

# Smart searching on academic content platforms

Wouter van der Velde – eProduct manager eBooks

## Merci....et, je m'excuse...

- Merci a vous...d'ecouter à moi!
- Je m'excuse que parlez Français est difficile pour moi.
- La presentation est en Anglais

## Who is Springer?

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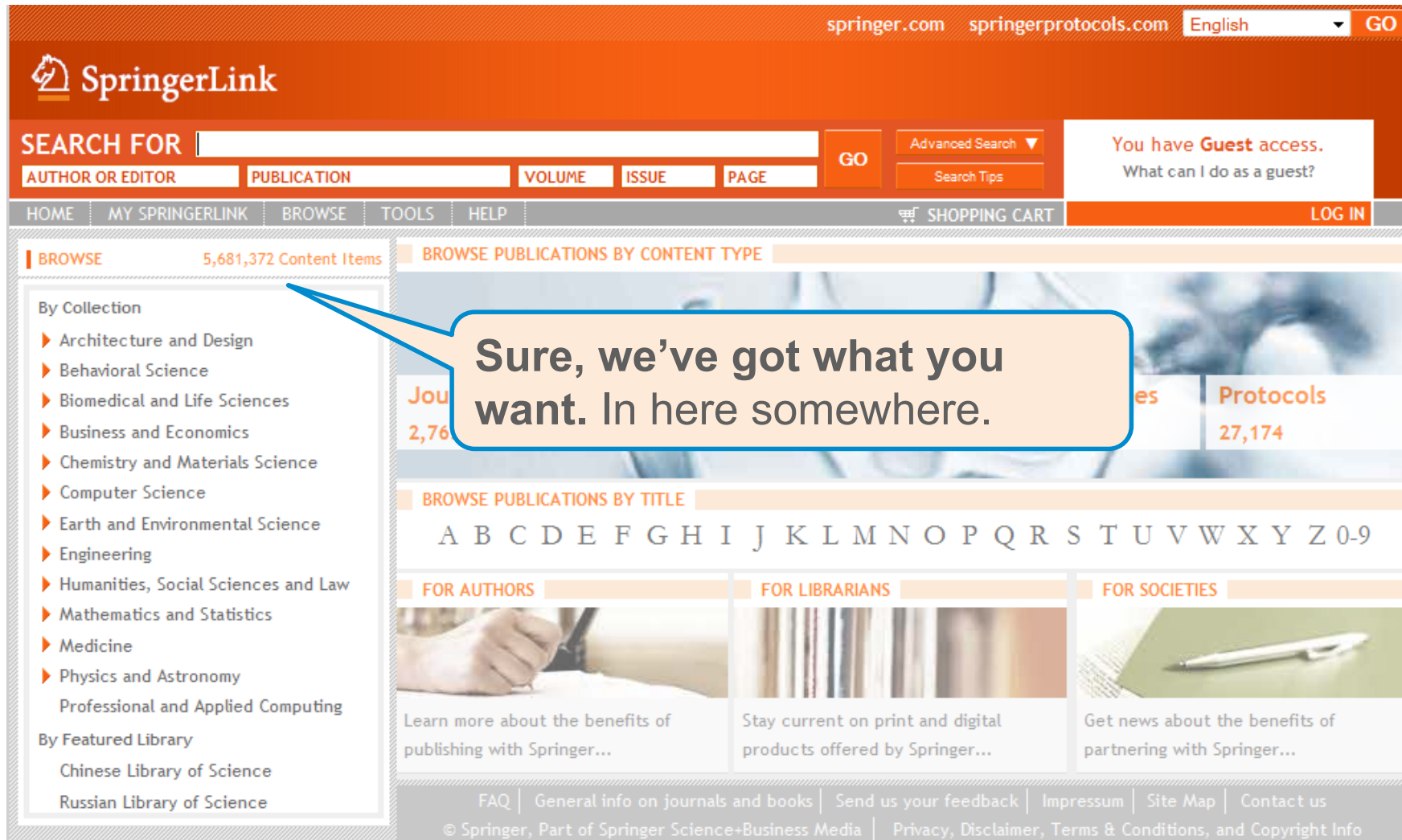
 BEST AD  
MEDIA

 Humana Press

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- Leading global scientific publisher
- 6,000 employees in 25 countries
- 890 million EUR in turnover
- 2,000 journals / 7,000 new book titles published every year
- 50,000 eBooks
- Largest open access portfolio worldwide (over 300 open access journals)

## This is SpringerLink



The screenshot shows the SpringerLink website interface. At the top, there are links for [springer.com](#) and [springerprotocols.com](#), along with a language dropdown set to 'English' and a 'GO' button. The SpringerLink logo is prominently displayed. Below the logo is a search bar with the text 'SEARCH FOR' and a 'GO' button. To the right of the search bar, there is a notification: 'You have Guest access. What can I do as a guest?'. Below the search bar, there are tabs for 'AUTHOR OR EDITOR', 'PUBLICATION', 'VOLUME', 'ISSUE', and 'PAGE'. A navigation bar includes links for 'HOME', 'MY SPRINGERLINK', 'BROWSE', 'TOOLS', 'HELP', 'SHOPPING CART', and 'LOG IN'. The 'BROWSE' section is active, showing '5,681,372 Content Items'. A callout bubble points to the 'BROWSE' section with the text: 'Sure, we've got what you want. In here somewhere.' The 'BROWSE' section is divided into 'By Collection' and 'By Featured Library'. The 'By Collection' list includes: 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, and Professional and Applied Computing. The 'By Featured Library' section lists the Chinese Library of Science and the Russian Library of Science. The 'BROWSE PUBLICATIONS BY CONTENT TYPE' section shows 'Journals' with 2,761 items and 'Protocols' with 27,174 items. The 'BROWSE PUBLICATIONS BY TITLE' section shows an alphabetical index from A to Z and 0-9. The 'FOR AUTHORS', 'FOR LIBRARIANS', and 'FOR SOCIETIES' sections provide links to learn more about publishing with Springer, stay current on print and digital products, and get news about partnering with Springer, respectively. The footer contains links for 'FAQ', 'General info on journals and books', 'Send us your feedback', 'Impressum', 'Site Map', 'Contact us', and a copyright notice: '© Springer, Part of Springer Science+Business Media | Privacy, Disclaimer, Terms & Conditions, and Copyright Info'.

