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How to Publish in International Science Journals

Pierdomenico Perata

•Why publishing in International Journals?
•Which is the BEST Journal?
•The ISI database, The Impact Factor, Journal Immediacy Index, Journal Cited Half-Life.
•Beyond the IF: is the IF a satisfactory index of research quality?
•The ESI (Essential Science Indicators) database-
•How to publish in international Journals: choosing the right Journal for your research, choosing the research subject to publish in the desired Journal.
•Writing: how to write a good manuscript, from the Abstract to the References list.
•Authorship: who deserves being an author of your manuscript?
•The Peer Reviewing process: Editors, Referees, Authors. How to exclude a referee, how to suggest a referee. How to be a good referee.
•Research ethics: the importance of controls in experimental design, the importance of data analysis, fraudulent or manipulated data, paper retractions.

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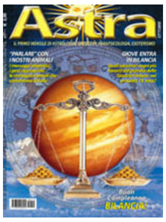
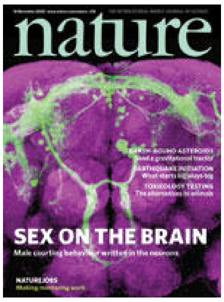
•Why publishing in International Science Journals?





United States Patent and Trademark Office

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•Why publishing in International Science Journals?

A good scientist will publish good scientific papers

Who is a "good scientist"?

A "good scientist" is the one who publishes good papers!

A Researcher is a Scientist?

Which is the difference between "research" and "Science"?

What is Science?

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•What is Science?

How Science Works

DAVID GOODSTEIN

David Goodstein, B.S., M.S., Ph.D., is Vice Provost, Professor of Physics and Applied Physics, and the Frank J. Gilloon Distinguished Teaching and Service Professor, California Institute of Technology, Pasadena, California.

Today, in contrast to the seventeenth century, few would deny the central importance of science to our lives, but not many would be able to give a good account of what science is. To most, the word probably brings to mind not science itself, but the fruits of science, the pervasive complex of technology that has transformed all of our lives. However, science might also be thought to include the vast body of knowledge we have accumulated about the natural world. There are still mysteries, and there always will be mysteries, but the fact is that, by and large, we understand how nature works.

http://www.its.caltech.edu/~dg/HowScien.pdf

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•What is Science?

A. Francis Bacon's Scientific Method

But science is even more than that. If one asks a scientist the question, What is science?, the answer will almost surely be that science is a process, a way of examining the natural world and discovering important truths about it. In short, the essence of science is the scientific method.[3]

Bacon's idea, that science proceeds through the collection of observations without prejudice, has been rejected by all serious thinkers. Everything about the way we do science—the language we use, the instruments we use, the methods we use—depends on clear presuppositions about how the world works.

http://www.its.caltech.edu/~dg/HowScien.pdf

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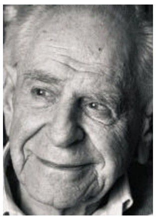
•What is Science?



B. Karl Popper's Falsification Theory

In contrast to Bacon, Popper believed all science begins with a prejudice, or perhaps more politely, a theory or hypothesis. Nobody can say where the theory comes from. Formulating the theory is the creative part of science, and it cannot be analyzed within the realm of philosophy. However, once the theory is in hand, Popper tells us, it is the duty of the scientist to extract from it logical but unexpected predictions that, if they are shown by experiment not to be correct, will serve to render the theory invalid.

http://www.its.caltech.edu/~dg/HowScien.pdf

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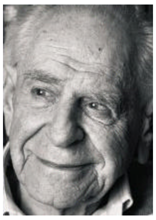
•What is Science?

B. Karl Popper's Falsification Theory



Popper was deeply influenced by the fact that a theory can never be proved right by agreement with observation, but it can be proved wrong by disagreement with observation. Because of this asymmetry, science makes progress uniquely by proving that good ideas are wrong so that they can be replaced by even better ideas. Thus, Bacon's disinterested observer of nature is replaced by Popper's skeptical theorist. The good Popperian scientist somehow comes up with a hypothesis that fits all or most of the known facts, then proceeds to attack that hypothesis at its weakest point by extracting from it predictions that can be shown to be false. This process is known as falsification.[6]

http://www.its.caltech.edu/~dg/HowScien.pdf

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•What is Science?

C. Thomas Kuhn's Paradigm Shifts

A paradigm, for Kuhn, is a sort of consensual world view within which scientists work. It comprises an agreed upon set of assumptions, methods, language, and everything else needed to do science. Within a given paradigm, scientists make steady, incremental progress, doing what Kuhn calls "normal science."

As time goes on, difficulties and contradictions arise that cannot be resolved, but one way or another, they are swept under the rug, rather than being allowed to threaten the central paradigm. However, at a certain point, enough of these difficulties have accumulated so that the situation becomes intolerable. At that point, a scientific revolution occurs, shattering the paradigm and replacing it with an entirely new one.

http://www.its.caltech.edu/~dg/HowScien.pdf

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•What is Science?

D. An Evolved Theory of Science

Scientists are not Baconian observers of nature, but all scientists become Baconians when it comes to describing their observations. Scientists are rigorously, even passionately honest about reporting scientific results and how they were obtained, in formal publications. Scientific data are the coin of the realm in science, and they are always treated with reverence. Those rare instances in which data are found to have been fabricated or altered in some way are always traumatic scandals of the first order.[9] → FRAUD
SCIENTIFIC MISCONDUCT

http://www.its.caltech.edu/~dg/HowScien.pdf

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•What is Science?

The role of peer-reviewing in Science

In the competition among ideas, the institution of peer review plays a central role. Scientific articles submitted for publication and proposals for funding are often sent to anonymous experts in the field, in other words, peers of the author, for review. Peer review works superbly to separate valid science from nonsense, or, in Kuhnian terms, to ensure that the current paradigm has been respected.[11] It works less well as a means of choosing between competing valid ideas, in part because the peer doing the reviewing is often a competitor for the same resources (pages in prestigious journals, funds from government agencies) being sought by the authors. It works very poorly in catching cheating or fraud, because all scientists are socialized to believe that even their bitterest competitor is rigorously honest in the reporting of scientific results, making it easy to fool a referee with purposeful dishonesty if one wants to. Despite all of this, peer review is one of the sacred pillars of the scientific edifice.

•What is Science?

How Science Works

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"the authority of thousands is not worth the humble reasoning of one single person."

"In questioni di scienza L'autorità di mille non vale l'umile ragionare di un singolo" Galileo Galilei

reason. But, contrary to Galileo's famous remark, the fact is that authority is of fundamental importance to science. If a paper's author is a famous scientist, I think the paper is probably worth reading. However, an appeal from a scientific wanna-be, asking that his great new discovery be brought to the attention of the scientific world, is almost surely not worth reading (such papers arrive in my office, on the average, about once a week). The triumph of reason over authority is just one of the many myths about science, some of which I've already discussed. Here's a brief list of others:

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•What is Science?

