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36<sup>th</sup> Society for Neuroscience Meeting

Teaching in Neurosci session # 26.3, Part 2

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## **PROPOSAL 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 Nature, Science, The Scientist, and The Wall Street Journal. Rapidly rising conventional (i.e. subscription access) journal prices have been denounced by leading universities and found dysfunctional by independent analysts. The OA movement includes the development of OA journals and OA archives. OA accelerates research, shares knowledge, improves the usefulness of scholar literature and global scientific heritage. Wider development of Open Access depends on educating the scientific community about its benefits. The present project will set a primer of run by scholars non-profit fully integrated two OA science journals and nation-wide OA archive.

# INTRODUCTION

**In a recent Financial Times article Arie Jongejan, CEO, Science & Technology, Elsevier (Financial Times, May 26, 2004, p.16, Ref.1 [See “Section 6: Enclosures” for the complete Cited Works list and web addresses]) stated that "the scientific community has achieved a stable, scale-able and affordable system of [Scientific, Technical & Medical (STM)] publishing that adapts and invests in its information needs".**

**Apparently, the article by Reed Elsevier top official in a leading UK financial newspaper targeted investors and legislators, and aimed to preserve the centuries-long conventional STM publishing business where Elsevier presently is a biggest player.**

**What Elsevier S&T CEO calls "a stable ... and affordable system of [STM] publishing" put University Senates across US, in Europe and elsewhere in great distress, resulted in a wave of cancellations of many subscription-access journals by leading Universities (Harvard, Stanford, Cornell, Duke, more, Ref.2), found dysfunctional and unsustainable by independent financial analysts (PNB Paribas, Citigroup, Credit Suisse, Ref.3-5), and was recently under**

**investigation by Science and Technology Committee of the United Kingdom (UK) House of Commons, and The appropriations committee of the US House of Representatives (Ref.6).**

**An unaffordable pricing and subscription bundling of Elseviers' Cell Press journals with other Elsevier journals are the reasons for leading scientists' call to boycott (Ref.7) these serials by all those who actually make a scientific publication a prestigious journal, i.e contributors, peer reviewers, and editorial board members. The latter fact made evident the academic world unity in opposing the spiralling cost of subscription based journals and giving away the**

**ownership in the scientific publication (a scientists' ultimate output) in a form of a copyright transfer to a publisher.**

**I agree with Daniel Greenstein (Associate Vice Provost, Scholarly Info, University of California; University Librarian, Systemwide Library Planning & California Digital Library, Ref.8) that "the business model of commercial publishing, which once served the academy's information needs, now threatens fundamentally to undermine and pervert the course of research and teaching... If business as usual continues, it will deny scholars both access to the information they need and the ability to distribute their work to the worldwide audience it deserves."**

**"The formula works, so don't tinker with it" argues FT article headline. Sadly, there is a discrepancy between Elsevier S&T CEO quote of "the stability of an efficient market" and his publishing house recent statement. Thus, just several months ago, on Dec. 3, 2003, Elsevier Today (Ref.9) announced that "the existing S&T portals, BioMedNet, ChemWeb, ElsevierEngineering.com will be withdrawn... [and that] this difficult decision has been made in the context of an extremely challenging budget brought about by the continued tough market conditions."**

**The business will apparently never continue as usual for subscription-based STM publishers. This is because the Internet Age raised Open Access (OA), that is the online access to scientific scholar journal literature, free of charge and free of most copyright and licensing restrictions.**

**An OA journal advantages are obvious. Copyright usually remains with authors, so OA publisher does not violate copyright law, but uses the consent of the copyright holder, allowing articles' unlimited usage for both scientific research and educational purpose. OA journal quality is warranted by the conformity in fulfilling high standard policies (ex. World Association of Medical Editors, WAME,**

**Ref.10) and the peer review. OA journal indexing in major databases (ex. NIH PubMed, Thomson ISI Science Citation Index, Refs.11,12) is subjected to rigorous selection process equal for all journals. To enhance the sustainability, OA journals can deposit articles in central archives and depository libraries (ex. PubMed Central by the National Library of Medicine USA and its sister archive to be soon implemented in the United Kingdom, Ref.13).**

