

Trends in Scientific Publishing

Guenther Eichhorn

Director Abstracting & Indexing

Cambridge, MA April 2010

Overview

- Digitization
- Searching
- The role of a scientific publisher
- New Products and Capabilities
- Business models are changing
- Future

All content digitized

146,000 articles/yr

1842
Springer-Verlag
founded

1996

“Digitize all
journals going
forward!”

2004

“Digitize all
journals going
backward!”

Journals

1860 1870 1880 1890 1900 1910 1920 1930 1940 1950 1960 1970 1980 1990 2000 2010

Books

2006

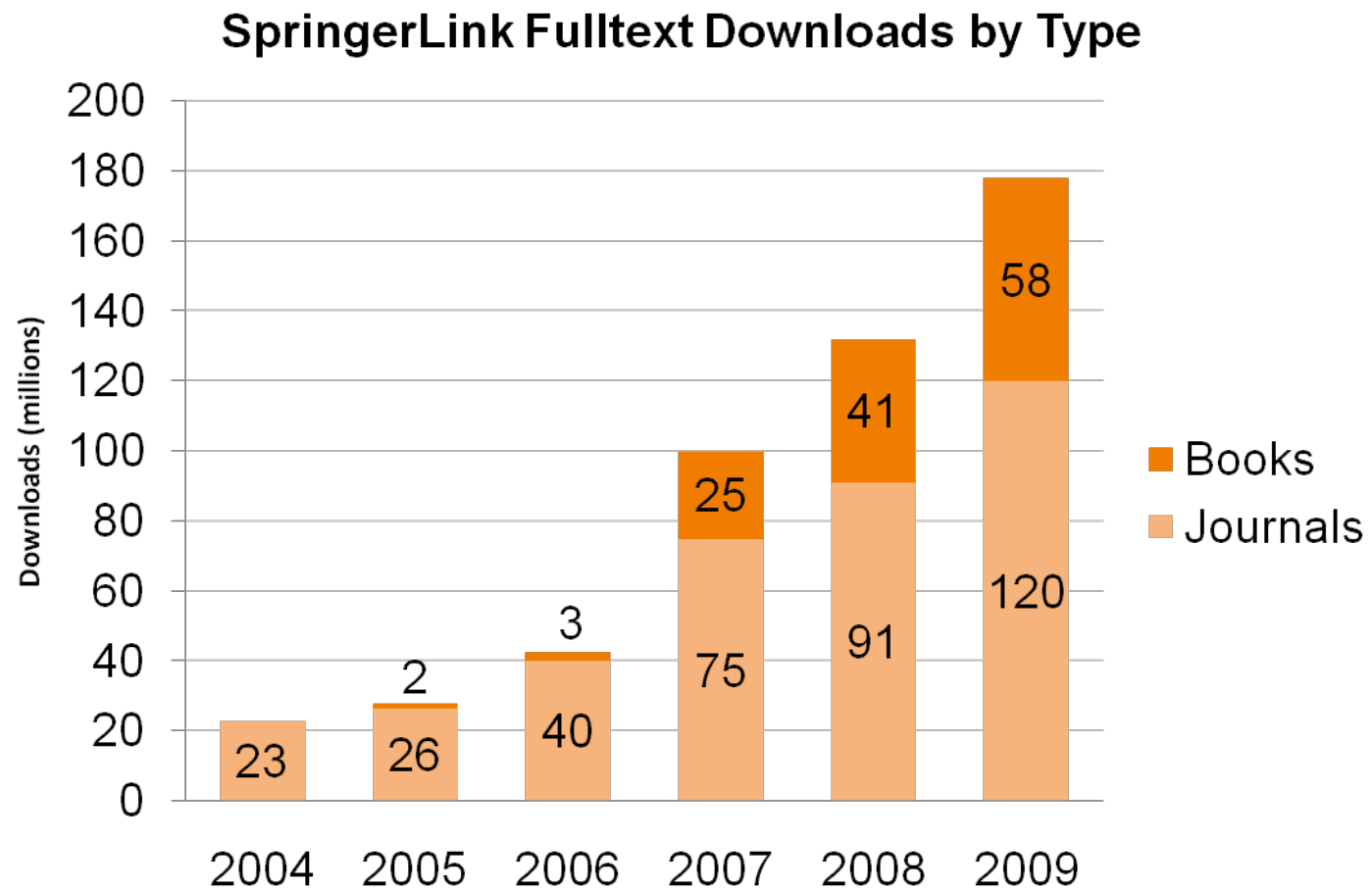
“Digitize most
books going
forward!”

