

# Writing scientific research papers

## General structure

## Organisation of information and ideas

## Class 1

Writing (scientific) papers is a creative process, and fun, but it also is very hard work + once finished, getting a paper actually published is very difficult, SO WHY PUBLISH ??

Important reasons = it is the only way to have a career in science AND it is crucial for your institute/department.

Other important reasons : (i) it is the only way to ensure that all your hard work is not lost; (ii) it is really nice to see your work published or your name appear on the web; (iii) your research has been paid with tax-payers money and return to the scientific society is required

# WHY ARE PUBLISHED PAPERS IMPORTANT FOR SCIENTISTS ?

You can do the best research & advance understanding , but this won't help you find a job if nobody knows about it (not even if worth a Nobel prize) !

In football, it's not the best playing team that wins but the one that scores the most goals.

IT'S THE SAME IN SCIENCE

Scientists (at least in exact sciences) are judged on quantitative criteria = the quantity and quality of your output on the WEB of SCIENCE !!

Funding of Universities / Faculties / Departments and research institutes like yours depends on the number & quality of published manuscripts. The more you publish, the richer your institute + the happier they will be with your work (promotions)

Important **terminology** in the game of quantifying output & quality:

Publish in ISI – peer reviewed – A1 journal

Journal **impact factor** (source web of science) = ???

= total number of citations in years X+1 and X+2 to all papers published in the journal during year X , divided by total number of articles published by the journal in year X

Nature & Science : IF about 30; Strongly focusing journals have much lower IF's (could even be 0.1).

**Total number of citations** = personal (source web of science; instead of typing in keywords, type in authors and then: create citation report)

# ISI Web of Knowledge<sup>SM</sup>

All Databases | **Select a Database** | Web of Science | Additional Resources

Search | Cited Reference Search | Advanced Search | Search History | Marked List (0)

## Web of Science<sup>®</sup> – with Conference Proceedings

Search for:

in **Topic**

*Example: oil spill\* mediterranean*

AND  janssens i\* in **Author**

*Example: O'Brian C\* OR OBrian C\**

Need help finding papers by an author? Use [Author Finder](#).

AND  antwerp\* in **Address**

*Example: Yale Univ SAME hosp (view abbreviations list)*

[Add Another Field >>](#)

Search

Clear

Searches must be in English

Current Limits: [\[Hide Limits and Settings\]](#) (To save these permanently, [sign in or register](#).)

### Timespan:

All Years (updated 2011-02-12)

From 1955 to 2011 (default is all years)

### Citation Databases:

Science Citation Index Expanded (SCI-EXPANDED) --1956-present

Social Sciences Citation Index (SSCI) --1956-present

Elektron Group Flanders  
Flemish Consortium

More information  
for new users

### Looking for ISI Proceedings?

It is now searchable from within  
*Web of Science* as the *Conference  
Proceedings Citation Index*.

[More information.](#)

**Note:** Times Cited counts now  
include proceedings citations.

[More information.](#)

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Search Cited Reference Search Advanced Search Search History Marked List (0)

## Web of Science® – with Conference Proceedings

**Results** Author=(janssens i\*) AND Address=(antwerp\*)  
Timespan=All Years. Databases=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH.

Scientific WebPlus<sup>BETA</sup> View Web Results >>

View **Distinct Author Sets** for **janssens i\***  
The Distinct Author Set feature is a discovery tool showing sets of papers likely written by the same person. (Tell me more.)

Results: **89**

Page 1 of 9 Go

Sort by: Latest Date

Print E-mail Add to Marked List Save to EndNote Web Save to EndNote, RefMan, ProCite more options

Analyze Results  
Create Citation Report

### Refine Results

Search within results for

Search

**Subject Areas** Refine

- ECOLOGY (28)
- FORESTRY (26)
- ENVIRONMENTAL SCIENCES (23)
- GEOSCIENCES, MULTIDISCIPLINARY (20)
- BIODIVERSITY CONSERVATION (15)

more options / values...

**Document Types** Refine

- ARTICLE (84)
- REVIEW (11)

- Title: **Soil [N] modulates soil C cycling in CO2-fumigated tree stands: a meta-analysis**  
Author(s): Dieleman WJ, Luyssaert S, Rey A, et al.  
Source: **PLANT CELL AND ENVIRONMENT** Volume: 33 Issue: 12 Pages: 2001-2011 Published: DEC 2010  
Times Cited: 0
- Title: **BIOGEOCHEMISTRY Soil carbon breakdown**  
Author(s): Janssens IA, Vicca S  
Source: **NATURE GEOSCIENCE** Volume: 3 Issue: 12 Pages: 823-824 Published: DEC 2010  
Times Cited: 0
- Title: **Zea mays rhizosphere respiration, but not soil organic matter decomposition was stable across a temperature gradient**  
Author(s): Vicca S, Janssens IA, Wong SC, et al.  
Source: **SOIL BIOLOGY & BIOCHEMISTRY** Volume: 42 Issue: 11 Pages: 2030-2033 Published: NOV 2010  
Times Cited: 0

