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Scientific writing

Petr Karlovsky



Scientific writing

- Journal selection
- Traditional publishing versus Open Access
- Journal Impact Factor and journal ranking
- Publishing machine-readable data
 - ▶ Data repositories
 - ▶ Standards
- Publication as a commodity
- Citations: code of practice
- Open source software in scientific publishing
- Literature management



Primary criteria for journal selection

- Peer-reviewed
- English, internationally visible
- Open Access (immediate vs. delayed)
- Covered by relevant databases
- Journal Impact Factor
- ISI-list and its shortcomings



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Traditional scientific publishing

■ Publishers

- ▶ Traditional scientific publishing
- ▶ Costs
 - Average page number (long- and short- term trends)
 - Color vs. B/W figures (copier restriction, see NAR)
 - Circulation & costs of subscription: positive feedback
- ▶ New economical constraints: Elsevier as example
- ▶ Scientific societies as publishers
- ▶ Online vs. printed access

■ Peer-review process

- ▶ Role of editors and reviewers



"Die Journalbranche hat Gewinnraten wie
der Waffen- und Drogenhandel"

(Gerhard Fröhlich, Universität Linz, 2007)



Traditional scientific publishing

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Traditional scientific publishing

- Copyright
 - ▶ Intellectual property protection
 - ▶ Copyright transfer
 - ▶ Old and new copyright law
 - ▶ Can I place pdf-reprints on my website? **LINK**
 - ▶ Exeptions from copyright rules
- Public domain
- Creative Commons **LINK**
- Patent as a publication



Open access publishing

- Internet and a new paradigm of information sharing
- Open access concept
 - ▶ Right to access, copy, use, distribute, display publicly...
 - ▶ Right to generate derivative work, metadata...
 - ▶ Non-revokable
 - ▶ Interactive peer-review (experimental)
- Copyright issues in Open Access
 - ▶ Author-owned copyright
 - ▶ Shared Copyright: Creative Commons
 - ▶ Transfer of copyright & author licence



Open access publishing

- Open access promotion (**LINKS**)
 - ▶ Berlin initiative, Bethesda statement, Budapest declaration, DFG statement, university policies EU...
 - ▶ The role of granting agencies (NIH...)
 - ▶ Dedicated depositories (PubMedCentral)
 - ▶ Distributed depositories
 - o Dissertations
 - o Published manuscripts
 - o Reports
 - ▶ New DFG policy on OA



Dissertation: Electronic or printed?

Shaker

Cuvillier

Tectum Verlag

VDM Verlag

...

Subject: Kostenlose Veröffentlichung Ihrer besten Arbeiten
Date: Thu, XX Xxx 2008
From: Xxxxx Xxxxxx <x.xxxxx@xxx-verlag.de>
To: xxxxxx@gwdg.de

Sehr geehrter Herr Prof. Dr. Karlovsky,

bei einer Recherche fand ich eine von Ihrem Lehrstuhl betreute Arbeit
"Xxxxx xxxxx xxxxx xxxxxx... " von Xxxxx Xxx Xxxxxxx...

Wie Sie wissen, sind Publikationen für die akademische Laufbahn von entscheidender Bedeutung. Der XXX-Verlag ist sehr daran interessiert, Ihren Absolventen die Möglichkeit zu geben, kostenlos und sogar mit Gewinnbeteiligung eine Publikationsmöglichkeit zu bieten...



Open access publishing

■ Financing models

- ▶ Genuine OA publishers
 - BMC: \$500 - \$2400
 - MDPI: 800 CHF (500 €)
- ▶ Traditional publishers
 - Springer: OpenChoice \$3000
 - Elsevier: \$3000
 - Wiley/Blackwell: OpenChoice \$3000
 - Taylor & Francis: iOpenAccess \$3250
- ▶ Black sheeps: OA as a money-making business model



Economics of OA publishing

Competition

- Traditional publishers compete for subscribers
- OA publishers compete for authors



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Journal Impact Factor

- Impact Factor
 - ▶ ISI, Thomson Corporation (**LINK**)
 - ▶ Differences among research fields, normalization of IF
 - ▶ Effect of open access on journal impact (**LINK**)
 - ▶ False "Impact Factors"
- New evaluation systems: web access count (**LINK**)
- Evaluation of scientists: H-index

Subject: DAAD_Fellowship
Date: Xxx, XX Xxx 2008
From: Xxxx XXXX <xxxxxxx@yahoo.ca>
To: xxxxxx@gwdg.de

Dear Prof. Petr Karlovsky, PhD,

greeting, i'm Dr. Xxxxx XXXX, PhD. I 'm working as a senior scientist
in... I has published 65 scientific publications...

...

Would you kindly send me your agreement and a letter of acceptance...

Xxxxx XXXX

The future of ISI Impact Factor?

Philadelphia , PA - May 27, 2008 — The Scientific business of Thomson Reuters today announced that 700 new regional journals have been added to Web of Science. The newly identified collection contains journals that typically target a regional rather than international audience...

Press Release
Thomson Reuters

Can I increase IF artificially?

Journal Citation Reports® Notices 2009

Due to the significant effect of self citations on their Impact Factors, metrics for a number of titles were not published in the 2009 JCR. Suppressed titles were found to have exceptionally high self citation rate, some over 90%...