2009

“Digitize all books going
forward and a lot of
books going backward!”

5,000 books/yr

Our audience is **reading** digital...



Google is
most popular
search engine



Google's share of traffic by Springer site

65%



79%

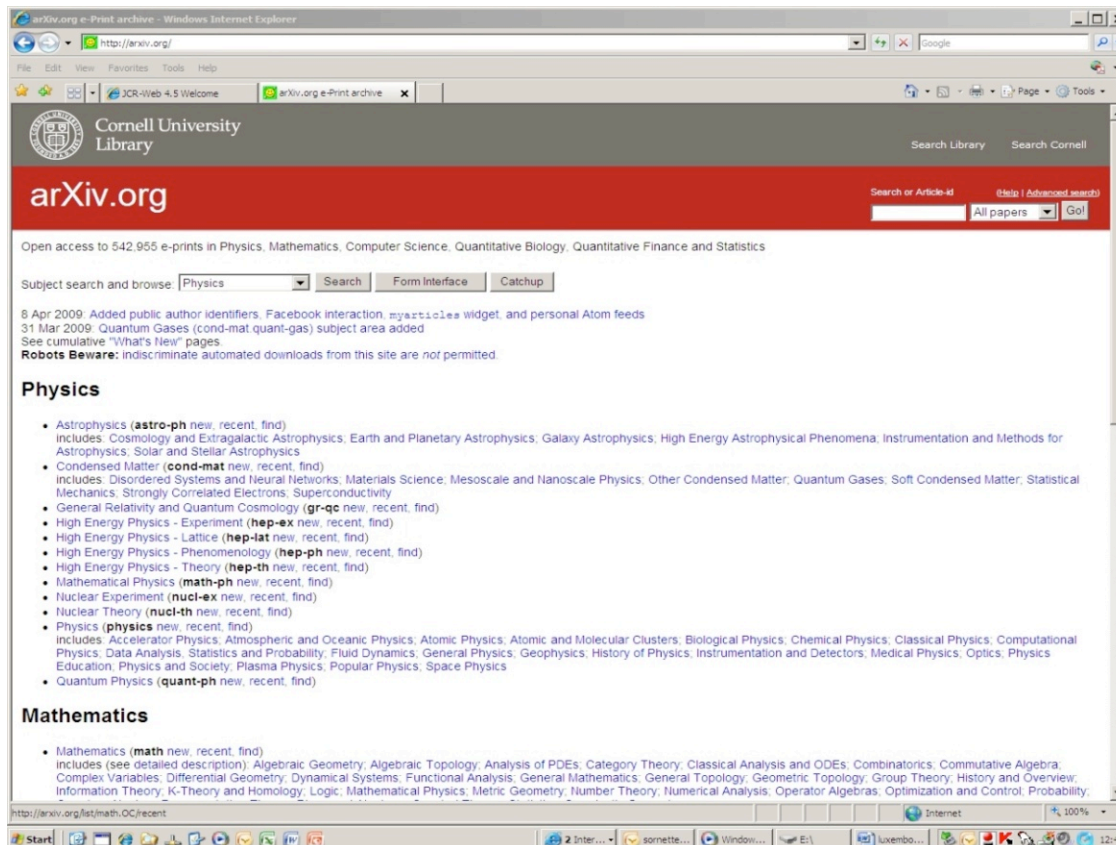
The logo for SpringerProtocols, featuring the Springer logo (a chess knight) and the text "SpringerProtocols".