Myth: Scientists must have open minds, being ready to discard old ideas in favor of new ones.

Fact: Because science is an adversary process in which each idea deserves the most vigorous possible defense, it is useful for the successful progress of science that scientists tenaciously hang on to their own ideas, even in the face of contrary evidence (and they do, they do).

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Some Myths and Facts About Science

Myth: When a new theory comes along, the scientist's duty is to falsify it.

Fact: When a new theory comes along, the scientist's instinct is to verify it. When a theory is new, the effect of a decisive experiment that shows it to be wrong is that both the theory and the experiment are quickly forgotten. This result leads to no progress for anyone in the reward system. Only when a theory is well established and widely accepted does it pay off to prove that it's wrong.

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Some Myths and Facts About Science

Myth: Science must be an open book. For example, every new experiment must be described so completely that any other scientist can reproduce it.

Fact: There is a very large component of skill in making cutting-edge experiments work. Often, the only way to import a new technique into a laboratory is to hire someone (usually a postdoctoral fellow) who has already made it work elsewhere. Nevertheless, scientists have a solemn responsibility to describe the methods they use as fully and accurately as possible. And, eventually, the skill will be acquired by enough people to make the new technique commonplace.

How Science Works

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Some Myths and Facts About Science

Myth: Real science is easily distinguished from pseudoscience.

Fact: This is what philosophers call the problem of demarcation: One of Popper's principal motives in proposing his standard of falsifiability was precisely to provide a means of demarcation between real science and impostors. For example, Einstein's theory of relativity (with which Popper was deeply impressed) made clear predictions that could certainly be falsified if they were not correct. In contrast, Freud's theories of psychoanalysis (with which Popper was far less impressed) could never be proven wrong. Thus, to Popper, relativity was science but psychoanalysis was not.

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Some Myths and Facts About Science

Myth: Scientific theories are just that: theories. All scientific theories are eventually proved wrong and are replaced by other theories.

Fact: The things that science has taught us about how the world works are the most secure elements in all of human knowledge. I must distinguish here between science at the frontiers of knowledge (where by definition we don't yet understand everything and where theories are indeed vulnerable) and textbook science that is known with great confidence. Matter is made of atoms, DNA transmits the blueprints of organisms from generation to generation, light is an electromagnetic wave; these things are not likely to be proved wrong. The theory of relativity and the theory of evolution are in the same class. They are still called theories for historic reasons only.

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Some Myths and Facts About Science

Myth: Scientists are people of uncompromising honesty and integrity.

Fact: They would have to be if Bacon were right about how science works, but he wasn't. Scientists are rigorously honest where honesty matters most to them: in the reporting of scientific procedures and data in peer-reviewed publications. In all else, they are ordinary mortals like all other ordinary mortals.

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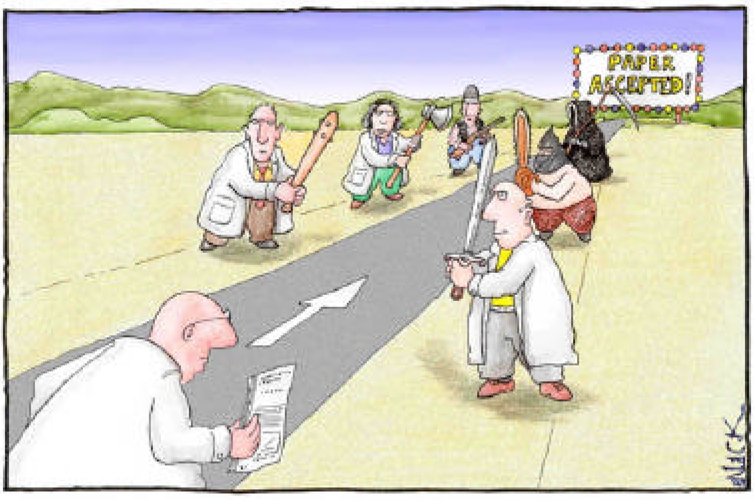
Science is distingished by pseudoscience when:

1. The theoretical underpinnings of the methods must yield testable predictions by means of which the theory could be falsified.
2. The methods should preferably be published in a peer-reviewed journal.
3. There should be a known rate of error that can be used in evaluating the results.
4. The methods should be generally accepted within the relevant scientific community.

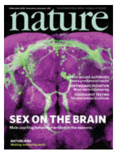
•What is Peer Reviewing?



Most scientists regarded the new streamlined peer-review process as 'quite an improvement.'

•What is Peer Reviewing?

The game of refereeing:
The author's goal: Publish a worthless paper.
The referee's goal: Prevent publishing of a major contribution to field.



Research

Discovery: A couple of months in the laboratory can frequently save a couple of hours in the library.

Writing

"It is dangerous to be right in matters on which the established authorities are wrong." - *Voltaire*

Reviewing

Referee's report: This paper contains much that is new and much that is true. Unfortunately, that which is true is not new and that which is new is not true.

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Publishing flowchart:

1. Organize your data in "publication quality" graphs, tables, photographs
2. Evaluate the quality of your data
3. Choose the Journal
4. Read the instruction for authors
5. Search the Journal for articles on similar subjects: the authors are likely to be the reviewers of your own paper!
6. Choose the title of your manuscript (you will change it later…)
7. Authorship!
8. DO NOT write the abstract first!
9. Write the Introduction
10. Write the Results
11. Write the Discussion (evaluate if merging results+discussion is a good choice)
12. Write the Materials & Methods
13. Write figure legends
14. Type the references list
15. Submit the manuscript (usually online)
16. Suggest/exclude reviewers
17. Read the comments of the editor & reviewers
18. Revise the ms and resubmit OR Submit to a different Journal

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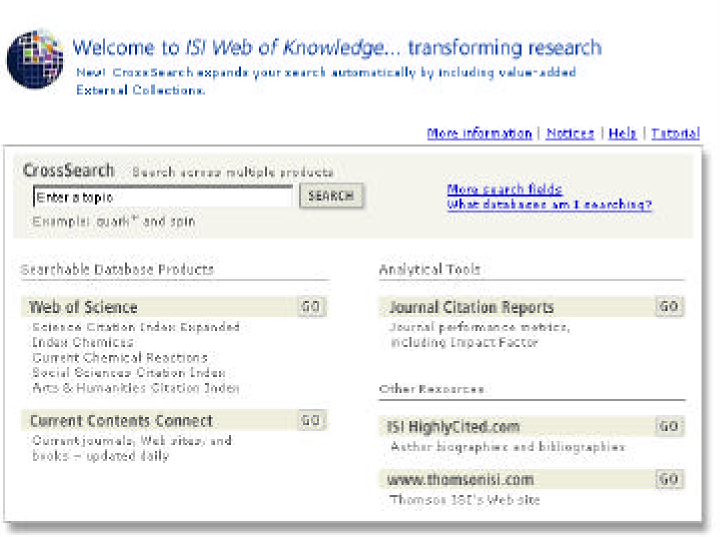
1. Choose the Journal

- Which is the BEST Journal?



http://portal17.isiknowledge.com/portal.cgi

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•Which is the BEST Journal?