**Open Access critique is based on the publication fee by some OA publishers "such as BioMedCentral (BMC, Ref.14) in the UK and Public Library of Science (PloS, Ref.15) in the US" as exemplified in the FT article. It is more accurate, however, to identify OA as funded**

**by sources other than subscription revenues. Only a portion of OA journals has a publication fee, representing an 'authors-pay' business model of OA publishing. However, of a thousand OA journals listed in the Directory of Open Access Journals (DOAJ, Ref.16) many have no publication charge. There are different funding models for this category of Open Access journals (ex. University, Learned Society or some grant support).**

**While Open Access movement became powerful, subscription based journals are engaging in experimentation with OA, with the recent most illustrative example by The Proceedings of the National Academy of Sciences USA (PNAS, Ref.17), the flagship journal of the**

**National Academy of Sciences. "The benefits to science of unfettered access to the literature are obvious and unassailable," says PNAS Editor-in-Chief Nicolas Cozarelli, in the editorial announcing "[authors-pay] OA option for PNAS contributors (June 8, 2004 p. 8509, Ref.18), whereby authors may pay a surcharge of \$1,000 to make their article freely available online upon publication... Although I have no doubt that open access will be made to work for much of the scientific literature, I am not sure how," adds Professor Cozarelli.**

**In another editorial (Aug 16, 2004, Ref.19) PNAS Editor further announced "liberalization of PNAS copyright policy: non-commercial use [of publications is now] freely allowed".**

**Ironically, one way of OA, a deposition of articles in Open Access archives, was recently accepted by Elsevier, according to the letter by Karen Hunter (Elsevier Senior Vice President, Strategy) cross posted at several OA discussion boards (May 23, 2004, Ref.20). According to this announcement "an author [of "published articles, whether published electronically or in print"] may post his or her version of the final paper on personal web site and on the institution's web site (including its institutional repository)..."**

**Such a mechanism of Open Access whereby authors (in addition to publication in peer-reviewed journals) deposit their articles in OA institutional repositories, was one of 82 recommendations and specific conclusions of the UK House of Commons Sci Tech Committee report "Scientific Publications: Free for All?" (July 20, 2004, Ref.21). The committee held a thorough inquiry for half a year, conducted four sessions of oral testimony, hearing from 23 witnesses, and received 143 written submissions. It heard from leaders in research, libraries, universities and publishing (including those from the US) who put forward their arguments for and against OA.**

**At the same time, on July 14, 2004 the US House Appropriations Committee adopted a set of recommendations for next year's federal budget (Ref.22). One key recommendation would have the National Institutes of Health (NIH) put a condition on its research grants so that articles based on NIH-funded research would be deposited in PubMed Central, the NIH's OA digital library. As a result, on May 3, 2005 NIH introduced its' new Public Access Policy that asks authors to deposit NIH funded manuscripts into PubMed Central in addition to their prior publication in one or another peer-reviewed journal.**

**Of major importance is the "strong support for the House Appropriations Committee's direction to NIH to develop an open,**

**taxpayer access policy" by a panel of twenty five Nobel prize winners. Quoting Nobel Laureates Open Letter to the U.S. Congress (Aug 26, 2004, Ref.23): "The trend towards open access is gaining momentum. Japan, France and the United Kingdom are beginning to establish their own digital repositories for sharing content with NIH's PubMed Central. 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... We specifically ask you to support the House Appropriations Committee language as well as NIH leadership in adopting this long overdue reform."**

# PROJECT BACKGROUND

In addition to OA archives and OA journals by big publishing houses (such as non-profit US PLoS and for-profit UK-based BioMedCentral) there is a different Open Access experience. It is provided by the Neurobiology of Lipids (NoL), a non-profit independent scholar serial that I organized, publish and lead as managing editor with no help of a commercial publisher or any online journal publishing provider (ex. Highwire Press, ScholarOne, Ref.24).

