BASICS

The are two basic forms of Open Access Publications:

1. Open Access Journals

2. Open Access Archives or Repositories

The chief difference between them is that OA journals (like any science journal) conduct peer review and publish articles in first place. OA archives archive articles published previously (i.e. before archiving) in one or another non-OA science journal (where peer review is performed to protect published science quality). Because of the above, OA Journals and OA Archives supplement each other, and allow every scientist to achieve virtually full open access to his/her published works.

OPEN ACCESS IS A HOT SCIENCE POLICY MATTER

Open Access was named one of the recent top science news stories by Nature, Science, The Scientist, and The Wall Street Journal, and Governments.

Society for Neuroscience (SfN) recently joined the discussion of Open Access issues. The Society recently started Open Access Publishing Forum, and presently invites visitors of the SfN home page (www.sfn.org) to “engage in the discussion of the feasibility of open access models for scientific journal publishing”.

However, the lack of the SfN membership interest in OA forum (where presently the forum posts are taken by spammers, as viewed on October 8, 2006) indicate scientists do not well aware of Open Access benefits

SfN HOSTS OPEN ACCESS PUBLISHING ROUNDTABLE AT NEUROSCIENCE 2006 IN ATLANTA

Neuroscience 2006 will host a Publishing Roundtable, which will be moderated by incoming SfN President and former Editor-in-Chief of The Journal of Neuroscience, David Van Essen. "(R)evolution in scientific publishing: How will it affect you?" will be held Monday, Oct 16, from 9:30 to 11:00 am.

SfN RECOGNISED OPEN ACCESS IN 2004

In 2004, the Teaching Session by OA Journal Editor was included in the Press Book of the Neuroscience 2004. This lay article and full presentation by Alexei Koudinov, editor of the Neurobiology of Lipids, is available at this URL:

www.neurobiologyoflipids.org/openaccess/sfn2004.html

For web links-rich presentation log on to: <http://neurobiologyoflipids.org/openaccess/sfn2006.html>

HOW TO MAKE YOUR RESEARCH OPEN ACCESS?

Open Access to your research won't come automatically. You have to think of it, and consider one or another option to have it happen:

1. Consider archiving your science masterpiece in OA Archive

2. Consider publishing your research in OA Journal

Option 1 will build on your present publication preferences and will harm you in no way. Why? Because in addition to having article published in say Science, Nature, Neuron or elsewhere you can also deposit it in OA postscript archive. This is especially valuable if/when there is no OA journal in the field of your research (Option 2)

PART 1: OPEN ACCESS ARCHIVING

OA archiving of your previously/recently published research means that in addition to first place publication in certain journal (Science, Nature, Neuron, etc.) your article will be universally available (and globally indexed by search engines and libraries) for free at the archive web site.

Over the past few years many publishers (Elsevier, Science, etc) relaxed science publication's copyright terms and introduced the permission to archive articles published previously in their journals.

An archive version of article regularly represents the final accepted version (after proof reading by authors) of the manuscript under the formatting different from the journal formatting. It means that regularly one should have the non-formatted by original publisher text file of the accepted manuscript in order to submit it to OA archive.

GETTING READY TO ARCHIVE YOUR WORKS

Getting ready to archive your work won't take much of your valuable time. It may include the following easy steps:

Step 1

Decide where to archive your work.

Governmental www.PubMedCentral.gov is US scientists' first choice.

PubMed Central (PMC) is the U.S. National Institutes of Health (NIH) free digital archive of biomedical and life sciences journal literature. Archiving in it will ease your NIH grant application and reporting requirements, will integrate your research with other NIH publications and NIH Public Access policy

(publicaccess.nih.gov/policy). Other archives include University repositories, subject and national archives. It could be helpful to check what are your archiving options with your library specialist on Open Access, and consult Directory of Open Access Repositories (www.OpenDOAR.org) and Registry of Open Access Repositories (ROAR, <http://archives.eprints.org>).

Neuroscience of Lipids subject archive

The latest example of the neuroscience subject archive comes from Neurobiology of Lipids (www.neurobiologyoflipids.org), an Open Access scholar journal on every aspect of the biology of fats in brain function and disease. As of spring 2006 Neurobiol Lipids expanded its' mission/content by accepting for archiving research articles on NoL scope, published previously in other journals. Check the journal news page www.neurobiologyoflipids.org/newsstand for more info.

ISRAEL SCHOLAR WORKS, AN EXAMPLE OF NATIONAL SCHOLAR ARCHIVE

Israel Scholar Works is a digital archive for creative work by the faculty and staff of Israel Academic Institutions and Jewish scholars all around the world. Israel Scholar Works aims to unite Israel and Jewish scholarship, to make it available to a wider audience, and to help assure its long-term preservation.