Mark	Rank	Abbreviated Journal Title (linked to journal information)	ISSN	Total Cites	Impact Factor	Immediacy Index	Articles	Cited Half-life
☐	1	ANNU REV IMMUNOL	0732-0582	14357	52.431	6.100	30	5.9
☐	2	CA-CANCER J CLIN	0007-9235	3725	44.515			3.3
☐	3	NEW ENGL J MED	0028-4793	159498	38.570	10.478	316	6.9
☐	4	NAT REV CANCER	1474-175X	6618	36.557	4.152	79	2.3
☐	5	PHYSIOL REV	0031-9333	14671	33.918	4.029	35	6.7
☐	6	NAT REV MOL CELL BIO	1471-0072	9446	33.170	4.167	84	2.8
☐	7	REV MOD PHYS	0034-6861	17765	32.771	5.826	23	>10.0
☐	8	NAT REV IMMUNOL	1474-1733	5957	32.695	3.250	80	2.2
☐	9	NATURE	0028-0836	363374	32.182	6.089	878	7.2
☐	10	SCIENCE	0036-8075	332803	31.853	7.379	845	7.0
☐	11	ANNU REV BIOCHEM	0066-4154	16487	31.538	4.182	33	7.9
☐	12	NAT MED	1078-8956	38657	31.223	5.720	168	4.7
☐	13	CELL	0092-8674	136472	28.389	7.632	288	7.9
☐	14	NAT IMMUNOL	1529-2908	14063	27.586	5.400	130	2.7

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•The IMPACT FACTOR

Journal: NATURE

Mark	Journal Title	ISSN	Total Cites	Impact Factor	Immediacy Index	Articles	Cited Half-life	Citing Half-life
☐	NATURE	0028-0836	363374	32.182	6.089	878	7.2	4.6

Cited Journal   Citing Journal   Source Data

Journal Impact Factor

Cites in 2004 to articles published in:	2003 = 24705	Number of articles published in:	2003 = 859
	2002 = 31550		2002 = 889
	Sum: 56255		Sum: 1748

Calculation: $\frac{\text{Cites to recent articles}}{\text{Number of recent articles}} = \frac{56255}{1748} = \mathbf{32.182}$

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•The Journal Immediacy Index

Journal: NATURE

Mark	Journal Title	ISSN	Total Cites	Impact Factor	Immediacy Index	Articles	Cited Half-life	Citing Half-life
☐	NATURE	0028-0836	363374	32.182	6.089	878	7.2	4.6

Cited Journal Citing Journal Source Data

Journal Immediacy Index

Cites in 2004 to articles published in 2004 = 5346
Number of articles published in 2004 = 878

Calculation: $\frac{\text{Cites to current articles}}{\text{Number of current articles}} = \frac{5346}{878} = \mathbf{6.089}$

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•The Cited Half-Life

Journal: NATURE

Mark	Journal Title	ISSN	Total Cites	Impact Factor	Immediacy Index	Articles	Cited Half-life	Citing Half-life
☐	NATURE	0028-0836	363374	32.182	6.089	878	7.2	4.6

Cited Journal Citing Journal Source Data

Journal Cited Half-Life

The cited half-life for the journal is the median age of its articles cited in the current JCR year. Half of the citations to the journal are to articles published within the cited half-life.

Cited Half-Life: 7.2 years

Breakdown of the citations ***to the journal*** by the cumulative percent of 2004 cites to articles published in the following years:

Cited Year	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995	1994-all
# Cites from 2004	5346	24785	31550	31736	32893	24772	26715	23218	17673	16458	128388
Cumulative %	1.47	8.27	16.95	25.69	34.74	41.56	48.91	55.30	60.16	64.69	100

Cited Half-Life Calculations:
The cited half-life calculation finds the number of publication years from the current JCR year that account for 50% of citations received by the journal. Read help for more information on the calculation.

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•The Journal Citing Half Life

Journal: NATURE

Mark	Journal Title	ISSN	Total Cites	Impact Factor	Immediacy Index	Articles	Cited Half-life	Citing Half-life
☐	NATURE	0028-0836	363374	32.182	6.089	878	7.2	4.6

Cited Journal · Citing Journal · Source Data

Journal Citing Half-Life

The citing half-life for the journal is the median age of the articles the journal cited in the current JCR year. Half of the citations in the journal are to articles published within the citing half-life.

Citing Half-Life: 4.6 years

Breakdown of the citations *from the journal* by the cumulative percent of 2004 cites to articles published in the following years:

Cited Year	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995	1994-all
# Cites from 2004	2900	5024	4007	3242	2685	2112	1919	1491	1159	1084	8054
Cumulative %	8.61	23.53	35.43	45.05	53.03	59.30	65.00	69.42	72.87	76.08	100

Citing Half-Life Calculations:

The citing half-life calculation finds the number of publication years from the current JCR year that account for 50% of citations in the journal. Read help for more information on the calculation.

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•Which is the BEST Journal?

subject category:
CARDIAC & CARDIOVASCULAR SYSTEMS

Mark	Rank	Abbreviated Journal Title (linked to journal information)	ISSN	Total Cites	Impact Factor	Immediacy Index	Articles	Cited Half-life
☐	1	CIRCULATION	0009-7322	115133	12.563	1.758	1129	5.5
☐	2	CIRC RES	0009-7330	35038	9.972	1.974	340	6.0
☐	3	J AM COLL CARDIOL	0735-1097	40841	9.133	1.920	591	5.5
☐	4	EUR HEART J	0195-668X	10890	6.247	1.320	250	5.2
☐	5	TRENDS CARDIOVAS MED	1050-1738	1497	4.716	0.396	53	3.7
☐	6	CARDIOVASC RES	0008-6363	12390	4.575	1.152	269	5.0
☐	7	J MOL CELL CARDIOL	0022-2828	7618	4.198	0.681	163	6.1
☐	8	AM HEART J	0002-8703	14243	3.681	0.548	356	8.3
☐	9	AM J PHYSIOL-HEART C	0363-6135	23887	3.539	0.667	652	6.2
☐	10	HEART	1355-6037	6023	3.271	0.554	314	4.3
☐	11	J THORAC CARDIOV SUR	0022-5223	15028	3.263	0.575	327	8.2
☐	12	AM J CARDIOL	0002-9149	29703	3.140	0.444	824	7.5
☐	13	CHEST	0012-3692	27826	3.118	0.534	654	7.0