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All Databases | Select a Database | Web of Science | Additional Resources

Search | Cited Reference Search | Advanced Search | Search History | Marked List (0)

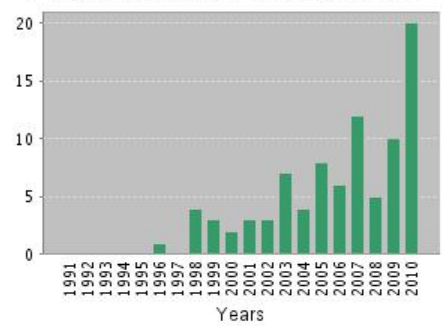
## Web of Science® – with Conference Proceedings

<< [Back to previous results list](#)

**Citation Report** Author=(janssens i\*) AND Address=(antwerp\*)  
 Timespan=All Years. Databases=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH.

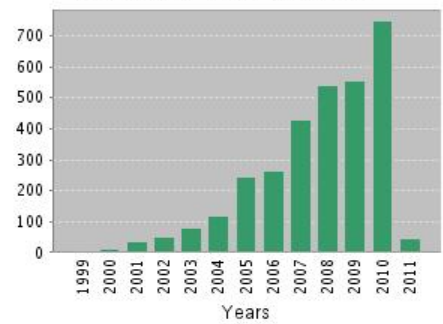
This report reflects citations to source items indexed within Web of Science. Perform a Cited Reference Search to include citations to items not indexed within Web of Science.

**Published Items in Each Year**



The latest 20 years are displayed.  
[View a graph with all years.](#)

**Citations in Each Year**



**Results found:** 89

**Sum of the Times Cited [?]:** 3,124  
[View Citing Articles](#)  
[View without self-citations](#)

**Average Citations per Item [?]:** 35.10

**h-index [?]:** 26

Results: **89**

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Sort by: Times Cited

2007 2008 2009 2010 2011 Total Average Citations

# WHY ARE PUBLISHED PAPERS IMPORTANT FOR SCIENTISTS ?

1. Beginning = struggle for life = even a low IF paper could make the difference, citations not important, one or two papers in good journals could make the difference
2. Further in the career: citations become most dominant, so make sure your papers are being read (=journal selection + readability of your manuscript) and cited (excellence & relevance of your research + transparency of your text)



## ***General structure***

### ***Organisation of information and ideas***

1. Plan your story & write first draft
2. Select the most appropriate journal
3. Adapt format of manuscript to that of the journal
4. Submit to journal
5. Journal Editor decides; depends on topic, clarity & relevance
6. If not OK, back to 1 or 2; if OK: sent out for review
7. Referees are peers, specialists in your field that check the scientific quality. If negative: reject & back to 1 or 2; if 100% OK: accept for publication
8. Often: overall +, but many ideas for improvement.  
In this case: invited to improve and resubmit (back to 4; iterations until 100% OK)

# Organisation of information and ideas

## Steps in the publication process

1. Plan your story & write first draft
  2. Select the most appropriate journal
  3. Adapt format of manuscript to that of the journal
  4. Submit to journal
  5. Editor decides whether OK in terms of topic & relevance
  6. If not OK, back to 1 or 2; if OK: sent out for review
  7. Referees check quality. If negative: reject & back to 1 or 2; if 100% OK: accept for publication
- The better your manuscript:  
the faster it will be accepted +  
the more citations
- Writing a top manuscript  
costs blood, sweat and tears,
- But it can make your career!

# ***General structure***

## ***Organisation of information and ideas***

Selecting the Journal:

- Topics, read the subjects covered by the journal you select: SCOPE
- Check the papers and the journals that you have read/cited yourself.
- These determine the discipline or field (wider or more narrow) that you aim your work to = SCOPE
- Journal IF, journal ranking

# ISI Web of Knowledge<sup>SM</sup>

- All Databases
- Select a Database
- Web of Science
- Additional Resources

Use the "All Databases" tab above to search all databases, or select a single database from the list below.