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New publication medium and forms

- Large-volume data: omics technologies, natural product chemistry, biological systematics...
- Computer-readable data
- Web-accessible databases & integrated tools
- Open standards for data archives
- Citation counts without traditional papers
- Current standard: publish paper **AND** deposit data

The logo for POSsum, where 'P' is red, 'O' is yellow, 'S' is purple, and 'Σ' is black.

The portable omics data standard

What is POSsum?

The POSsum initiative aims for a universal file-based exchange format for various biological datatypes. POSsum was started at the beginning of 2005 and was born out of frustration on the huge diversity in data file standards within the field of genetics. Genetical analysis software packages are typically fed with raw data in flat file format, from which the format tends to be specific and unique for each individual package.

The aim to create a universal data standard has grown to the ambition of the current POSsum project: a file system, resembling the Acrobat PDF format and reader software to visualize the contents. The main present focus is on genetical data types such as:

- Raw genotyping data
- Locus segregation data
- Recombination frequencies & LOD scores
- Genetic distances
- Genetic maps
- Dendrograms



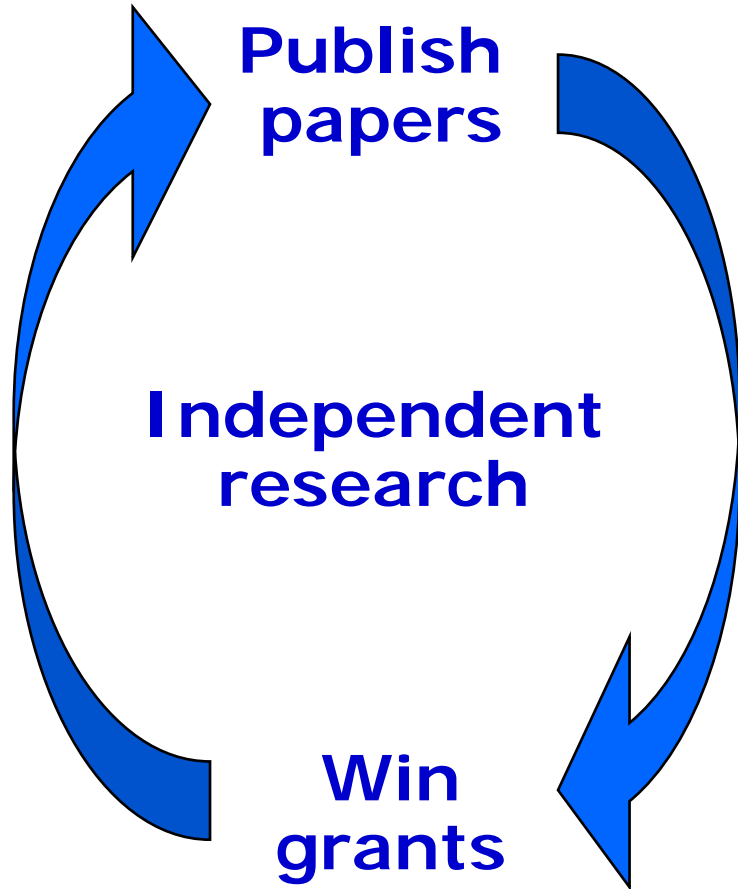
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**Publish
papers**

**Win research
grants**







Publications & citations as a commodity

Publish or perish

Scientific capital used to generate more capital

Negative effects:

- (Misconduct, fraud)
- (Plagiarism)
- (Honorary authorship)
- "Publicationism"
- "Citationism", selective reference omission



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Open **source** and scientific publishing

- Proprietary vs. open source software
- Open Standards: real and fictitious
- Word processor, spreadsheets & presentation:
MS Office vs. Open Office (**LINK**) and TeX (**LINK**)
- Image processing:
Photoshop vs. GIMP (**LINK**)
- Chemical formulas
ChemDraw vs. ISIS Draw (**LINK**) & ChemSketch (**LINK**)
- Bibliography management
EndNote versus Zotero (**LINK**)

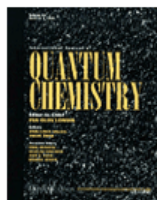


Open **source** and scientific publishing

- Zotero: Bibliography software
 - ▶ Retrieval: web databases, pdf files, bibliography files
 - ▶ Indexing & Search
 - ▶ Export of bibliographies

Comparison to EndNote:

- + Accommodates many kinds of items/files
- + Open Source
- + Extracts information from pdf
- Does not support word processor during manuscript writing



International Journal of Quantum Chemistry

Volume 16 Issue 4, Pages 847
 Published Online: 19 Oct 2004
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Brassica napus Carboxylic Ester Hydrolases
 Computational Biolnrv Densitometr DNA Primers

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The tryptophan aminotransferase Tam1 catalys...	Zuther et...	2008	2008	1

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Journal Article

Title: Role of zearalenone lactonase in protection of Gliocladium roseum from fungitoxic effects of the mycotoxin zearalenone

Author: Utermark , Jan - +

Author: Karlovsky , Petr - +

(...) Abstract: Zearalenone is a mycotoxin with...

Publication: Applied and Environmental

Server Type IP Address