83%

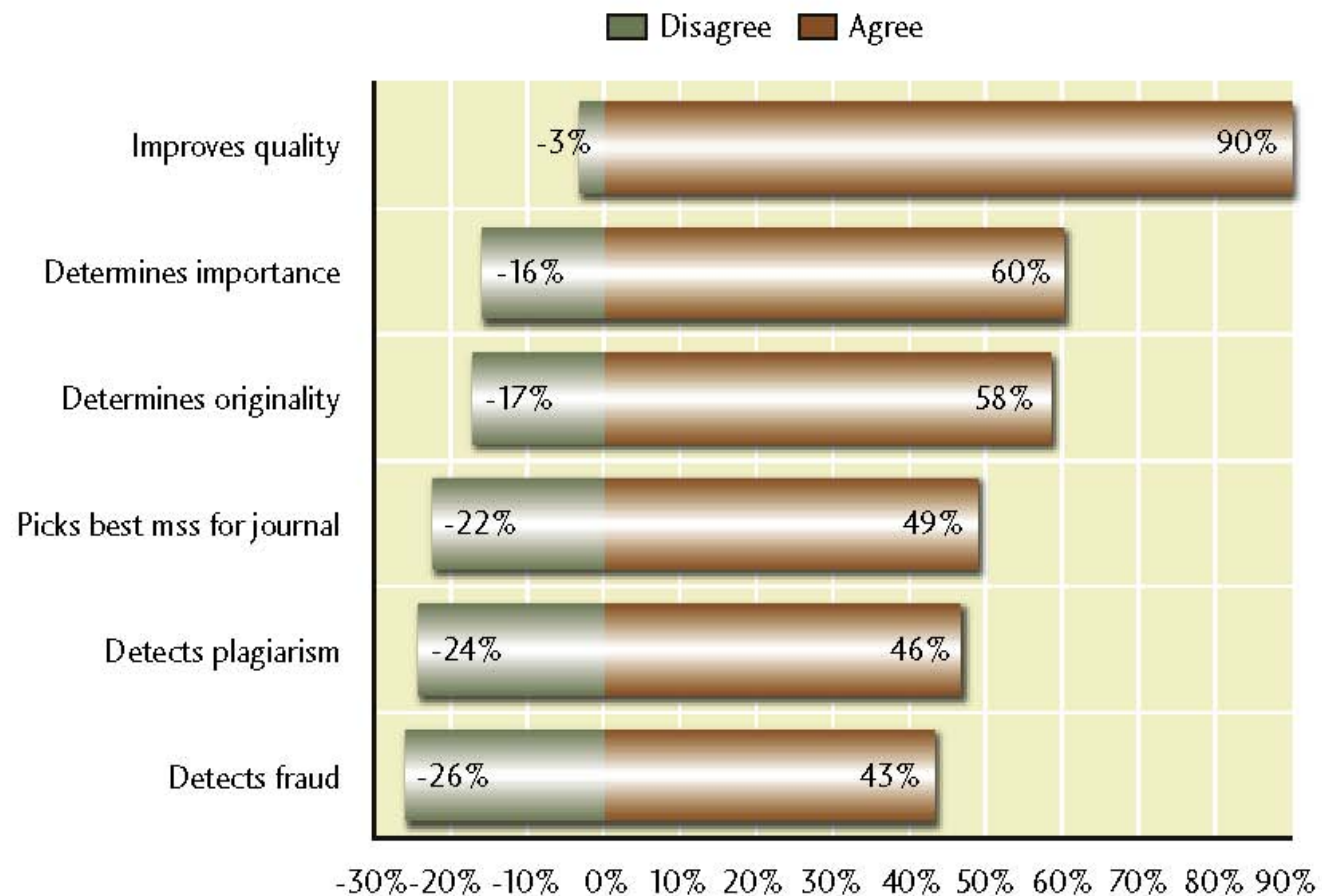


Different role of Publishers

First hand distribution of primary scholarly information has disappeared from the publisher's list of service in some disciplines (arXiv).



Quality Assurance: Peer-Reviewing



Metadata

Metadata for scientific documents comprise a number of attributes:

authorship, affiliation, journal name (ISSN), manuscript number or pagination, article category, keywords, citation line, year of publication, DOI, references...

The uniform quality and international standards of metadata are of paramount importance in a global e-publishing system.

A Publisher like Springer distributes the metadata, across all disciplines, to hundreds of various abstracting and indexing services, such as:


- Web of Science (Thomson ISI)
- Scopus (Elsevier)
- Medline, PubMed (US National Library of Medicine)
- INSPIRE
- ADS

Consistency is also needed for *durable archiving* (e.g. by Portico).