Neurobiology of Lipids concept is that OA can benefit the Society as a non-profit model for cost-effective independent scholar journals with no publication charge (see below). NoL takes the advantage of an irreversible Internet and desktop publishing technology development and their end user availability at low cost.

Similarly to other OA journals, NoL serves all its' content free of charge immediately upon publication. NoL, however, welcomes free voluntary registration by readers in order to build the community of scholars working on or interested in the subject of the journal scope. NoL mission is "to provide worldwide leadership in advancing the knowledge of the neurobiology of lipids and its application to health care." Fats and cholesterol neurobiology may be well causative to Alzheimer's disease and several other brain pathologies, as my group pioneering research (published previously in FASEB Journal, Science magazine and other peer-reviewed publication) and studies by others showed several years ago. NoL has no analogy among other neuroscience or lipid research publications. Perhaps, this is in part a reason an online readership of NoL is comparable with the readership of the worlds' major Journal of Lipid Research (JLR, [www.jlr.org](http://www.jlr.org)) published since 1959 (four-months average of 52.716 hits per month for NoL vs. 140.000 hits per month for JLR).

Lately, Neurobiology of Lipids publishing experience was translated into the launch of the Doping Journal , another independent OA scholar journal, debuted during the Athens Olympic games 2004. Both journals are running at a net annual cost below a publication fee of one article at BioMedCentral. Yet there are important steps to undertake to make Neurobiology of Lipids and The Doping Journal attractive for contributors.

These journals further development and global integration (see Specific Aims below) represent Goal 1 of the present award application.

Goal 2 will be the development of the Israel Scholar Archive, where every Israel and/or Jewish scholar could personally permanently archive his or her creative work, and make it freely available for peers and for the public. More info on Israel Scholar Archive is available below.

While wider adoption of Open Access depends on educating the scientific community about its benefits, the wider dissemination of independent publishing in the Neurobiology of Lipids way depends on still missing academic education about the technology and its' end-user friendly capabilities. The commercial publishers (both traditional, i.e. Subscription Access, and Open Access) apparently are not interested in educating the academic world about the ease of the modern electronic publishing, an apparent critical issue to safeguard the commercial publishing cabal (Ref.25).

Therefore, educational courses on independent publishing technology should be developed and included in higher education curriculum. Furthermore, I believe that grant funds, faculty opportunities and academic education for independent publishing should be a priority for governments, charitable institutions, libraries, and academic institutions.

To facilitate the development of new independent Open Access scholar publications I am committed to provide necessary advisory for quality editorial groups willing to establish and independently run OA non-profit scientific journals. Goal 3 of this project therefore represents the development of educational materials explaining our experience of an independent journal publishing and archiving. This information will be delivered to scholars in a number of ways as detailed below. Specific Aims include:

## **SPECIFIC AIM 1**

### **Journals Archiving in PubMedCentral**

Full-text article archiving of both journals in NIH PubMedCentral (PMC). It is important to notice that Neurobiology of Lipids recently met NIH National Library of Medicine USA editorial quality requirement for PMC archiving, and was welcomed to work on meeting technical issues

of journal archiving in PMC. As soon as The Doping Journal employs similar highest quality editorial standards it is feasible that it will be also eligible for archiving in PMC (Goal 1).

While Neurobiol Lipids articles are fully indexed in Chemical Abstracts by the American Chemical Society, Directory of Open Access Journals, BIOSIS, Google Scholar and other bibliography databases (including National Library of Medicine (NLM) catalog), archiving in PMC will include most important indexing in PubMed, a universal resource for article search for the global biomedical community.

## **SPECIFIC AIM 2**

### **Journals and Israel Scholar Archive Content Management Software Development**

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To make a non-profit electronic science journal publishing easy this project will include the development of a new article/content management interface by a professional programmer. This will result in a simple manuscript view by peer-reviewers during the peer-review process (eliminating the need for a present email communication and manuscript attachments). Most important such content management development will provide software basis for automatic conversion of the submitted articles into the modern XML format suitable for archiving articles in NIH PubMedCentral. The developed software will be reported in a scientific publication and will be available at no cost for all those willing to use it for journal publishing or archiving.