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AUTHOR OR EDITOR PUBLICATION VOLUME ISSUE PAGE Search Tips

HOME MY SPRINGERLINK BROWSE TOOLS HELP SHOPPING CART LOG IN

**BROWSE** 5,681,372 Content Items

**BROWSE PUBLICATIONS BY CONTENT TYPE**

Journals 2,761 Protocols 27,174

**BROWSE PUBLICATIONS BY TITLE**

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z 0-9

**FOR AUTHORS** **FOR LIBRARIANS** **FOR SOCIETIES**

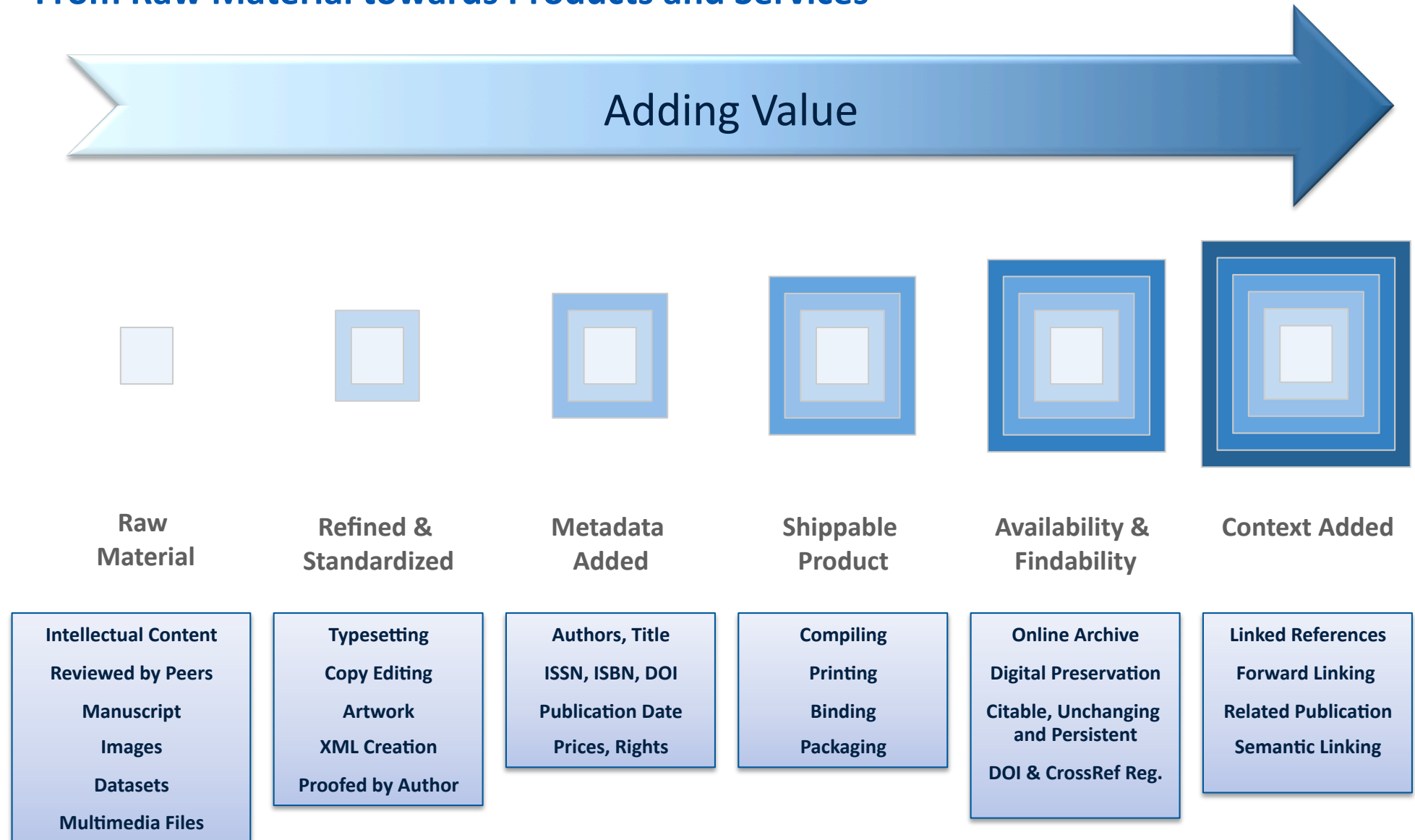
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## Before I'll show some smart search implementations...

- I'll give you some background on what you do not see....
- But, what is part of each document
- And necessary to make recommendation and smart searching possible

## From Raw Material towards Products and Services



# XML - Fulltext

over, *SuUR* mutation results in the disappearance of most of the SU(VAR)3-9 binding sites in autosomes, but not in the X chromosome. These data point to an interaction of SUUR with HP1 and SU(VAR)3-9 proteins in *Drosophila* NC chromosomes.