Improve on core products

Journals innovation

Journal Article



| | |
|------------------------------------|----------------------------|
| PTPRR Protein Tyrosine Phosphatase | The Cerebellum |
| Journal | The Cerebellum |
| Publisher | Springer Nature |
| ISSN | 1473-4222 |
| Issue | Volume 8, No. 1 |
| DOI | 10.1007/s12035-017-0001-0 |
| Pages | 80-88 |
| Subject Collection | Biomedical Sciences |
| SpringerLink Date | Saturday, January 14, 2017 |

Open Access

PDF (300 KB)

Wiljan J. ...

SpringerLink Date

Open Access

0.5 KB) HTML Su

Books innovation

**Buy a print copy
of this book for \$24.95**

Because your library provides access to Springer eBooks, you can have this book delivered to you from SpringerLink for just **\$24.95 including shipping.**

Add to shopping cart now

Platform innovation

SpringerLink

SEARCH FOR **ALL CONTENT**

AUTHOR PUBLICATION TITLE VOLUME ISSUE PAGE

HOME MY SPRINGERLINK BROWSE TOOLS HELP

BROWSE 4,426,600 Content Items

BROWSE PUBLICATIONS BY CONTENT TYPE

| | | | |
|--|----------|-------------|--------|
| Subject Collection | Journals | Book Series | Books |
| <ul style="list-style-type: none"> Architecture and Design Behavioral Science Biomedical and Life Sciences Business and Economics Chemistry and Materials Science Computer Science Earth and Environmental Science Engineering Humanities, Social Sciences and Law Mathematics and Statistics Medicine Physics and Astronomy Professional and Applied Computing | 2,089 | 1,026 | 31,964 |

BROWSE PUBLICATIONS BY TITLE

A B C D E F G H I J K L M N O

FOR AUTHORS

FOR LIBRARIANS

Learn more about the benefits of publishing with Springer...


Stay current on new products offered by Springer...

Featured Library

- Chinese Library of Science
- Russian Library of Science



[springer.com](#) [springerprotocols.com](#) English [Go](#)



SEARCH FOR

[GO](#) [Advanced Search](#) [Search Tips](#)

[Springer](#)

[HOME](#) [MY SPRINGERLINK](#) [BROWSE](#) [TOOLS](#) [HELP](#) [LOG IN](#)

[Related](#) [Issue](#) [Journal](#)

[View Related Documents](#)

Book Chapter

A Hed Laboratory Astrophysics Testbed Comes of Age: Jet Deflection via Cross Winds A. Frank

Book Chapter

Jet Deflection by a Quasi-Steady-State Side Wind in the Laboratory David Ampleford

Journal Article

Jet Deflection by a Quasi-Steady-State Side Wind in the Laboratory David J. Ampleford

Journal Article

Formation mechanism of aerodynamic drag of high-speed train and some reduction measures Hong-qj Tian

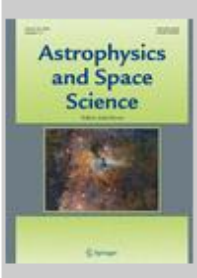
Journal Article

Effect of cross-wind on spatial vibration

PHYSICS AND ASTRONOMY


ASTROPHYSICS AND SPACE SCIENCE


Volume 298, Numbers 1-2, 107-114, DOI: 10.1007/s10509-005-3919-z



A HED Laboratory Astrophysics Testbed Comes of Age: JET Deflection via Cross Winds

A. Frank, E. G. Blackman, A. Cunningham, S. V. Lebedev, D. Ampleford, A. Ciardi, S. N. Bland, J. P. Chittenden and M. G. Haines

 [Download PDF \(186.2 KB\)](#)


 [Permissions & Reprints](#)

[REFERENCES \(17\)](#) [CITED BY \(2\)](#) [EXPORT CITATION](#) [ABOUT](#)

Abstract


We present new data from High-Energy Density (HED) laboratory experiments designed to explore the interaction of a heavy hypersonic radiative jet with a cross wind. The jets are generated with the MAGPIE pulsed power machine where converging conical plasma flows are produced from a cylindrically symmetric array of inclined wires. Radiative hypersonic jets emerge from the convergence point. The cross wind is

Develop database publishing capability



Springer Protocols

ABOUT US | RSS | HELP

 Springer

Upload a Protocol
Upload your own protocol for personal use.

Protocol Alert
Receive e-mail notification about new content on Springer Protocols.