## **SPECIFIC AIM 3**

### **Israel Scholar Archive Development**

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The content/management software code will be also modified to yield a version suitable for Israel Scholar archive article submission and publishing.

Unfortunately, there is no Institutional or National science archive in Israel. My earlier attempts to make Information Services officials of major Israel Universities interested in Open Access failed. I therefore decided to set Israel Scholar, a web based independent non-profit educational resource that aiming to promote and unite global Israel Scholarship. In addition to OA advocacy (available at Israel Scholar Communication Scrolls at <http://israelscholar.org/openaccess> ). Israel Scholar Archive will provide a place where every Israel and/or Jewish scholar will be able to personally permanently archive his or her creative work (ex. Research article published previously in a peer-review subscription access journal), and make it freely available for peers and for the public. The basic pages of Israel Scholar Archive (About and

Preparing for Contribution) are available at <http://israelscholar.org/> . The later page (<http://israelscholar.org/works/submissions/ifora1.html>) explains the terms and conditions for articles deposition in Israel Scholar Archive. When the content management software is developed, the Archive will start accepting articles for archiving. Such software will ensure that all articles in Israel Scholar archive, regardless of their original format, are converted into a single, explicit, and well-specified data format. Similarly to the Neurobiology of Lipids and The Doping Journals, we intend to use the Article Archiving Extensible Markup Language (XML) Document Type Definition (DTD) developed by the National Library of Medicine (NLM) USA.

The article postprint publication at Israel Scholar Archive will be followed by its indexing in a variety of search engines, ensuring its easy access by peers and the public.

## **SPECIFIC AIM 4**

### **Educating others about non-profit end-user availability of Open Access journal publishing and archiving, nationally and globally**

Unfortunately, commercial (both traditional and open access) publishers are not interested in making the society and scholars educated about the ease of the electronic publishing. This is why I believe educational courses on independent publishing technology should be developed and included in higher education curriculum. The present project will help this happen in a number of ways.

First, we will prepare educational materials on every aspect of non-profit electronic journal publishing and development (ex. editorial group assembly, ISSN registration, American Chemical Society, PubMedCentral, DOAJ and other database indexing and archiving). These materials will be posted at both journals web sites for free access by every interested individual, and will be advertised at a variety of related web sites using Google AdWords advertising program. Furthermore, Neurobiology of Lipids and Doping Journal non-content pages templates and article management solutions will be available for free use by editorial groups establishing their non-profit journals.

Educational mission of both journals will be expanded with the appointment of assistant editors. The minimum qualification for this educational part-time position will be an enrollment in a PhD Program (2+ year) in a relevant area of biomedical research. Assistant editor will

be responsible for the selection of the noteworthy articles published in other journals, will oversee the entire editorial process, preparing news stories and/or lay summaries, and the subject news mining. In my view this will be a great opportunity to grow new generation of scholars-of-tomorrow, who will first-hand know of Open Access journal publishing, and will hopefully lead future STM publishing.

Second, we will advocate for Open Access publishing and archiving at a national Israel academic arena. Unfortunately, there is a lack of Open Access movement among the members of the academia in Israel. Moreover (and in contrast to the rest of the world), Israel academic libraries do not lead Open Access development. I myself contacted Information Services heads of major Israel Universities. None of them expressed any interest to talk on Open Access issues, and make their faculties and students systematically educated about the modern trends in scientific publishing. This is why the present project will fill the existing

gap. For this purpose two of the project co-workers will be public relation specialist and librarian partner. They will be organizing and presenting teaching lectures about Open Access benefits, and Israel Scholar Archive availability among the members of Israel academic institutions for graduate and undergraduate studies, and librarian community, respectively.

### **FULL APPLICATION IS AVAILABLE UPON REQUEST**

This project as competitive award application of "merit" (submitted to The Rolex Awards for Enterprise 2006) reached final evaluations step by Rolex Awards committee. "The Rolex Awards support exceptional men and women who are breaking new ground in areas which advance human knowledge and well-being," - Rolex Awards Official Web site says. This project, however, was not funded and therefore open for support by other interested organizations. Full application and any additional info are available upon request.