## Materials and methods

### Fly stocks

The stock *y w sn<sup>3</sup>otu<sup>11</sup>*; *SuUR*<sup>+</sup> carries the *otu* mutation (which is responsible for polytene chromosome formation in NCs) and two wild-type alleles of the *SuUR* gene. The stock *sn<sup>3</sup>otu<sup>11</sup>*; *SuUR* carries the *otu* and *SuUR* mutations in homozygous state. The stock *y w sn<sup>3</sup>otu<sup>11</sup>*; *P{w<sup>+</sup>SuUR<sup>+</sup>}* carries the *otu* mutation and is homozygous for the insertion of a P-element-based construct X6S1 on chromosome 2. This construct contains the *mini-white* gene and the full-length genomic fragment of the *SuUR* gene (Makunin et al. 2002). Thus, this stock carries four copies of the *SuUR*<sup>+</sup> allele in total.

Chromosomes were squashed in 45% acetic acid. Ice-cold solutions were used for all procedures, and treatments never exceeded 5–6 min. After squashing, freezing in liquid nitrogen, and removal of cover slips, the preparations were kept in cold phosphate-buffered saline (PBS). Antibodies against SU(VAR)3-9 and SUUR were diluted in PBS/2% Tween-20/5% dry milk. Antibodies against HP1 were diluted in PBS/0.05% Tween-20. Squashes were incubated with primary antibodies overnight at +4°C and with secondary antibodies at room temperature [for SU(VAR)3-9 at +37°C] for 1.5–2 h. Secondary antibodies for HP1 staining were fluorescein-isothiocyanate (FITC)-conjugated sheep anti-mouse IgG (Boehringer Mannheim); for SU(VAR)3-9 staining, Alexa488 FITC-conjugated goat anti-rabbit IgG (Molecular Probes) was used; for SUUR staining, we used FITC-conjugated goat anti-rabbit IgG (Sigma). Subsequently, all preparations were stained with DAPI and analyzed on a fluorescent microscope equipped with a charge-coupled device camera.

## Materials and methods

### Fly stocks

The stock *y w sn<sup>3</sup>otu<sup>11</sup>*; *SuUR*<sup>+</sup> carries the *otu* mutation (which is responsible for polytene chromosome formation in NCs) and two wild-type alleles of the *SuUR* gene. The stock *sn<sup>3</sup>otu<sup>11</sup>*; *SuUR* carries the *otu* and *SuUR* mutations in homozygous state. The stock *y w sn<sup>3</sup>otu<sup>11</sup>*; *P{w<sup>+</sup>SuUR<sup>+</sup>}* carries the *otu* mutation and is homozygous for the insertion of a P-element-based construct X6S1 on chromosome 2. This construct contains the *mini-white* gene and the full-length genomic fragment of the *SuUR* gene (Makunin et al. 2002). Thus, this stock carries four copies

<Section1 ID="Sec2" Type="MaterialsAndMethods">

<Heading>Materials and methods</Heading>

<Section2 ID="Sec3">

<Heading>Fly stocks</Heading>

<Para>The stock <Emphasis Type="Italic">y w sn</

Emphasis><Superscript><Emphasis Type="Italic">3</Emphasis></Superscript><Emphasis Type="Italic">otu</Emphasis> <Superscript><Emphasis Type="Italic">11</Emphasis></Superscript> <Emphasis Type="Italic">; SuUR</Emphasis> <Superscript><Emphasis Type="Italic">+</Emphasis></Superscript> carries the <Emphasis Type="Italic">otu</Emphasis> mutation (which is responsible for polytene chromosome formation in NCs) and two wild-type alleles of the <Emphasis Type="Italic">SuUR</Emphasis> gene. The stock <Emphasis Type="Italic">sn</Emphasis> <Superscript><Emphasis Type="Italic">3</Emphasis></Superscript> <Emphasis Type="Italic">otu</Emphasis> <Superscript><Emphasis Type="Italic">11</Emphasis></Superscript> <Emphasis Type="Italic">; SuUR</Emphasis> carries the <Emphasis Type="Italic">otu</Emphasis> and <Emphasis Type="Italic">SuUR</Emphasis> mutations in homozygous state. The stock <Emphasis Type="Italic">y w sn</Emphasis>

## XML – Extensible Markup Language

### Metadata

- Lingua Franca of the internet. Machine readable information
- Digital distribution: Third party, Libraries, A&I, Google, Amazon
- Content without correct metadata is worthless in the digital world

### Full-text

- Cost and time saving in production, e.g. automated pagination
- Media neutral: Re-use, Re-purpose, Re-package
- Long term preservation (open standard, independent of application)

### References

- Reference Linking, Forward Linking



## Linking up the content in different ways

### 1. Related Articles (Fingerprinting)

Showing the user of an SpringerLink article the 10 most closely related documents on SpringerLink