### Web of Science® (1955-present)

Access the world's leading scholarly literature in the sciences, social sciences, arts, and humanities and examine proceedings of international conferences, symposia, seminars, colloquia, workshops, and conventions. [\[ more \]](#)

### Inspec® (1969-present)

A comprehensive index to the global journal and proceedings literature in physics, electrical/electronic engineering, computing, control engineering, and information technology. [\[ more \]](#)

### Journal Citation Reports®

Journal performance metrics offer a systematic, objective means to critically evaluate the world's leading journals [\[ more \]](#)

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More information for new users  
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Flemish Consortium

### Looking for ISI Proceedings?

You can now find it within *Web of Science*, as the *Conference Proceedings Citation Index*. Use powerful *Web of Science* capabilities to search, analyze, and share conference proceedings data. [More information.](#)

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**Target your search**  
Each database within *ISI Web of Knowledge* has unique content and capabilities, including specialized search fields and controlled vocabularies.

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**Scientific WebPlus**  
Find scientifically relevant Web content fast! Search the open Web and quickly see the most relevant content for the topics you care about, with *Scientific WebPlus*.

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## Journal Citation Reports<sup>®</sup>

[Information for New Users](#)

<b>Select a JCR edition and year:</b>	<b>Select an option:</b>
<input checked="" type="radio"/> JCR Science Edition 2009	<input checked="" type="radio"/> View a group of journals by Subject Category
<input type="radio"/> JCR Social Sciences Edition 2009	<input type="radio"/> Search for a specific journal
	<input type="radio"/> View all journals
<input type="button" value="SUBMIT"/>	

*This product is best viewed in 800x600 or higher resolution*

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## Journal Citation Reports<sup>®</sup>

WELCOME HELP 2009 JCR Science Edition

### Subject Category Selection [Subject Category Scope Notes](#)

<b>1) Select one or more categories from the list.</b> <a href="#">(How to select more than one)</a>	<ul style="list-style-type: none"><li>ENGINEERING, MULTIDISCIPLINARY</li><li>ENGINEERING, OCEAN</li><li>ENGINEERING, PETROLEUM</li><li>ENTOMOLOGY</li><li>ENVIRONMENTAL SCIENCES</li><li>EVOLUTIONARY BIOLOGY</li><li>FISHERIES</li><li>FOOD SCIENCE &amp; TECHNOLOGY</li><li>FORESTRY</li></ul>
<b>2) Select to view Journal data or aggregate Category data.</b>	<p><input checked="" type="radio"/> <b>View Journal Data</b> - sort by: <input type="text" value="Impact Factor"/></p> <p><input type="radio"/> <b>View Category Data</b> - sort by: <input type="text" value="Category Title"/></p> <p>SUBMIT</p>

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Journal Citation Reports<sup>®</sup>

**IF's are partly relative : 5 in Molecular Biology is very low; in Plant sciences or Environmental sciences = high**

WELCOME ? HELP

Journal Summary List  
 Journals from subject categories ENV

Sorted by: Impact Factor SORT AGAIN

Journals 1 - 20 (of 181)

Page 1 of 10

MARK ALL UPDATE MARKED LIST

Ranking is based on your journal and sort selections.

Mark	Rank	Abbreviated Journal Title <i>(linked to journal information)</i>	ISSN	JCR Data <sup>i</sup>						Eigenfactor <sup>TM</sup> Metrics <sup>i</sup>	
				Total Cites	Impact Factor	5-Year Impact Factor	Immediacy Index	Articles	Cited Half-life	Eigenfactor <sup>TM</sup> Score	Article Influence <sup>TM</sup> Score
<input type="checkbox"/>	1	<a href="#">ENvironmEntal SciEnce</a>	1754-5692	478	8.500	8.526	1.195	128	1.3	0.00236	2.990
<input type="checkbox"/>	2	<a href="#">CRITical REVIEWS ENVIRONMENTAL SCIEnce AND TEChnology</a>	1064-3389	1303	7.091	8.102	0.208	24	8.4	0.00272	2.215
<input type="checkbox"/>	3	<a href="#">FRONTIERS IN ECOLoGy AND ENVIRONMEnt</a>	1540-9295	2211	6.922	6.508	1.804	51	4.0	0.01719	3.202
<input type="checkbox"/>	4	<a href="#">ENVIRONMEntAL HEALTh AND PERSPEctives</a>	0091-6765	21356	6.191	7.103	1.201	293	6.0	0.06446	2.093
<input type="checkbox"/>	5	<a href="#">GLOBAl CHAnge BIOLoGy</a>	1354-1013	10842	5.561	6.600	1.204	230	4.9	0.05297	2.643
<input type="checkbox"/>	6	<a href="#">ENVIRONMEntAL INTeraction</a>	0160-4120	5746	4.786	4.939	1.012	165	5.3	0.01805	1.312
<input type="checkbox"/>	7	<a href="#">CONSERVATION BIOLoGy</a>	0888-8892	14167	4.666	5.261	0.512	160	8.4	0.03525	1.995
<input type="checkbox"/>	8	<a href="#">ENVIRONMEntAL SCIEnce TEChnology</a>	0013-936X	68301	4.670	5.438	0.752	1373	6.3	0.17786	1.458
<input type="checkbox"/>	9	<a href="#">WATER RESOURCES</a>	0043-1354	33139	4.355	4.828	0.550	524	7.7	0.05949	1.188
<input type="checkbox"/>	10	<a href="#">GLOBAl BIogEOChEMISTRY</a>	0886-6236	7213	4.294	5.020	0.663	98	7.3	0.02906	2.571