Video Protocols
View our video protocols. Call for video protocols.

Comments
Read comments by other users and add your own.

Favorites
Save your favorite protocols to your My Protocols area.

RSS
RSS Feeds

SpringerImages

HOME | ABOUT | FOR LIBRARIES | CONTACT US | HELP

Welcome Brian Bishop | MY IMAGES | MY ACCOUNT | LOG OUT

Enter search here Search caption Search Show advanced options

Springer.com | SpringerLink.com

ALL IMAGES 1,668,017

Free Images 31,127

Subjects Subscribed To:

| | |
|--------------------------------|---------|
| Biomedicine | 152,150 |
| Biology Image Library | 5,346 |
| Chemistry | 261,412 |
| Computer Science | 34,152 |
| Economics / Management Science | 22,088 |
| Education | 6,983 |
| Engineering | 97,038 |
| Environment | 40,255 |
| Geography | 3,024 |
| Geosciences | 109,538 |

SpringerMaterials The Landolt-Börnstein Database

Beta version

Go Advanced Search

Subject Areas | Bookshelf | Periodic Table | Feedback

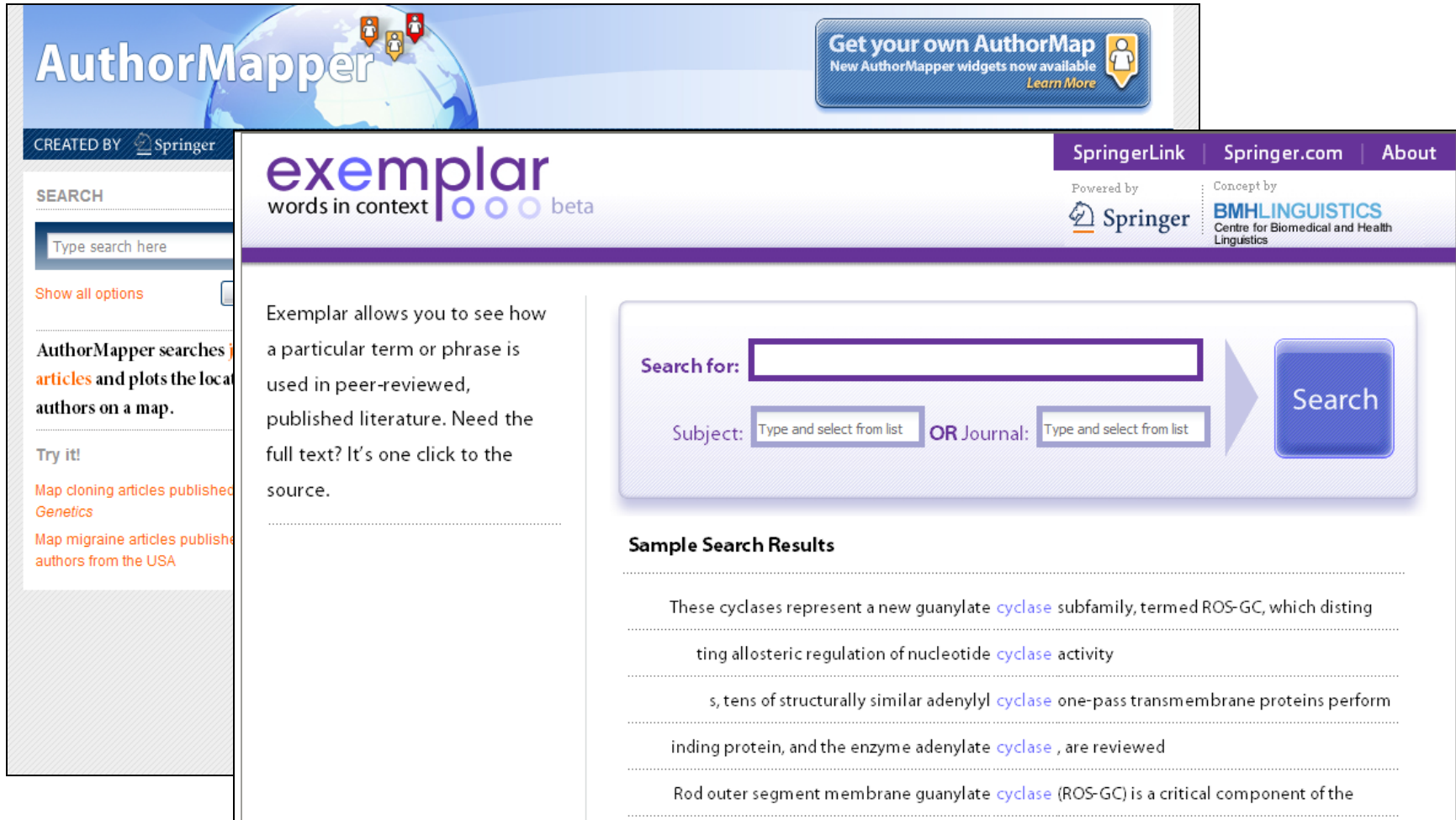
No Elements Selected

Select elements by clicking on the symbols. Deselect element(s) by clicking a second time.

Your Selection:

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | 1A | 2 | 1A | 3 | 1A | 4 | 1A | 5 | 1A | 6 | 1A | 7 | 1A | 8 | 1A | 9 | 1A | 10 | 1A | 11 | 1A | 12 | 1A | 13 | 1A | 14 | 1A | 15 | 1A | 16 | 1A | 17 | 1A | 18 | 1A |