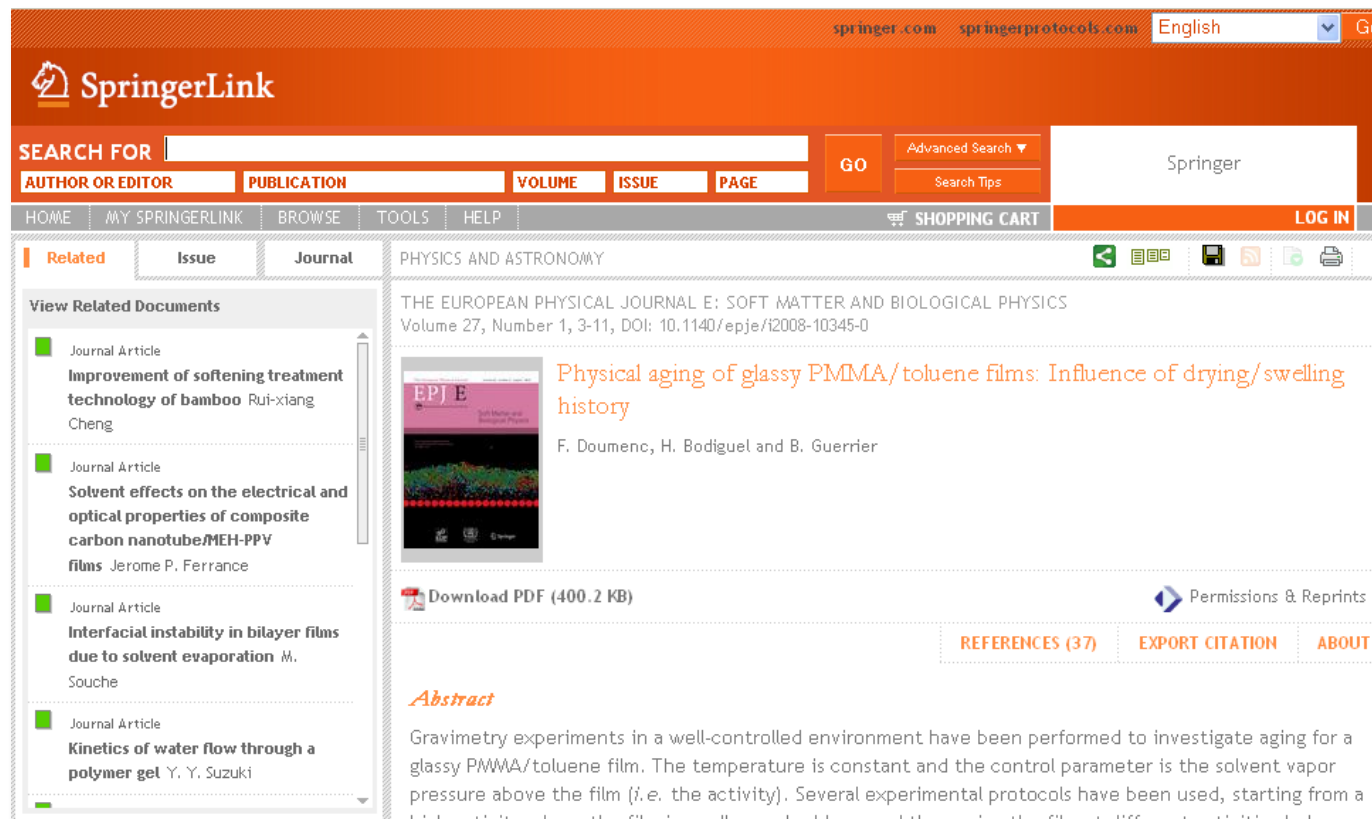
### 2. Background-Enriched Content (BEC)

Enrich the full-text of all SpringerLink documents in html format with hyperlinks to related content (in development)

## Related Articles

### Method

1. Calculate fingerprints for each article and chapter
2. Compare fingerprints of all articles with one another
3. Identify the 10 most closely related articles for each article



The screenshot displays the SpringerLink interface. At the top, there's a navigation bar with the SpringerLink logo, a search bar, and links to 'springer.com' and 'springerprotocols.com'. Below this is a secondary navigation bar with tabs for 'HOME', 'MY SPRINGERLINK', 'BROWSE', 'TOOLS', and 'HELP'. The main content area is divided into two columns. The left column, titled 'View Related Documents', lists four related articles with their titles and authors. The right column shows the details of the selected article, including its title, authors, and a link to download the PDF. The article title is 'Physical aging of glassy PMMA/toluene films: Influence of drying/swelling history' by F. Doumenc, H. Bodiguel, and B. Guerrier. The abstract is visible at the bottom of the right column.

SpringerLink

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Related Issue Journal

View Related Documents

- Journal Article  
Improvement of softening treatment technology of bamboo Rui-xiang Cheng
- Journal Article  
Solvent effects on the electrical and optical properties of composite carbon nanotube/MEH-PPV films Jerome P. Ferrance
- Journal Article  
Interfacial instability in bilayer films due to solvent evaporation M. Souche
- Journal Article  
Kinetics of water flow through a polymer gel Y. Y. Suzuki

PHYSICS AND ASTRONOMY

THE EUROPEAN PHYSICAL JOURNAL E: SOFT MATTER AND BIOLOGICAL PHYSICS  
Volume 27, Number 1, 3-11, DOI: 10.1140/epje/i2008-10345-0

Physical aging of glassy PMMA/toluene films: Influence of drying/swelling history  
F. Doumenc, H. Bodiguel and B. Guerrier

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REFERENCES (37) EXPORT CITATION ABOUT

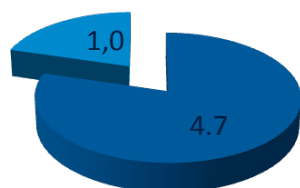
**Abstract**

Gravimetry experiments in a well-controlled environment have been performed to investigate aging for a glassy PMMA/toluene film. The temperature is constant and the control parameter is the solvent vapor pressure above the film (*i.e.* the activity). Several experimental protocols have been used, starting from a high activity where the film is swollen and rubbery and then aging the film at different activities below