Israel Scholar is a web based independent non-profit educational organization. Run by scholars, it aims to promote and unite global Israel Scholarship. Taking advantage of the modern Internet technology and its' end-user availability, Israel Scholar is setting the Israel Scholar Works, where every Israel and/or Jewish scholar can personally permanently archive his or her creative work, and make it freely available for peers and for the public. Such archive provides a platform to have Israel scholars rights to regain control over their scholarship realised easily. More info on Israel Scholar Works is available at www.israelscholar.org .

Israel Scholar will gladly accept a donation, grant support and cooperation to help developing Israel Scholar Works. Proposal' draft is provided below.

For web links-rich presentation log on to: <http://neurobiologyoflipids.org/openaccess/sfn2006.html>

Step 2

Verify Your Copyright

If the work has been published previously, check your copyright transfer form to be sure you have the right to post it. Check current policies of your journal/publisher, because new regulations may override the terms you accepted in the past and presently allow archiving. If it is a work of multiple authorship (whether published or not), you may need to ascertain that the other authors also approve archiving.

For a searchable database of publisher policies about copyright and archiving, see Project SHERPA, www.sherpa.ac.uk/romeo.php . Also see the Eprints journal-level supplement to SHERPA's data on publishers (<http://romeo.eprints.org/stats.php>).

Also please remember:

...that you can fight for your copyright rights when publishing your next article in a conventional journal, requiring a copyright transfer. Elsevier, for example, will publish your works despite your failure to return to the publisher signed copyright transfer form.

Remember: There are ways to help protect your creative works rights even when you sign the copyright form

Use the SPARC Author Addendum to secure your publication rights

You would never knowingly keep your research from a readership that could benefit from it, but signing a restrictive publication agreement limits your scholarly universe and lessens your impact as an author.

Why? According to the traditional publication agreement, all rights—including copyright—go to the journal. You probably want to include sections of your article in later works. You might want to give copies to your class or distribute it among colleagues. And you likely want to place it on your Web page or in an online archive if you had the choice. These are all ways to give your research wide exposure and fulfill your goals as a scholar, but they are inhibited by the traditional agreement. If you sign on the publisher's dotted line, is there any way to retain these critical rights?

Yes. The SPARC Author Addendum is a legal instrument that modifies the publisher's agreement and allows you to keep key rights to your articles. It is available at the following web address:

www.arl.org/sparc/author/addendum.html .

Other resources include:

MIT copyright amendment form: <http://libraries.mit.edu/about/scholarly/copyright-form.html>

Science Commons Scholar's Copyright project: http://sciencecommons.org/literature/scholars_copyright

OhioLINK Author Addendum (pp. 7-8): <http://www.ohiolink.edu/journalcrisis/intellproprescaug06.pdf>

University of North Carolina: <http://www.hsl.unc.edu/Collections/ScholCom/Documents/UNCAuthorPubAgrmt.pdf>

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Step 3

Submit your manuscript to the Archive

To submit your manuscript for archiving at NIH PubMed Central and archiving FAQs use this link: www.nihms.nih.gov . Submission process at different archives may vary. It may include registration for the usage of the archive submission system, typing the article metadata (full citation of the original publication, keywords, authors and their affiliation, related published works citations), uploading manuscript text, image and other files, getting a submission receipt, and approval of the converted manuscript after its' processing by an archive administrator.

General rule is that submission process is user-friendly, won't take much time, and does not require re-formatting of the final manuscript text file

Step 4

Enjoy free Open Access to your article and get deserved benefits

The sad reality is that publication of your article in top and most credible science journal does not automatically mean your research will get deserved attention by peers.

For example, FASEB Journal article by Koudinov and Koudinova (published in 2001) in half a year got a readership of just 500. Bad indexing in Medline of the FASEB J section called “FASEB J Express articles” apparently added to the problem as did article toll access. My another article 2001 published in the authors’ self-archiving division of Br Med J, called BMJ’s Clin Med Health Res got much greater readership.

Today, prompt indexing of archived articles in major general public and science databases makes sure your contribution won't be missed. For example, at Google Scholar (<http://scholar.google.com>) certain article reference has several links when available from different sources. This may include links to a fulltext at a publisher web site, institutional record, and the copy of the article, archived elsewhere.

At PubMed Central articles deposited by authors become integrated with PubMed/Medline. This is a wonderful feature, ensuring immediate Open Access to your research. Is this fantastic? Yes, it is. Because everyone with a computer and an internet connection (be he/she a US university professor, lay person in a developing country or a keen student of a colleague with poor library resources) can access fulltext of your works for free. Try searching PubMed for “Matsumura Y, Byrne SN” to see an example.