| 1 | H | 2 | He | 3 | Li | 4 | Be | 5 | B | 6 | C | 7 | N | 8 | O | 9 | F | 10 | Ne | 11 | Na | 12 | Mg | 13 | Al | 14 | Si | 15 | P | 16 | S | 17 | Cl | 18 | Ar |
| 19 | K | 20 | Ca | 21 | Sc | 22 | Ti | 23 | V | 24 | Cr | 25 | Mn | 26 | Fe | 27 | Co | 28 | Ni | 29 | Cu | 30 | Zn | 31 | Ga | 32 | Ge | 33 | As | 34 | Se | 35 | Br | 36 | Kr |
| 37 | Rb | 38 | Sr | 39 | Y | 40 | Zr | 41 | Nb | 42 | Mo | 43 | Tc | 44 | Ru | 45 | Rh | 46 | Pd | 47 | Ag | 48 | Cd | 49 | In | 50 | Sn | 51 | Sb | 52 | Te | 53 | I | 54 | Xe |
| 55 | Cs | 56 | Ba | 57 | La | 58 | Ce | 59 | Pr | 60 | Nd | 61 | Pm | 62 | Sm | 63 | Eu | 64 | Gd | 65 | Tb | 66 | Dy | 67 | Ho | 68 | Er | 69 | Tm | 70 | Yb | 71 | Lu | 72 | Hf |
| 73 | Ta | 74 | W | 75 | Re | 76 | Os | 77 | Ir | 78 | Pt | 79 | Au | 80 | Hg | 81 | Tl | 82 | Pb | 83 | Bi | 84 | Po | 85 | At | 86 | Rn | 87 | Fr | 88 | Ra | 89 | Ac | 90 | Th |
| 91 | Pa | 92 | U | 93 | Np | 94 | Pu | 95 | Am | 96 | Cm | 97 | Bk | 98 | Cf | 99 | Es | 100 | Fm | 101 | Mn | 102 | Sg | 103 | Bh | 104 | Hs | 105 | Mt | 106 | Ds | 107 | Rg | 108 | Uu |
| 109 | Uuh | 110 | Uub | 111 | Uut | 112 | Uuq | 113 | Uub | 114 | Uut | 115 | Uuq | 116 | Uub | 117 | Uut | 118 | Uuq | 119 | Uub | 120 | Uut | 121 | Uuq | 122 | Uub | 123 | Uut | 124 | Uuq | 125 | Uub | 126 | Uut |