# Related Articles by Fingerprints on SpringerLink

Total: 5.7 million

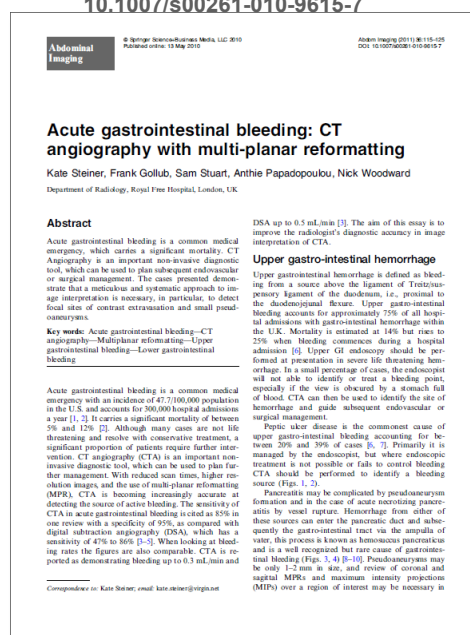
Journal articles: 4.7 million



- Journal articles
- Book chapters

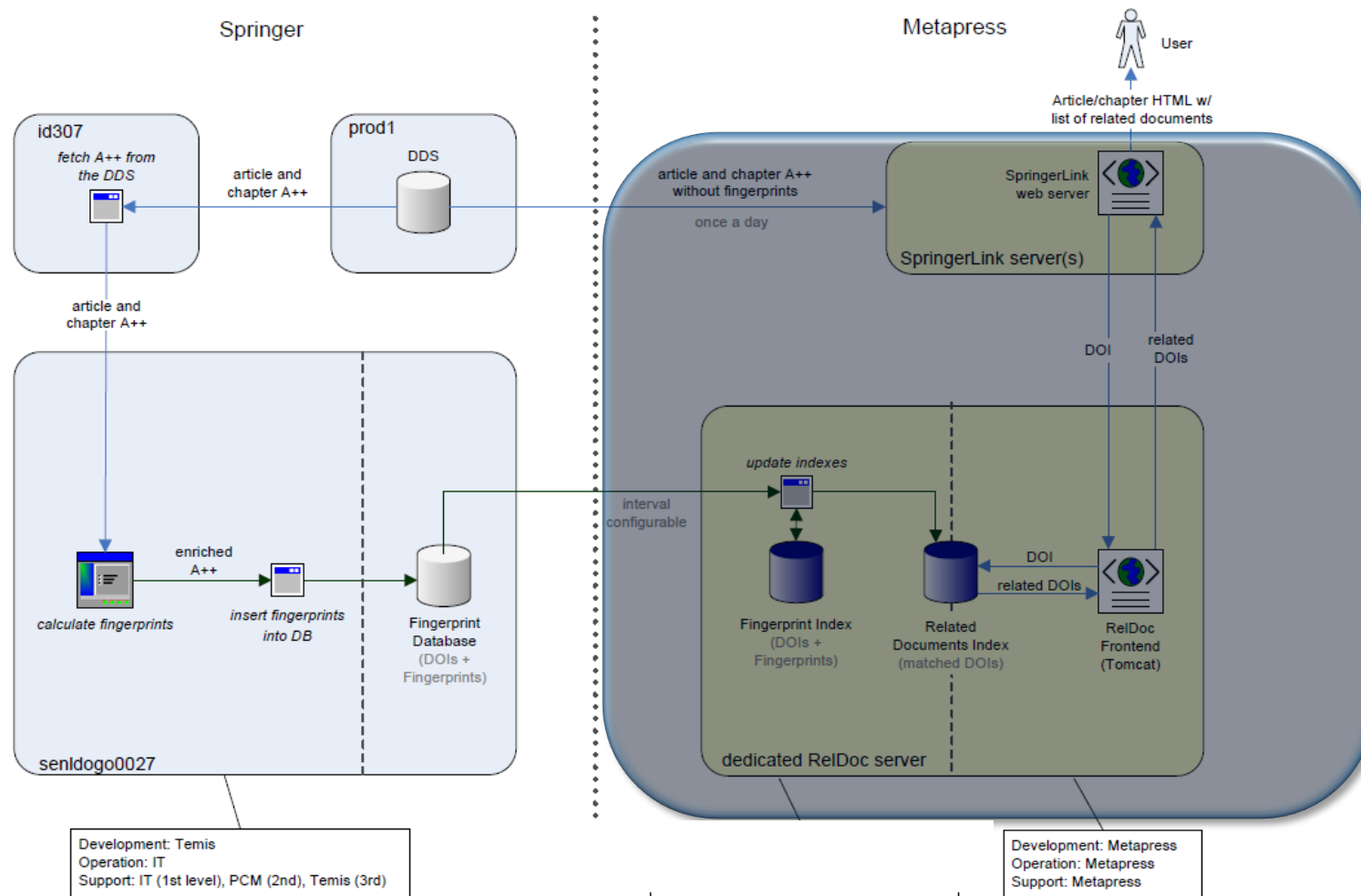
Example:

10.1007/s00261-010-9615-7



Term	Score
cta image	103,89
axial cta image	95,55
contrast extravasation	68,19
bleed point	62,34
important non-invasive diagnostic tool	50,63
b   b coronal	49,38
sma injection	43,98
acute gastrointestinal bleed	40,36
subsequent endovascular	37,95
mips demonstrate active extravasation	36,47
mips demonstrate active extravasation of	36,47
upper gi endoscopy	36,35
bleed source	35,77
gi endoscopy	34,82
pancreaticus   pancreaticu	31,86
common medical emergency	25,33
bowel lumen	25,14
upper gastro-intestinal bleed	24,72
attenuation fluid	24,54
ligament of treitz	24,46
rare cause of gastrointestinal bleed	24,08
active bleed	23,70
low gastro-intestinal hemorrhage	22,90
smv varix	22,81
gastrointestinal hemorrhage	21,80
small pseudoaneurysms   pseudoaneurysr	21,78
active extravasation of contrast	21,59
focal site	19,15
upper gastrointestinal hemorrhage	18,55
active extravasation	18,22
acute upper gi bleed	17,64
varix	16,46
left gastric artery	16,38
significant mortality	16,20
active hemorrhage	15,87