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☐	6	CARDIOVASC RES	0008-6363	12390	4.575	1.152	269	5.0
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☐	8	AM HEART J	0002-8703	14243	3.681	0.548	356	8.3
☐	9	AM J PHYSIOL-HEART C	0363-6135	23887	3.539	0.667	652	6.2
☐	10	HEART	1355-6037	6023	3.271	0.554	314	4.3
☐	11	J THORAC CARDIOV SUR	0022-5223	15028	3.263	0.575	327	8.2
☐	12	AM J CARDIOL	0002-9149	29703	3.140	0.444	824	7.5
☐	13	CHEST	0012-3692	27826	3.118	0.534	654	7.0

Rank	Category (linked to category information)	Total Cites	Median Impact Factor	Aggregate Impact Factor	Aggregate Immediacy Index	Aggregate Cited Half-Life	# Journals	Articles
1	CARDIAC & CARDIOVASCULAR SYSTEMS	435073	1.488	3.557	0.609	5.80	71	13131

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•Which is the BEST Journal?

subject category:
PLANT SCIENCES

Mark	Rank	Abbreviated Journal Title (linked to journal information)	ISSN	Total Cites	Impact Factor	Immediacy Index	Articles	Cited Half-life
☐	1	ANNU REV PLANT BIOL	1040-2519	7393	16.240	2.565	23	8.5
☐	2	TRENDS PLANT SCI	1360-1385	5598	11.833	1.319	94	4.1
☐	3	PLANT CELL	1040-4651	21024	11.295	2.154	259	5.4
☐	4	CURR OPIN PLANT BIOL	1369-5266	3668	9.057	1.548	93	3.4
☐	5	ANNU REV PHYTOPATHOL	0066-4286	2754	6.714	0.444	18	>10.0
☐	6	PLANT J	0960-7412	15675	6.367	1.418	323	5.2
☐	7	PLANT PHYSIOL	0032-0889	37237	5.881	0.961	560	7.4
☐	8	MOL PLANT MICROBE IN	0894-0282	5305	4.054	0.685	143	5.0
☐	9	PLANT CELL ENVIRON	0140-7791	6869	3.634	0.605	129	7.2
☐	10	CRIT REV PLANT SCI	0735-2689	1124	3.525	0.107	28	7.4
☐	11	PLANT MOL BIOL	0167-4412	10670	3.510	0.149	174	7.2
☐	12	J EXP BOT	0022-0957	8583	3.366	0.485	268	6.1
☐	13	NEW PHYTOL	0028-646X	10076	3.355	0.876	234	8.8

Rank	Category (linked to category information)	Total Cites	Median Impact Factor	Aggregate Impact Factor	Aggregate Immediacy Index	Aggregate Cited Half-Life	# Journals	Articles
1	PLANT SCIENCES	373984	0.976	2.100	0.358	7.50	138	13683

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•Which is the BEST Journal?

subject category:
AGRONOMY

Mark	Rank	Abbreviated Journal Title (linked to journal information)	ISSN	Total Cites	Impact Factor	Immediacy Index	Articles	Cited Half-life
☐	1	ADV AGRON	0065-2113	1509	3.212	0.188	16	>10.0
☐	2	THEOR APPL GENET	0040-5752	12422	2.981	0.322	391	6.7
☐	3	AGR FOREST METEOROL	0168-1923	3668	2.811	0.397	116	7.3
☐	4	MOL BREEDING	1380-3743	1462	2.209	0.197	76	5.4
☐	5	POSTHARVEST BIOL TEC	0925-5214	1814	1.714	0.171	129	4.9
☐	6	EUR J AGRON	1161-0301	723	1.547	0.132	53	4.7
☐	7	PLANT SOIL	0032-079X	9987	1.542	0.121	306	9.3
☐	8	PLANT PATHOL	0032-0862	1835	1.467	0.296	81	7.9
☐	9	GENET RESOUR CROP EV	0925-9864	1107	1.461	0.073	82	5.6
☐	10	EUR J PLANT PATHOL	0929-1873	1298	1.384	0.171	105	5.2
☐	11	WEED SCI	0043-1745	3451	1.292	0.201	139	10.0
☐	12	WEED RES	0043-1737	1266	1.265	0.151	53	>10.0
☐	13	AGRON J	0002-1962	5860	1.254	0.183	208	>10.0

Rank	Category (linked to category information)	Total Cites	Median Impact Factor	Aggregate Impact Factor	Aggregate Immediacy Index	Aggregate Cited Half-Life	# Journals	Articles
1	AGRONOMY	81572	0.770	1.086	0.161	7.90	50	4989

Scuola Superiore Sant'Anna
di Studi Universitari e di Perfezionamento

•Which is the BEST Journal?

Rank	Category (linked to category information)	Total Cites	Median Impact Factor	Aggregate Impact Factor	Aggregate Immediacy Index	Aggregate Cited Half-Life	# Journals	Articles
1	CARDIAC & CARDIOVASCULAR SYSTEMS	435073	1.488	3.557	0.609	5.80	71	13131

Rank	Category (linked to category information)	Total Cites	Median Impact Factor	Aggregate Impact Factor	Aggregate Immediacy Index	Aggregate Cited Half-Life	# Journals	Articles
1	PLANT SCIENCES	373984	0.976	2.100	0.358	7.50	138	13683

Rank	Category (linked to category information)	Total Cites	Median Impact Factor	Aggregate Impact Factor	Aggregate Immediacy Index	Aggregate Cited Half-Life	# Journals	Articles
1	AGRONOMY	81572	0.770	1.086	0.161	7.90	50	4989

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•Beyond the IF: is the IF a satisfactory index of research quality?

- •The IF is an index of Journal's quality
- •The IF is NOT an index of an article quality
- •The IF is NOT an index of Scientist's quality
- •It is NOT correct to sum the IF of the papers of a Scientist to obtain an index of its ability in research
- •The number of citations of a specific paper is a better indicator of the quality of that paper
- •The sum of citation of the papers a scientist have published in the past 10 years is a good indicator of the quality of the scientist
- •The Essential Science Indicators database provides good indicators of a Scientist performance

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•Beyond the IF: Essential Science Indicators

ESI was updated on November 1, 2005 to cover a ten-year plus eight-month period, January 1, 1995-August 31, 2005.