Develop value-added **workflow tools**



The screenshot displays the AuthorMapper Exemplar search interface. At the top, the 'AuthorMapper' logo is accompanied by a globe icon and a banner for 'Get your own AuthorMap'. Below this, the 'exemplar' logo is shown with the tagline 'words in context beta'. The interface includes a search bar with the placeholder 'Type search here' and a 'Show all options' link. A sidebar on the left provides additional context, stating 'AuthorMapper searches articles and plots the local authors on a map.' and offers examples like 'Map cloning articles published in Genetics' and 'Map migraine articles published by authors from the USA'. The main content area features a search form with fields for 'Search for:', 'Subject:', and 'OR Journal:', each with a dropdown menu. A large blue 'Search' button is positioned to the right of these fields. Below the search form, the 'Sample Search Results' section displays a snippet of text: 'These cyclases represent a new guanylate cyclase subfamily, termed ROS-GC, which distinguishing allosteric regulation of nucleotide cyclase activity... s, tens of structurally similar adenylyl cyclase one-pass transmembrane proteins perform... inding protein, and the enzyme adenylyl cyclase, are reviewed... Rod outer segment membrane guanylate cyclase (ROS-GC) is a critical component of the'.

<http://www.authormapper.com/search.aspx?q=nanoelectronics>

Experiment with social media for societies



The image displays two screenshots of professional social media networks, both powered by Springer.

JMS Network
The Official Professional Network of the Journal of Materials Science
353 Members
Powered by Springer
Navigation: MAIN | MY PAGE | SUBMIT TO JMS | MEMBERS | IMAGES | FORUM | EVENTS | GROUPS | BLOGS | FEEDBACK | CHAT

The NeuroNetwork
a professional network dedicated to the study of the brain
2,262 Members
Powered by Springer
Navigation: HOME | INVITE | MY PROFILE | NETWORK | MEMBER FORUM | MEETING CALENDAR | MULTIMEDIA | ABOUT | MANAGE

The NeuroNetwork Content:

- ADMIN BLOG**
Did you know...
... that we have over 930 members from over 70 different countries?
Take a look at our homepage to see a map of our members.
What are they interested in? Courtesy of Wordle.net, here is a word cloud of their interests:

Neur...
- GROUPS**
 - Neurophilosophy** 3 members
 - Machine Learning** 3 members
 - Neurosurgery**
- FORUM**
 - Intracranial dermoid causing vertical & horizontal diplopia (Quad-Vision)** 2 Replies
Started by Stacy D Burgess in Discussions. Last reply by Stacy D Burgess 48 minutes ago.
 - Who Wants to Be A Cognitive Neuroscientist Millionaire?**
Started by Ann Avouris in Links Aug 28.
 - What is your interest in neuroscience?** 24 Replies
Started by Neuropsychology Dude in Discussions. Last reply by Erika Jensen Aug 27.
 - Society for Neuroscience convention** 1 Reply
Started by Neuropsychology Dude in Discussions. Last reply by Ann Avouris Aug 25.
 - Interested students for Msc/Phd Neurosciences Universiti Sains Malaysia?** 2 Replies
Started by Professor Jafri Malin Abdullah in Discussions. Last reply by Professor Jafri Malin Abdullah Aug 25.
 - [+ Start Discussion](#) [View All](#)
- GROUP DISCUSSIONS**
 - Interview with our member Francois Vialatte
 - 5th BCI2000 Workshop
 - Must mean field equations be similar to single neuron equations?
- SPRINGER**
 - [Sign Out](#)
 - [Inbox](#)
 - [Alerts](#)
 - [Colleagues \(2 requests\)](#)
 - [Settings](#)
 - Quick Add...
 - [FOLLOW US ON TV](#) [Edit](#)
 - [Subscribe](#)
 - MEMBER POLL** [Edit](#)
How accurately do you think scientific research is portrayed by the media?
 - ☐ Accurately
 - ☐ Inaccurately
 - ☐ They get it right about 50% of the

Experiment with social media wiki

SpringerLink.com Springer.com

Springer Reference Live: Cancer

Search

- Main Page
- Pages A-Z
- Recent changes
- Create New Page
- How to edit
- Help

Toolbox

- What links here
- Related changes
- Upload file
- Special pages
- Printable version
- Permanent link

Probability & Statistics Online (beta)

Collaborative Publication in Action

Search Encyclopedia | Requests | Forums | Docs | All

Society Partners: ...

Christiaan Huygens

Christiaan HUYGENS
 b. 14 April 1629 - d. 8 July 1695

Summary. Trained to become a diplomat, a career which did not eventuate due to political circumstances, Huygens turned to science and mathematics. While in Paris he heard of the Pascal's and Fermat's gaming problems. Back in Holland he conceived his calculus of expectations which considerably influenced the generation of probabilists.