PART 2: PUBLISH YOUR RESEARCH IN AN OPEN ACCESS JOURNAL

Despite significant growth in the number of research papers available through Open Access (principally through author self-archiving in institutional archives, see above), it is estimated that only 20% of the number of papers published annually are Open Access. It is up to the authors of papers to change this.

We describe above that scientists who publish in conventional journals can easily provide Open Access to the same articles by depositing them in Open Access archives. Another authors' option is to publish their research in one or another Open Access Journal.

WHAT ARE OPEN ACCESS JOURNAL ADVANTAGES?

The advantages of an Open Access journal are compelling:

- 1.** Articles in OA Journals are accessible to everyone with an internet connection; authors reach larger audiences and have greater impact; no permission is needed for copying, printing, distributing, storing or other educational uses; copyright remains with authors.
- 2.** Open Access does not violate copyright, but uses the consent of the copyright holder.
- 3.** Open Access journals are peer-reviewed and use the same high standards (ex. World Association of Medical Editors, WAME, www.wame.org) as conventional journals.

- 4.** Open Access journals are indexed in major databases (ex. National Institutes of Health, National Library of Medicine PubMed; ISI Science Citation Index) and major search engines (Google, Google Scholar, Yahoo, MSN).

- 5.** Open Access journals may deposit (on behalf of authors) copies of their articles in central archives (ex. PubMed Central), enhancing their preservation/availability.

- 6.** Open Access is supported by major science funding bodies, such as NIH and Howard Hughes Medical Institute (USA), the Wellcome trust (UK), the Max Planck Society, the DFG (Germany), the CNRS and INSERM (France).

BEWARE OF COMMON MISUNDERSTANDING ABOUT OPEN ACCESS JOURNALS

OA Journals are not free to produce. OA journals pay their bills very much the way broadcast television and radio stations do: those with an interest in disseminating the content pay the production costs upfront so that access can be free of charge for everyone with the right equipment.

Sometimes this means that journals have a subsidy from the hosting university or professional society. Sometimes it means that journals charge a processing fee on accepted articles, to be paid by the author or the author's sponsor (employer, funding agency). OA journals that charge processing fees usually waive them in cases of economic hardship. OA journals with institutional subsidies tend to charge no processing fees. Some OA publishers (BioMedCentral.com and PLoS.org) waive the fee for all researchers affiliated with member institutions.

A major misunderstanding is that all OA journals use an "author pays" business model

There are two mistakes here. The first is to assume that there is only one business model for OA journals, when there are many. The second is to assume that charging an upfront processing fee is an "author pays" model. In fact, fewer than half of today's OA journals (47%) charge author-side fees. When OA journals do charge fees, the fees are usually paid by author-sponsors (employers or funders) or waived, not paid by authors out of pocket. This misunderstanding is harmful because it makes authors wonder whether they can afford to pay the fees and gives OA opponents a chance to spread FUD.

As Wikipedia says, FAD stands for "Fear, uncertainty, and doubt". It is a sales or marketing strategy of disseminating negative (and vague) information on a competitor's product. The term originated to describe misinformation tactics in the computer hardware industry and has since been used more broadly. FUD is a manifestation of the appeal to fear.

Please note that some conventional non-OA journals (including SfN's Journal of Neuroscience) charge publication and color image fee. See J. Neuroscience www.jneurosci.org/misc/ifa_charges.shtml for details

OPEN ACCESS JOURNALS ARE ECONOMICALLY SUSTAINABLE AND SAFE TO PUBLISH AT

Financial Analysts and those, who publish Open Access journals feel confident that OA journals are economically sustainable. Oppositely, rapidly rising conventional journal prices have been denounced by leading research universities (Harvard, Stanford, Cornell, Duke, more), found dysfunctional/unsustainable by independent financial analysts (PNB Paribas, Citigroup, Credit Suisse), and were under investigation by Governments and Public institutions. This is because the true costs of peer review, manuscript preparation, and OA dissemination are considerably lower than the prices we currently pay for subscription-based journals.

WHICH OPEN ACCESS JOURNAL TO CHOOSE?

**For a list of OA journals
in all fields and languages, see the Directory of Open
Access Journals, www.doaj.org**

It is important to know that some journals are entirely Open Access (ex. PLoS Biology, Neurobiology of Lipids, BMC Neurology), and that some conventional journals are experimenting with Open Access. While these journals retain toll access for a majority of their content, they promise to provide Open Access to selected articles when authors agree to cover the associated costs (ex. PNAS).