## Related Articles



## Related Documents

## Related Articles

Article Fingerprint

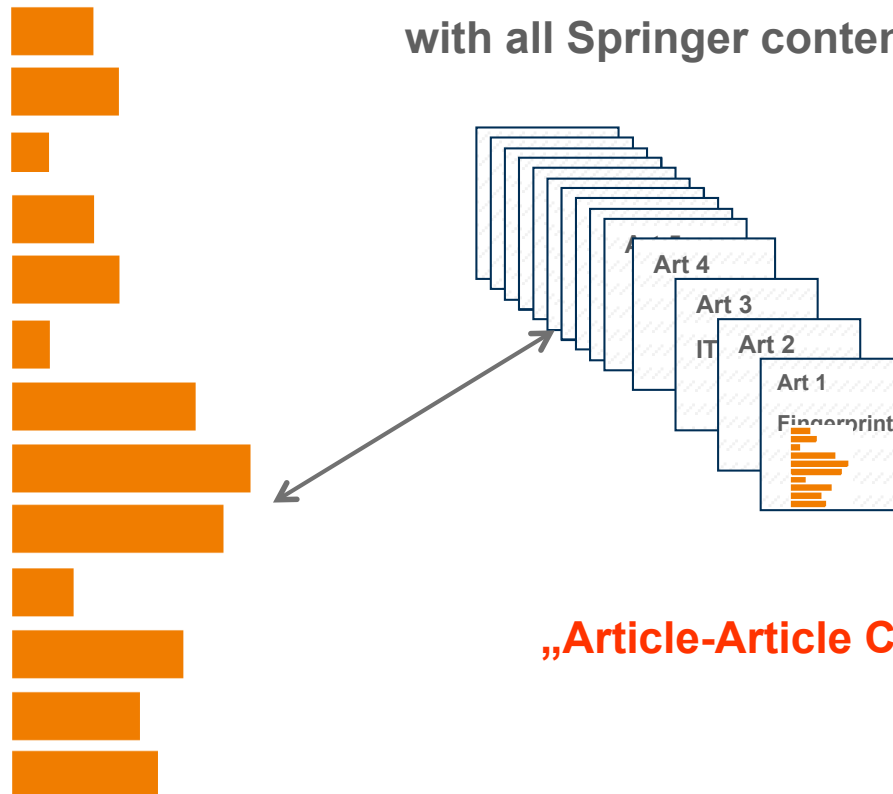


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Analysis

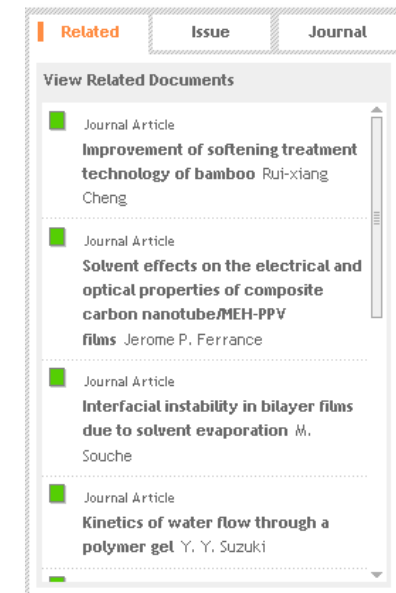


Rank Related Articles

with all Springer content



„Article-Article Correlation“



## 10 most Related documents on SpringerLink with every article

Related

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☐ Journal Article  
Airborne Lidar Observations of the Transition Zone Between the Convective Boundary Layer and Free Atmosphere During the International H2O Project (IHOP) in 2002 Jeffrey S. Grabon


☐ Journal Article  
High resolution flight observations and numerical simulations: horizontal variability in the wintertime boreal boundary layer H. Savijärvi

☐ Journal Article  
Energy balance closure for the LITFASS-2003 experiment Thomas Foken

EARTH AND ENVIRONMENTAL SCIENCE

BOUNDARY-LAYER METEOROLOGY

Volume 133, Number 3 (2009), 323-341, DOI: 10.1007/s10546-009-9406-2



ARTICLE

Quantifying the Spatial Variability of Surface Fluxes Using Data from the 2002 International H2O Project

Joseph G. Alfieri, Dev Niyogi, Hao Zhang, Margaret A. LeMone and Fei Chen

From the issue entitled "Selected articles from an NSF-funded workshop on Land-Use/Land-Cover Change and Its Impacts on Weather and Climate, held in Boulder, Colorado, U.S.A. in 2007"

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REFERENCES (44)


CITED BY (5)

EXPORT CITATION

ABOUT


Abstract

Spatial variability in the exchange of energy and moisture is a key control on numerous atmospheric, hydrologic, and environmental processes. Using observations made on fair weather days during the 2002 International H2O Project, four methods for quantifying the spatial variability of surface fluxes are investigated. The first two methods utilize applied statistical techniques to describe the spatial variability of the surface fluxes, while the third method is a geostatistical technique rooted in variography. Typically, the methods yield similar results, with median values of horizontal variability consistent to within 5%. The geostatistical technique, however, provides much more information than the other statistical methods; it not only provides an estimate of the spatial variability, but also provides estimates of the total variability, the non-spatial variability due to measurement error, and the range of spatial correlation among the data points. The fourth method is based on the relationship between the components of the surface energy budget. This method describes the variability in the fluxes in terms of the slope of the best-fit line relating the time-averaged latent and sensible heat fluxes from different locations along the flight path. The meaning of the slopes can also be interpreted in terms of the spatial variability in the available energy. For four of the five days analyzed, the key control on the spatial variability in the turbulent heat fluxes was horizontal variability in the soil heat flux. In turn, the soil heat flux varied as a function of surface properties including surface temperature, soil moisture content, and leaf area index. On the