Information for New Users

Citation Rankings:	- Scientists - Institutions - Countries/Territories - Journals
Most Cited Papers:	- Highly Cited Papers (last 10 years) - Hot Papers (last 2 years)
Citation Analysis:	- Baselines - Research Fronts

Commentary:

IN-CITES

SPECIAL TOPICS

SCIENCE-WATCH

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•Beyond the IF: Essential Science Indicators

BY FIELD	Select a scientist from this field: (All Fields) GO
OR	
BY NAME	Select a scientist from the alphabetical list or enter a name to search.
	0-9 A B C D E F G H I J K L M N C
	Example: WEINBERG RA *(more examples)*
	perata p SEARCH

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•Beyond the IF: Essential Science Indicators

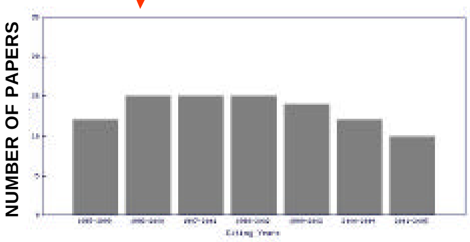
ESSENTIAL SCIENCE Indicators℠ Powered by ISI Web of Knowledge

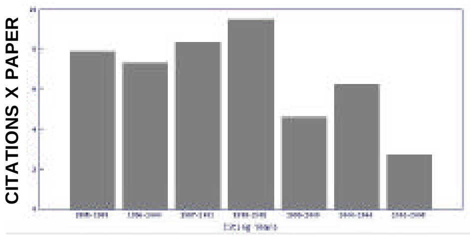
FIELD RANKINGS FOR PERATA, P

Display items with at least: 0 Citation(s)
Sorted by: Citations SORT AGAIN

1 - 1 (of 1) Page 1 of 1

	View		Field	Papers	Citations	Citations Per Paper
1			PLANT & ANIMAL SCIENCE	26	397	15.27
			ALL FIELDS*	28	422	15.07





Scuola Superiore Sant'Anna di Studi Universitari e di Perfezionamento

•Beyond the IF: Essential Science Indicators

ESSENTIAL SCIENCE Indicators[SM] Powered by ISI Web of Knowledge[SM]

HOME | HELP | RETURN TO MENU | INDICES

FIELD RANKINGS FOR PERATA, P

Display items with at least: 0 Citation(s)

Sorted by: Citations SORT AGAIN

1 - 1 (of 1) [1] Page 1 of 1

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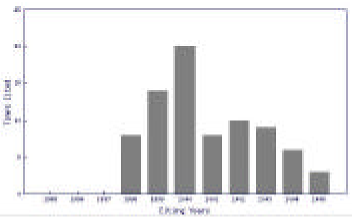

SUGAR REPRESSION OF A GIBBERELLIN-DEPENDENT SIGNALING PATHWAY IN BARLEY EMBRYOS

PERATA P; MATSUKURA C; VERNIERI P; YAMAGUCHI J

PLANT CELL
9 (12): 2197-2208 DEC 1997

Univ Pisa, Dept Crop Plant Biol, Via Mariscoglio 34, I-56124 Pisa, Italy.
Univ Pisa, Dept Crop Plant Biol, I-56124 Pisa, Italy.
Nagoya Univ, Biosci Ctr, Chikusa Ku, Nagoya, Aichi 46401, Japan.

PLANT & ANIMAL SCIENCE

Scuola Superiore Sant'Anna di Studi Universitari e di Perfezionamento

•Beyond the IF: Essential Science Indicators

Citation Thresholds for Scientists, Countries, Institutions, and Journals
January 1995 - August 2005

Field	Scientist	Country	Institution	Journal
Agricultural Sciences	175	192	647	747
Biology & Biochemistry	802	249	4410	1902
Chemistry	716	408	2925	2042
Clinical Medicine	1168	1686	1527	2312
Computer Science	97	41	573	351
Economics & Business	180	38	1184	569
Engineering	206	124	613	577
Environment/Ecology	281	266	1393	1235
Geosciences	474	304	2146	956
Immunology	761	388	4161	4655
Materials Science	257	233	871	714
Mathematics	137	44	1313	739
Microbiology	571	369	3379	3195
Molecular Biology & Genetics	1273	314	7339	3707
Multidisciplinary	120	15	412	65
Neuroscience & Behavior	957	210	4273	4266
Pharmacology & Toxicology	318	[illegible]	[illegible]	[illegible]
Physics	2024	[illegible]	[illegible]	[illegible]
Plant & Animal Science	318	[illegible]	[illegible]	[illegible]
Psychiatry/Psychology	416	[illegible]	[illegible]	[illegible]
Social Sciences, general	126	[illegible]	[illegible]	[illegible]
Space Science	1456	[illegible]	[illegible]	[illegible]

Updated November 1, 2005

Entity	Percent Selected
Scientists	1%
Institutions	1%
Countries	50%
Journals	50%

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- Read the instruction for authors

INSTRUCTIONS FOR AUTHORS

***Plant Physiology* 2005**

Last updated November 4, 2005

ASPB is now offering authors the option to purchase Open A
information, click here: http://www.aspb.org/openaccess/

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- Search the Journal for articles on similar subjects: the authors are likely to be the reviewers of your own paper!

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- Choose the title of your manuscript (you will change it later…)

Old style:
"Effects of ethanol on plant cells and tissues"

New style:
"Ethanol affects plant cells growth and differentiation by modulating the expression of the ANX1 gene"

A histone H3 methyltransferase controls epigenetic events required for meiotic prophase p374
Katsuhiko Hayashi, Kayo Yoshida and Yasuhisa Matsui
doi:10.1038/nature04112
First paragraph | **Full Text** | PDF (1,376K) | Supplementary information
See also: Editor's summary

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•Authorship: who deserves being an author of your manuscript?

Thanks to Joe Blow for expert technical assistance and Jane Doe for valuable discussion.

Thanks to Joe Blow for doing all the work and Jane Doe for telling me what it meant.

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•Authorship: who deserves being an author of your manuscript?

Rules needed on authorship

Sir — You report (*Nature* **389**, 105; 1997) that Dr Friedhelm Herrmann's lawyers argue that as senior author he would not have had any responsibility for possibly fabricated data and, moreover, that a full professor would not have a motive to commit fraud. Both statements are ridiculous.

Any scientist has to publish, or reputation and grant-money will be seriously endangered. The only way to publish for scientists no longer doing bench-work themselves is to guide research and be senior authors. A senior author must be responsible for the scientific soundness and honesty of a paper, or he or she should not be in this distinguished place. They get reputation from it after all, and the quality of a paper is often inherently inferred from the name and status of the senior author.

The minimum requirement for senior authorship should be that the paper has been read, understood and worked on by intelligently and critically discussing it with the people who did the actual bench-work. In a perfect world, the senior author will also have provided ideas and mental input through the course of the experiments and have seen the problems and difficulties of the study. There are heads of laboratories who provide just that, and are therefore rightly named the senior authors. I do not think that — as is sometimes the case — being head of a department or institute, providing laboratory space, or simply giving permission to use costly equipment as such justifies senior authorship. Unfortunately, there are no real rules, but it is time that there were.

C. Esser
Medical Institute of Environmental Hygiene, Auf dem Hennekamp 50, 40225 Düsseldorf, Germany

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•Authorship: who deserves being an author of your manuscript?

Pseudo-authorship

Sir — A recent leading article (*Nature* **387**, 831; 1997) raises the question whether authorship should be redefined. I think it should: readers should know who is really responsible for published research results.