Christiaan Huygens was born in the Hague on April 14, 1629, the son of the diplomat, writer, and poet Constantijn Huygens whose Dutch and Latin verse gained him a lasting place in the history of Dutch literature. Born into the house of Orange in two generations the Huygens family had risen to high social rank. Christiaan had private tutors and his father before he went to Leiden in 1645 to study law and mathematics with the mathematician Willem Schooten. He studied classical Greek mathematics and the new methods of Viète, Descartes, and Simon Stevin.

In March 1647 Christiaan Huygens matriculated at the Collegium Auriacum (Orange College) in Breda. He also privately continued his studies of mathematics. After his return to the Hague in August 1649 as a member of a diplomatic mission in the fall of 1649. However, after the death of the stadholder William II, Huygens had no chance to enter the diplomatic service for which he was prepared by his education.

The 17 years between the end of his studies in Breda and his departure to Paris in April 1666 which he spent in the Hague but with short visits to Paris and London were the most fertile of Huygens' career. He worked supported by an allowance supplied by his father, as a gentleman scientist, on problems of mathematics, astronomy, the construction of pendulum clocks and of optical instruments, the lenses of which he greatly improved. His discovery of the ring of Saturn in 1655/56 and the invention of the pendulum clock in 1656 made him famous. In the mid 60's he was considered the leading mathematician and natural philosopher of his time.

your stuff

- [your settings](#)
- [your objects](#)
- [corrections](#)
- [mailbox \(1\)](#)
- [notices \(1\)](#)

members only

- [user activity](#)
- [user list](#)
- [sys stats](#)

add to

- [Encyclopedia](#)

Editor Menu

- [unpublished](#)
- [deleted](#)

Main Menu

- [sections](#)
- [Encyclopedia](#)
- [meta](#)
- [Requests \(1\)](#)
- [Unclass'd \(10\)](#)
- [Corrections \(1\)](#)
- [Classification](#)

Business Models: Subscription versus Open access

- Subscription model:
 - published information is purchased for use by (mainly) libraries
 - copyright is transferred by the authors to the publisher

Access to scientific article output has never been better; thousands of institutes worldwide have access to SpringerLink.

- Open Access model
 - Upfront payment of publication services including subsequent free access
 - copyright is kept by author (only publishing license)

Springer is at the forefront of open access publishing; Springer Open Choice, consortia-paid open access, complete (author-paid) open access journals, BioMed Central.

Collaboration in ORCID

- ORCID (Open Researcher & Contributor ID) attempts to provide unique author identification.
- Difficult to achieve.
- Long range effort

eFirst publishing

- Electronic final article published immediately
 - Includes issue and page/article numbers
- Summary print issue available at year-end
 - Either part of subscription or pay-on-request

Enhanced electronic publishing

- PDF still mimics many features of “paper copies”
- Instead, use basically only mark-up language based means to create online articles which are significantly enriched by incorporating new features:
 - Downloadable spreadsheets to enable readers to work directly with data presented
 - Semantic markup of textual terms and link to third-party information sources
 - Interactive figures
 - Movies
 - citations which include a pop-up containing the relevant quotation from the cited article
 - Sortable reference lists, etc.

Quality Assurance: Plagiarism – State of the Art

- Peer-review can not always uncover plagiarism
- Electronic technologies greatly facilitate plagiarism – this is on the rise!
- Joint solution by publishers: Cross-Check for Cross-Ref members
 - Joint database fed by all publishers with defined access rule
 - Checks published (protected) content (current + archived, 8+ years)

The result, marked-up textual overlaps between documents, needs interpretation.

Interpretation issues range from self-plagiarism to cultural issues : strong textual overlap need not mean plagiarism but possibly betrays the generic problem of non-native speakers.

Quality Assurance : II. Plagiarism – Future Challenges

- Challenge 1:

Adapt all web-based manuscript handling and peer-reviewing systems to incorporate the possibility to automatically query the cross-ref database and to return the results to the editorial offices

- Challenge 2:

Compare submitted document not only with published literature in the protected database, but also with manuscripts in submission stage elsewhere: *detection of multiple submissions!*

- Challenge 3:

Come up with smart plagiarism detecting tools; articles with copied results but rewritten texts are not detected by current tools.

a reminder of the complexity of e-publishing...