 Springer

# Background-Enriched Content

## Oncogene

Manfred Schwab<sup>1</sup> 

(1) DKFZ, Heidelberg, Germany

 Manfred Schwab  
Email: [m.schwab@dkfz.de](mailto:m.schwab@dkfz.de)

## HTML on SL today

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Without Abstract

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### Definition

An oncogene is a derivative of any gene that has the ability to stimulate cellular growth. In experimental assays, oncogene products can, alone or in cooperation with another gene, transform eukaryotic cells so that they grow in a way analogous to tumor cells. The definition was originally applied to the transforming genes acquired by RNA tumor viruses through the transduction of cellular genes. Today, the term is used rather broadly. Oncogenes contribute to tumorigenesis by any positive modulation of cellular growth; they act by their presence (this in contrast to tumor suppressor genes), an activity that is often referred to as “dominant”. Tumorigenic activation of oncogenes can result from mutational/structural/numeric changes in a gene and possibly from regulatory enhancement of gene expression.

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### Characteristics

Oncogenes were originally isolated from RNA tumor viruses, where they are responsible for the rapid tumor induction after infection of an animal host. In the viral genome, the oncogene was referred to as a viral oncogene or *v-onc* ([1](#), [2](#)).

It was soon established that the *v-oncs* are actually derived from the genome of the host cell. They have been captured by the virus after infection of the cell by a process called transduction. Transduction appears in a range of animal species from chickens to monkeys; it has not been observed in humans. The cellular counterparts, from which the *v-oncs* are derived, are referred to as proto-oncogenes, or cellular oncogenes (*c-onc*). Proto-oncogenes are normal constituents of the cellular genome and are highly conserved among all eukaryotic organisms.

This original rigid definition has softened in subsequent years. Broadly speaking, the term oncogene now includes any gene that has a growth stimulatory effect on cells, by means of:

- conferring sustained cellular multiplication
- advancement of cell-cycle progression
- decreased requirement for growth factors
- focus formation under conditions of cell culture
- enabling cells to grow under more restricted experimental conditions, such as in soft agar
- tumorigenic conversion, such as in experimental animals

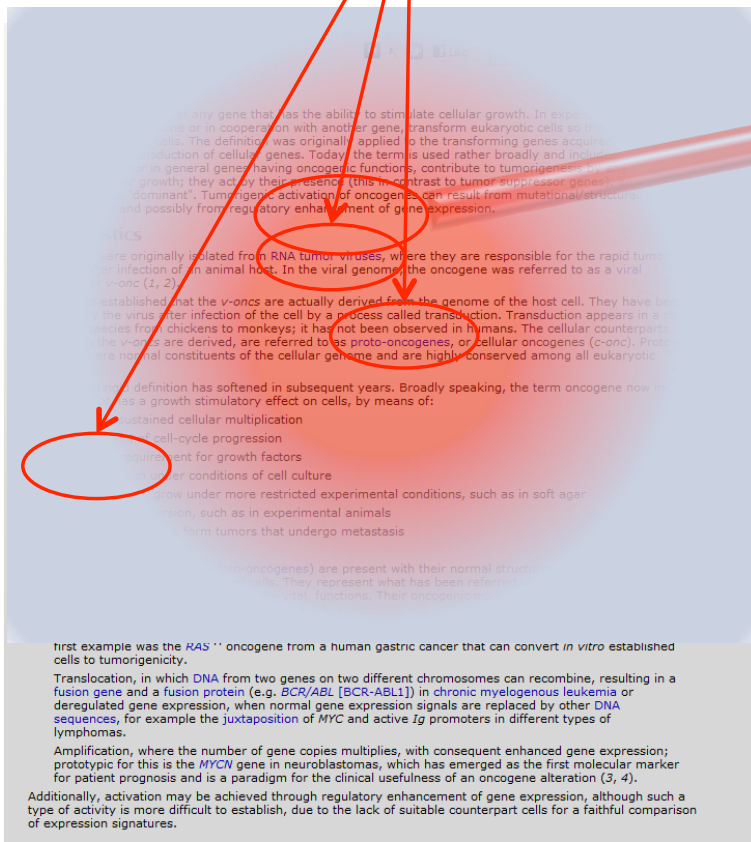


# Background-Enriched Content

„Word-Article Correlation“

## Method

1. Identify meaningful terms in full text of every html article
2. For every term, find articles relevant for the term...
3. ...and with matching fingerprints
4. Rank these articles and render the hit list upon clicking on the term



Results 1 - 10 of 14 Documents    previous 1 2 next    Compact View   Clear   Refine

Biomedical and Life Sciences > Encyclopedic Reference of Genomics and Proteomics in Molecular Medicine

**Proto-Oncogene**

Definition Proto-Oncogene describes a normal gene that is usually ...

---

Biomedical and Life Sciences > Encyclopedic Reference of Genomics and Proteomics in Molecular Medicine

**Growth Factors**

disturbing mutation. For example, the proto-oncogene that encodes for platelet-derived ... that can activate the small GTP binding proto-oncogene protein Ras. Ras then phosphorylates a ...