**Rankings are relative : 5/181 is better than 3/15 !!**

# Steps in the publication process

Selecting the Journal: journal IF, journal ranking

Better submit to a journal with lower IF than to a journal that is not read by your research community (citations)

Check discipline, check the papers and journals that you cite

Read/examine the subjects/topics covered by the journal that you select: SCOPE !

All else being equal: select the journal with the highest impact factor

IF are not comparable across fields ! Compare rankings



# Steps in the publication process

Selecting the Journal:

Make sure the topic of your study fits the **scope of the journal**  
If not, it will either NOT BE ACCEPTED, or NOT READ OR CITED

# Global Change Biology

## Journal Menu

- Journal Home
- **Aims & Scope**
- Author Guidelines
- Editorial Contacts
- View content online
- Virtual Issues

## Sales and Services

- Subscribe / Renew
- Recommend to Library
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- Advertising

## Global Change Biology

### Edited by:

Steve Long

**Print ISSN:** 1354-1013

**Online ISSN:** 1365-2486

**Frequency:** Monthly

**Current Volume:** 17 / 2011

**ISI Journal Citation Reports® Ranking:** 2009: Ecology: 8 / 127; Environmental Sciences: 4 / 180; Biodiversity Conservation: 1 / 28

**Impact Factor:** 5.561

## Aims and Scope

Top ▲

*Global Change Biology* exists to promote understanding of the interface between all aspects of current environmental change and biological systems, including rising tropospheric O<sub>3</sub> and CO<sub>2</sub> concentrations, climate change, loss of biodiversity, and eutrophication. Both biological responses and feedbacks to change are included, and may be considered at any level of organization from molecular to biome. Studies which integrate across levels of organization to provide a mechanistic understanding are particularly encouraged. Studies may be experimental, observational or theoretical, and may concern aquatic or terrestrial and managed or natural environments. *GCB* concentrates on primary research articles, but operates a flexible policy regarding other submissions, which include Technical Papers, Mini-Reviews and Opinion Articles.

*Global Change Biology* defines global change as any consistent trend in the environment - past, present or projected - that affects a substantial part of the globe. Examples include:

- rising tropospheric ozone, carbon dioxide and sulphur dioxide concentrations
- increasing UV-B irradiation
- global climate change
- biological sinks and sources of atmospheric trace gases
- eutrophication
- land use change
- loss of biodiversity
- biological feedback on climate change
- biological mitigation for atmospheric change

All manuscripts relating to aspects of biofuel production from forestry, crop production, enzymatic deconstruction and microbial fuel synthesis to implications for biodiversity, ecosystem services, economics, policy and global change should be submitted to *GCB Bioenergy* [www.GCBBioenergy.com](http://www.GCBBioenergy.com), a new sister journal of *Global Change Biology*. These will no longer be considered for publication in *Global Change Biology*.



- View content online
- View sample issue
- Sign up for e-alerts
- Sign up for RSS feed
- Submit an article

# Steps in the publication process

Selecting the Journal: scope; your cited references; journal IF & ranking

## CONVINCING THE EDITOR

Editor's roles:

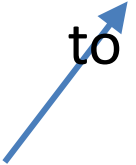
Filter out all papers that are poorly written

Filter out all papers that are out of scope


Filter out all papers that will not be cited (Journal IF !!!)

Make decision based on referee reports (GCB: reject 80% of submitted papers; 50% without review !)

Do not submit manuscripts prematurely. ABSTRACT needs to be really well written !!!



Convince the editor of the relevance of your work in letter + ABSTRACT needs to be really convincing !!!



# Steps in the publication process

Selecting the Journal: scope, journal IF, journal ranking

Convincing the editor

CONVINCING THE REFEREES:

If the manuscript is unclear at places, the referee will not understand and will not be able to assess the science.

Referees role:

Result: Manuscript = rejected

Assessing the scientific quality of the manuscript

If the manuscript is difficult to follow, the referee will become frustrated and much more critical. An easy-to-read manuscript makes them less critical, enhancing the probability that your paper will be accepted

# General structure

Organisation of information and ideas

The objective of this course:

to improve your writing skills and thus your chances  
of becoming a published author