As things stand, researchers need to publish as many articles as possible and this leads to multi-authorship, gift authorship and 'salami' tactics. Journals prescribe how to submit a manuscript, so why not prescribe correct authorship?

In more than 25 years working as a scientific editor (in geology, nuclear energy and technology) and in national and international editorial organizations, I have not been aware of any valid argument for more than three authors per paper, although I recognize that this may not be true for every field.

Perhaps scientific journals and international organizations could take the lead. If journals were to instruct authors that manuscripts with more than three authors would not normally be considered for publication, there would soon be a drop in the number of pseudo-authors.

A. J. van Loon
R&D Text Consulting, PO Box 336, 6860 AH Oosterbeek, The Netherlands

Fraud foreseen

Sir — The widespread occurrence of fraud and misconduct in scientific research prompts me to honour the foresight of Jules Romains (1885–1972) who satirized such improper behaviour many years ago[1]. His farcical comedy *Donogoo* (1920) deals with the description by the famous geographer Yves Le Trouhadec of the golden city of Donogoo-Tonka, which is later shown to be

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•Authorship: who deserves being an author of your manuscript?

Analysis of 1.9 Mb of contiguous sequence from chromosome 4 of *Arabidopsis thaliana*

The EU Arabidopsis Genome Project: M. Bevan[1], I. Bancroft[1], E. Bent[1], K. Love[1], H. Goodman[2], C. Dean[1], R. Bergkamp[3], W. Dirkse[3], M. Van Staveren[3], W. Stiekema[3], L. Drost[1], P. Ridley[1], S.-A. Hudson[1], K. Patel[1], G. Murphy[1], P. Piffanelli[1], H. Wedler[4], E. Wedler[4], R. Wambutt[4], T. Weitzenegger[5], T. M. Pohl[5], N. Terryn[6], J. Gielen[6], R. Villarroel[6], R. De Clerck[6], M. Van Montagu[6], A. Lecharny[7], S. Auborg[7], I. Gy[7], M. Kreis[7], N. Lao[8], T. Kavanagh[8], S. Hempel[9], P. Kotter[9], K.-D. Entian[9], M. Rieger[10], M. Schaeffer[10], B. Funk[10], S. Mueller-Auer[10], M. Silvey[11], R. James[11], A. Montfort[12], A. Pons[12], P. Puigdomenech[12], A. Douka[13], E. Voukelatou[13], D. Milioni[13], P. Hatzopoulos[13], E. Piravandi[14], B. Obermaier[14], H. Hilbert[15], A. Düsterhöft[15], T. Moores[16], J. D. G. Jones[16], T. Eneva[17], K. Palme[17], V. Benes[18], S. Rechman[18], W. Ansorge[18], R. Cooke[19], C. Berger[19], M. Delseny[19], M. Voet[20], G. Volckaert[20], H.-W. Mewes[21], S. Klosterman[21], C. Schueller[21] & N. Chalwatzis[21]

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Preparing your manuscript

1. DO NOT write the abstract first!
2. Write the Introduction
3. Write the Results
4. Write the Discussion (evaluate if merging results+discussion is a good choice)
5. Write the Materials & Methods
6. Now you can write the Abstract!
7. Write figure legends
8. Type the references list

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The Introduction

1. Describe the "state of art" in the field
2. Present the nature and scope of the experiments
3. Briefly describe the principal results of the investigation (no suspense, please)

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The "Results" section

1. Introduce briefly each experiment description with the reasons behind the decision to carry out the experiment
2. Describe the experiment, but avoid details about the methods used.
3. DO NOT discuss the results, but explain how the forthcoming experiment is logically linked to the previous one
4. You should be ready to distribute materials (antibodies, cell lines) that you produced so that others can replicate your experiments

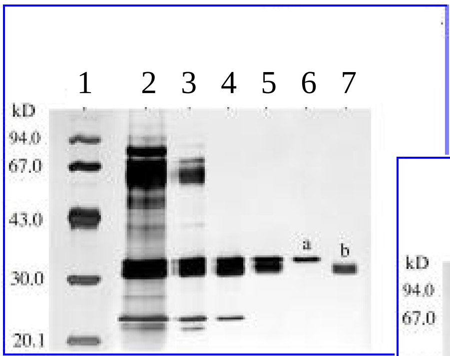
The “References” section

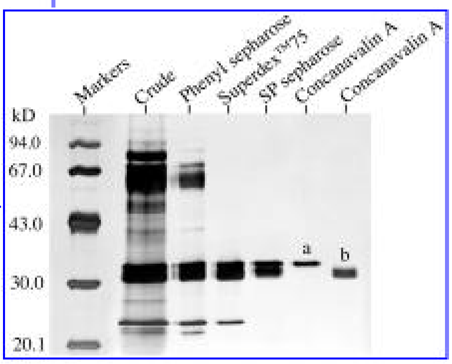
Loreti, E., Alpi, A. and Perata, P. (2000) Glucose and disaccharide-sensing mechanisms modulate the expression of alpha-amylase in barley embryos. *Plant Physiol.* 123, 939–948.
Loreti, E., Poggi, A., Novi, G., Alpi, A. and Perata, P. (2005) A genome-wide analysis of the effects of sucrose on gene expression in Arabidopsis seedlings under anoxia. *Plant Physiol.* 137, 1130–1138.
Malamy, J.E. (2005) Intrinsic and environmental response pathways that regulate root system arc
77.
Malamy, J.E. and Ryan, K.S.
lateral root initiation in Arabi
M'Batchi, B. and Delrot, S. (198
tissues of *Vicia faba* L. *Planta*

Loreti E, Poggi A, Novi G, Alpi A, Perata P. 2005. A genome-wide analysis of the effects of sucrose on gene expression in Arabidopsis seedlings under anoxia. *Plant Physiology* **137**: 1130–1138.
Mueller LA, Zhang P, Rhee SY. 2003. AraCyc: a biochemical pathway database for *Arabidopsis*. *Plant Physiology* **132**: 453–460.