---

Biomedical and Life Sciences > Encyclopedic Reference of Genomics and Proteomics in Molecular Medicine

**RNA Polymerase III**

In addition to these kinases, the proto-oncogene product c-Myc is a crucial regulator of ... p53 and RB and activated by known proto-oncogene products including CK2, ras and c-Myc ( ...

---

Medicine > Encyclopedia of Diagnostic Imaging

**Carcinoma, Male Breast**

In contrast to women, the c-erbB2 proto-oncogene is less likely to be overexpressed ...

---

Medicine > Encyclopedia of Diagnostic Imaging

**Hirschsprung Disease and Related Disorders**

Of the genes identified so far, the RET proto-oncogene is the major susceptibility gene and ...

---

Biomedical and Life Sciences > Encyclopedia of Molecular Pharmacology

**Wnt Signaling**

adult fly (without wings) and the int-1 proto-oncogene, a target of MMTV, the mouse mammary ...

---

Biomedical and Life Sciences > Encyclopedic Reference of Genomics and Proteomics in Molecular Medicine

**Ras Signalling**

the tumorigenic conversion with the proto-oncogene present in normal cells revealed point ...

---

Biomedical and Life Sciences > Encyclopedic Reference of Genomics and Proteomics in Molecular Medicine

**Protein Tags**

antibodies specific for human c-myc proto-oncogene product. Mol Cell Biol 5:3610-3616 6. ...

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Biomedical and Life Sciences > Encyclopedic Reference of Genomics and Proteomics in Molecular Medicine

**c-Myc**

Definition The term c-Myc designates a proto-oncogene product which is involved in ...



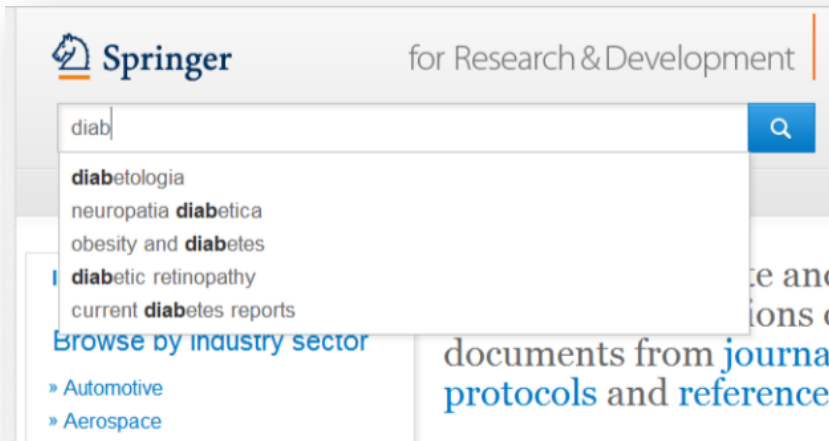
## And....what about the usage?

**“On SpringerLink, the usage of related articles is substantial. In Q1 2012, we had 17 million ‘related articles’ abstract views.”**

## SpringerLink for corporate customers...



## Suggested Search




Auto-suggest based on Google search terms

- We took a listing of over 900,000 keywords that drove traffic to SpringerLink and use that as the basis, and when you type, the autosuggest is triggered after the 3rd keystroke and shows you the matching results in order of how much traffic that term brought to our site.

## Search customizations

- Future search enhancements:
  - Highly cited weigh more
  - Highly downloaded weigh more



The screenshot shows a Springer article page. At the top, there are two buttons: « Look Inside » and « Get Access ». The article title is "Data of one- and two-dimensional NMR spectroscopy in the study of structure and nature of associations of hyperbranched polyester polyol Boltorn H2O-OH". Below the title, the authors are listed: F. Kh. Karataeva, M. V. Rezepova, A. R. Yul'metov, M. P. Kutyreva, G. A. Kutyrev. There are two more buttons: « Look Inside » and « Get Access ». The abstract text is: "Structure of the hyperbranched polyester of the polyol BOLTORN H2O-OH was studied by one- and two-dimensional <sup>1</sup>H and <sup>13</sup>C NMR spectroscopy in combination with the IR spectroscopy and semiempirical quantum-chemical calculations (method AM1). The polyol structure was shown not to be stereoregular. Three basic types of H-bonding interactions of intra- or intermolecular nature were revealed: C=O...HO, OH...OH, and C=O...HO...HO." Below the abstract, there is a note: "• Original Russian Text © F.Kh. Karataeva, M.V. Rezepova, A.R. Yul'metov, M.P. Kutyreva, G.A. Kutyrev, 2010, published in Zhurnal Obshchei Khimii, 2010, Vol. 80, No. 12, pp. 2017–2025." On the right side, there is a thumbnail of the journal cover for "RUSSIAN JOURNAL OF GENERAL CHEMISTRY" with a "LOOK INSIDE" button. Below the thumbnail, there is a section "Other actions" with a link "» Export citations". At the bottom, there is a section "Related (4)" with a list of three related articles:

Related (4)	Date
1. The Role of Brand Names and Visual Cues in Enhancing Memory for Consumer Packaged Goods	April 1998
2. Selectivity and specificity in analytical chemistry. General considerations and attempt of a definition and quantification	March 2001
3. A Measure of the Value of Marketing in Packaged Goods	April 1997

## Summary

- SpringerLink hosts 5.7 million articles and chapters
- Metadata quality is essential
- SpringerLink offers 10 most related documents
  - Based on fingerprint
- SpringerLink for Corporate has suggested search
  - Based on actual usage: give your user what they most likely need
- Researchers and students can find that needle in the haystack!

## Thank You! – Questions?

**Wouter van der Velde**

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