Guglielminetti L, Loreti E, Perata P, Alpi A (1999) Sucrose synthesis in cereal grains under oxygen deprivation. J Plant Res **112**: 353–359
Guglielminetti L, Yamaguchi J, Perata P, Alpi A (1995) Amylolytic activities in cereal seeds under aerobic and anaerobic conditions. Plant Physiol **109**: 1069–1076
Klok EJ, Wilson IW, Wilson D, Chapman SC, Ewing RM, Somerville SC, Peacock WJ, Dolferus R, Dennis ES (2002) Expression profile analysis of low-oxygen response in Arabidopsis root cultures. Plant Cell **14**: 2481–2494

The “Results” section: clearly label your figures





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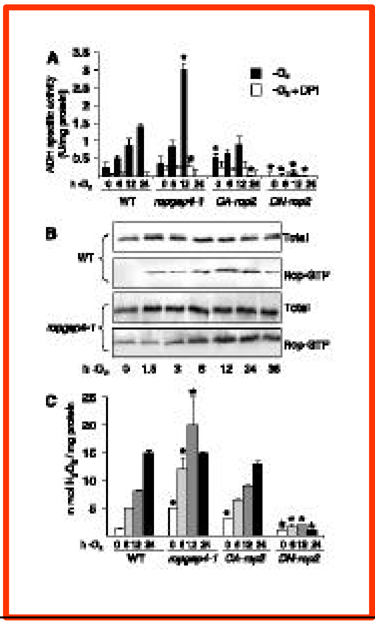
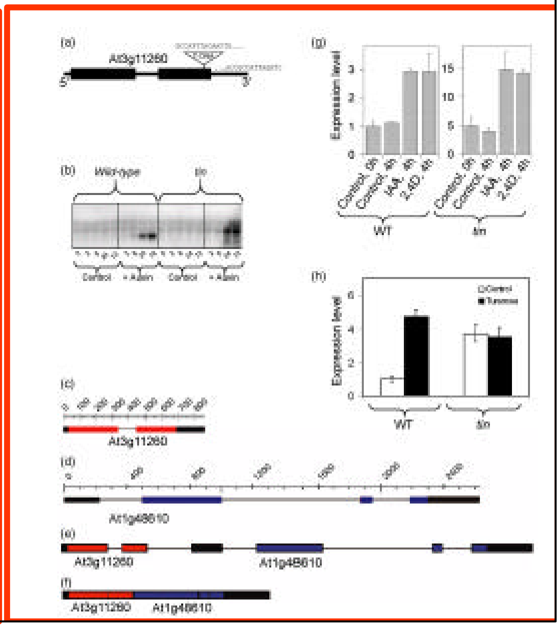
The "Results" section: multiple figs





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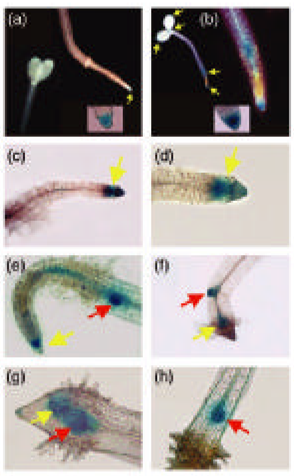
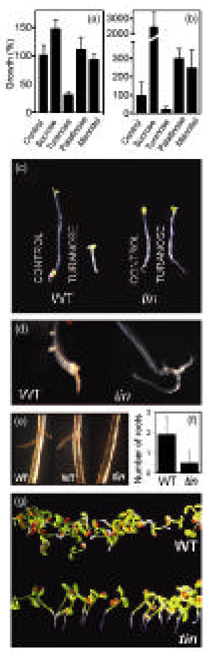
The "Results" section: photographs





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The "Discussion" section

1. The "Discussion" should not be too long and verbose
2. Discuss your data in relation to other published evidence, in favour or against your findings
3. Try to summarize your conclusions with a graphical model

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The "Materials & Methods" section

1. The "materials" first
2. Methods should be described in detail when a new method is used
3. Methods should be described at least to make clear the principle of the method when a "WELL KNOWN" method is used
4. Remember that the methods should be described so that others can replicate your experiments

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•Writing: Useful sentences…

It has been long known.	I haven't bothered to check the references
It is known.	I believe
It is believed.	I think
It is generally believed.	My collegues and I think
There has been some discussion.	Nobody agrees with me
It can be shown.	Take my word for it
It is proven.	It agrees with something mathematical
Of great theoretical importance.	I find it interesting
Of great practical importance.	This justifies my employment
Of great historical importance.	This ought to make me famous
Some samples were chosen for study.	The others didn't make sense
Typical results are shown.	The best results are shown
Correct within order of magnitude.	Wrong
The values were obtained empirically.	The values were obtained by accident
The results are inconclusive.	The results seem to disprove my hypothesis
Additional work is required.	Someone else can work out the details
It might be argued that.	I have a good answer to this objection
The investigations proved rewarding.	My grant has been renewed

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•How to be a good referee

Nature 438, 282 (17 November 2005) | doi:10.1038/438282d

Peer-review system could gain from author feedback

Alon Korngreen[1]

1. Faculty of Life Sciences and the Leslie and Susan Gonda Brain Research Center, Bar-Ilan University, Ramat-Gan 52900, Israel

Sir:

The ever-growing number of submissions to many journals has necessarily increased the number of scientists serving as reviewers. Although the majority of these perform their duty honourably and provide valuable feedback to the authors, some produce bad or even damaging reviews, which may not be filtered by the editors.

I believe anonymity is important for the peer-review process, but some power could also be granted to the authors in order to balance the equation. The flexibility of online systems could be employed to establish a feedback mechanism that may help journals weed out rogue reviewers.

One can imagine a scenario in which all authors would be asked to complete an online questionnaire about the reviews of their manuscript. The questionnaires could be anonymous, but should allow the journal to cross-reference the feedback with the name of each reviewer. Once sufficient data have accumulated, the journal will be able to identify reviewers who are serial offenders and decide not to approach them again.

Gathering feedback from the authors and using that to improve the peer-review process is a simple way of humanizing an increasingly electronic process.

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•Research ethics

- •the importance of controls in experimental design
- •the importance of data analysis
- •fraudulent or manipulated data
- •paper retractions

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•Research ethics

•the importance of controls in experimental design

Control (not treated)
Experimental (treated)

Control (wild-type)
Experimental (mutant)

Control (wild-type not treated)
Experimental (wild-type treated)
Experimental (mutant not treated)
Experimental (mutant treated)

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•Water memory paper

Nature, Vol. 333, No. 6176, pp. 816-818, 30th June, 1988

Human basophil degranulation triggered by very dilute antiserum against IgE

Editorial reservation

READERS of this article may share the incredulity of the many referees who have commented on several versions of it during the past several months. The essence of the result is that an aqueous solution of an antibody retains its ability to evoke a biological response even when diluted to such an extent that there is a negligible chance of there being a single molecule in any sample. There is no physical basis for such an activity. With the kind collaboration of Professor Benveniste, Nature has therefore arranged for independent investigators to observe repetitions of the experiments. A report of this investigation will appear shortly.

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•Water memory paper

Nature, Vol. 333, No. 6176, pp. 816-818, 30th June, 1988

Human basophil degranulation triggered by very dilute antiserum against IgE

Nature. 1993 Dec 9;366(6455):525-7

Human basophil degranulation is not triggered by very dilute antiserum against human IgE.

Hirst SJ, Hayes NA, Burridge J, Pearce FL, Foreman JC.

Department of Pharmacology, University College London, UK.

We have attempted to reproduce the findings of Benveniste and co-workers, who reported in 1988 that degranulation of human basophil leukocytes is triggered by very dilute (10(2)-10(120)) antiserum against IgE. The results were contrary to conventional scientific theory and were not satisfactorily explained. Following as closely as possible the methods of the original study, we can find no evidence for any periodic or polynomial change of degranulation as a function of anti-IgE dilution. Our results contain a source of variation for which we cannot account, but no aspect of the data is consistent with the previously published claims.

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•Water memory paper

Nature, Vol. 333, No. 6176, pp. 816-818, 30th June, 1988

Human basophil degranulation triggered by very dilute antiserum against IgE

Benveniste's own team failed to replicate the results when their work was overseen by investigators including *Nature* editor Dr. John Maddox and professional "pseudo-science debunker" James Randi

NATURE VOL. 334 28 JULY 1988 NEWS AND VIEWS 287

"High-dilution" experiments a delusion

The now celebrated report by Dr J. Benveniste and colleagues elsewhere is found, by a visiting Nature *team, to be an insubstantial basis for the claims made for them.*

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•Water memory paper

1. Benveniste's experiments were "statistically ill-controlled", and the lab displayed unfamiliarity with the concept of sampling error. The method of taking control values was not reliable, and "no substantial effort has been made to exclude systematic error, including observer bias"
2. "interpretation has been clouded by the exclusion of measurements in conflict with the claim". In particular, blood that failed to degranulate was "recorded but not included in analyses prepared for publication". In addition, the experiment sometimes completely failed to work for "periods of several months".
3. There was insufficient "avoidance of contamination", and, to a large extent, "the source of blood for the experiments is not controlled".
4. "the salaries of two of Dr Benveniste's coauthors of the published article are paid for under a contract between INSERM 200 and the French company Boiron et Cie."
5. "The phenomenon described is not reproducible". "We believe that experimental data have been uncritically assessed and their imperfections inadequately reported."

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•Water memory paper

For more informations:

http://en.wikipedia.org/wiki/Jacques_Benveniste#Nature_publication_and_investigation

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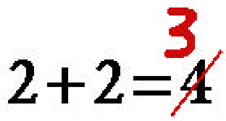
•Research ethics



Imagine that your boss announced that two plus two equaled three - even though all YOUR work said that it equaled four. You'd shown your work to your boss, and submitted reports saying that four looked like the right answer, and had even seen your boss add it up and get your answer several times - but you were ignored. Instead, your boss published a paper telling the world the news that two plus two equals three, and went on to win widespread fame. What would you do? Would you step forward? Would you stake your reputation against that of your boss?

An impossible situation? Not necessarily. Scientific misconduct isn't as rare as you might think. Almost every institution has a mechanism set up to handle allegations of fraud, though few cases make it very far into the public eye. There are, however, notable exceptions. The "Baltimore case," in which a scientist working with noted immunology researcher David Baltimore was accused of falsifying data, is one. Another involves allegations that AIDS researcher Robert Gallo claimed work done by another group as his own. And a case at Cornell's AIDS research center broke onto the front page of the New York Times last weekend.

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•The Baltimore-Imanishi-Kari investigation

In 1986, Dr. David Baltimore, with the assistance of Dr. Imanishi-Kari, published a paper in the journal Cell. Margot O'Toole, a young post-doctoral student working in Imanishi-Kari's lab attempted to replicate research conducted by Imanishi-Kari. She could not.

At this point the matter came to the attention of the Oversight Subcommittee, which held bipartisan public hearings.

The panel found no evidence of scientific fraud and exonerated former Assistant Professor of Biology Thereza Imanishi-Kari, who was accused of fabricating crucial data for an April 25, 1986 *Cell* paper that she co-authored with Baltimore.

1996: a federal appeals panel dismissed allegations of scientific misconduct against former MIT researcher Dr. Theresa Imanishi-Kari

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•Paper retractions

Retraction

Jason W. Lilly, Jude E. Maul, and David B. Stern. (2002). The *Chlamydomonas reinhardtii* Organellar Genomes Respond Transcriptionally and Post-Transcriptionally to Abiotic Stimuli. Plant Cell **14,** 2681–2706.

The authors of the above article have requested that its publication be retracted from *The Plant Cell*. This follows a finding of the Boyce Thompson Institute for Plant Research that Dr. Jason Lilly engaged in scientific misconduct, having falsified microarray data found in Figure 4 and the supplementary data set. The authors have further determined that a significant number of clones on the microarray were incorrectly annotated, and they have been unable to reproduce the increased accumulation of certain chloroplast mRNAs in response to sulfur deprivation. The authors wish to emphasize that Dr. Lilly was found to be solely responsible for the scientific misconduct and misleading data associated with this publication. They deeply regret any inconvenience resulting from the publication of his data.

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•Scientific frauds

Office of Research Integrity

US Department of Health and Human Services

A. Dr. Lilly falsified Figure 4, presenting a hierarchical cluster analysis of differential mRNA accumulation in cells grown in medium deficient in sulfate or phosphate in "The Chlamydonomas reinhardtii organellar genomes respond transcriptionally and post-transcriptionally to abiotic stimuli," The Plant Cell 14:2681:2706, 2002 (hereafter referred to as the Plant Cell paper) by claiming it was an average of three experiments when only one had been conducted;

B. Dr. Lilly further falsified Figure 4 of the Plant Cell paper by falsely coloring two cells in the blown-up portion of the figure that illustrated the induction of high levels of mRNA from the Sac1 gene;

C. Dr. Lilly falsified the supplemental gene array experiments published online claimed to be replicate assays by manipulation of both spreadsheet and image data from a single assay to make the altered data sufficiently different to appear to be separate assays;

D. Dr. Lilly falsified the text describing Figure 5 of the Plant Cell paper by claiming that the run-on assays had been replicated when they had not been;

E. Dr. Lilly falsified the purported replicates of run-on transcription experiments provided in the on-line supplemental material by manipulation of a single assay to make the variant versions appear different; and

F. Dr. Lilly falsified Figure 1 of the Plant Cell paper by using the same 16S control bands for RNA blots of two different genes (psbF and PsaG).

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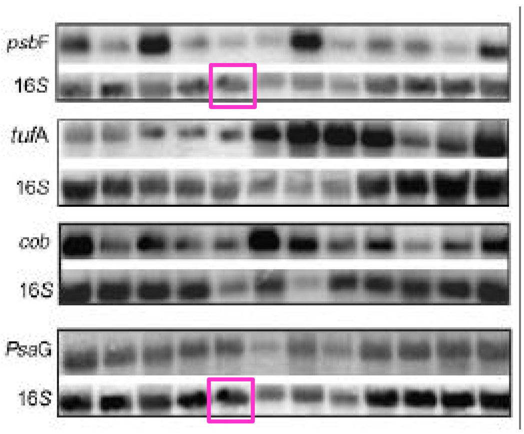
•Scientific fraud



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