

Elsevier-sponsored workshop held at the 25th Congress of the International Society of Forensic Genetics (ISFG)



Scientific Publication: Reading, Writing, and Reviewing

John M. Butler, PhD
U.S. National Institute of Standards and Technology (NIST)
Associate Editor, *Forensic Science International: Genetics*

Melbourne, Australia
5 September 2013

Presentation Outline

The 3 R's of Scientific Publication: Reading, (Re-)Writing, and Reviewing

- Introduction
- Reading
 - Tools for reference collection
- Writing
 - Submission & peer-review process
- Reviewing
 - *FSI Genetics*

Target Audience for This Presentation

- Young (or even more seasoned) scientists who want to learn how to write better or become a more effective reviewer
- Anyone who wants to better understand the review process

“Writing a manuscript is arguably the single most critical component to being a scientist – one for which, in many cases, formal training is minimal.”

– Dr. Nathan Blow, *BioTechniques* editor-in-chief (May 2013, p. 235)



My Qualifications on this Topic

**E
x
p
e
r
i
e
n
c
e**

- Degrees in chemistry
 - BYU (B.S., 1992), University of Virginia (Ph.D., 1995)
 - **Undergraduate classes on scientific writing and public speaking**
- Research-focused career
 - **Published ~150 articles and invited book chapters**
 - Given >300 presentations on scientific topics
- Love for teaching
 - **Written four books (so far) on forensic DNA typing**
- Active reviewer and journal editor responsibilities
 - Associate editor of *Forensic Science International: Genetics* since 2007
 - **Reviewed hundreds of articles for >20 different journals**
- Avid lifelong reader of history and science
 - **Read >2,000 books and thousands of articles**

THOMSON REUTERS **Named by ScienceWatch in July 2011, as the #1 world-wide high-impact author in legal medicine and forensic science over the previous decade**

Professor Wayne Jones



- Forensic toxicologist with the Swedish National Board of Forensic Medicine
- Has written on forensic bibliometrics including a 2005 review article about publications and citations in forensic science

Meeting Wayne Jones in Linköping, Sweden (Nov 2011)



Int. J. Legal Med. (2005) 119: 38–45
DOI 10.1007/s12024-005-0013-z

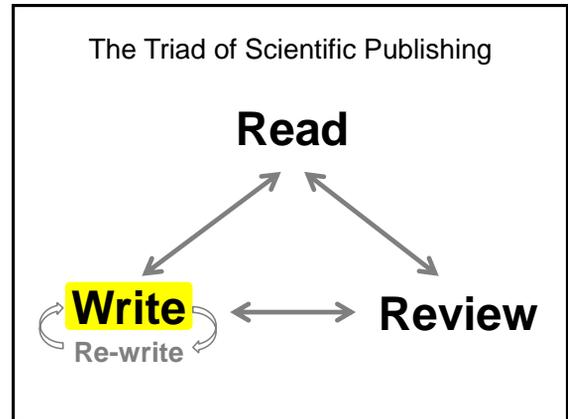
REVIEW ARTICLE

Alan Wayne Jones
Crème de la crème in forensic science and legal medicine
The most highly cited articles, authors and journals 1981–2003

Why Publish Scientific Articles?

- **To spread information and share new knowledge with others**
- To gain recognition, success and prestige for the authors and their institutions
- To win promotion to higher positions, job security, and tenure within academia
- To enhance chances of obtaining grants and research funding
- To gain priority for making a discovery

From Prof. Wayne Jones presentation at 19th IAFS meeting (Madeira, Portugal), 15 Sept 2011
“Publishing in Forensic Sciences: Where and How to Publish and the Meaning of Numbers”



Reading Scientific Articles

- ### Why Read the Literature?
- Reading the relevant literature is crucial to developing expertise in a scientific field
 - You must keep reading to be familiar with advances that are regularly being made
 - Your writing improves the more you read
 - Being widely read in your field helps you prepare relevant reference lists and insightful introductions to your manuscripts

FBI Quality Assurance Standards Requirement for Literature Review

Quality Assurance Standards for Forensic DNA Testing Laboratories
(effective September 1, 2011)

5.1.3.2. The laboratory shall have a program approved by the technical leader for the annual review of scientific literature that documents the analysts' ongoing reading of scientific literature. The laboratory shall maintain or have physical or electronic access to a collection of current books, reviewed journals, or other literature applicable to DNA analysis.

<http://www.fbi.gov/about-us/lab/biometric-analysis/codis/qas-standards-for-forensic-dna-testing-laboratories-effective-9-1-2011>

- ### Benefits of Reading the Literature
- You become familiar with authors and institutions
 - You can improve as a writer and a presenter
 - Your laboratory can improve its protocols
 - Over time you will be building your knowledge
 - In graduate school, I read over 100 articles on PCR before I ever did a single experiment
 - I have gathered and cataloged ~9,000 articles over the last 20 years of work in the forensic DNA field
 - Remember: You don't have to master every paper...
- Have you read any scientific articles in the past month?**



Francis Crick
The Astonishing Hypothesis (1994), page xiii



“There is no form of prose more difficult to understand and more tedious to read than the average scientific paper.”

My thoughts on how to read a scientific article

- Skim the article first
 - Start with title and abstract (may consider authors as well)
 - Scan tables, figures and figure captions
- Examine results and conclusions
 - Do the data presented support the statements made?
- Do not worry about trying to comprehend the entire article at first
 - Most articles will be skimmed rather than read from start to finish
- Highlight key points and make notes on the paper itself so you can go back to them later to refresh your memory

Selecting What to Read...

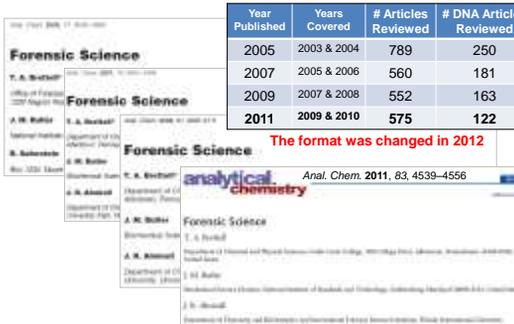
- Review entire journal listing of articles
 - Examine journal issue or view table of contents on-line
- Perform directed searches on specific topics
 - PubMed <http://www.ncbi.nlm.nih.gov/PubMed>
- Sign up for table of contents delivery via email
- **Examine publications cited in review articles**

Application Review on Forensic Science

from 1983 to 2011 appeared every other year in June 15 issue of *Analytical Chemistry*

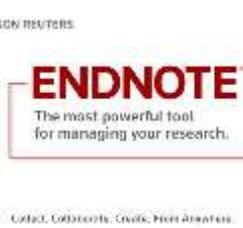
Year Published	Years Covered	# Articles Reviewed	# DNA Articles Reviewed
2005	2003 & 2004	789	250
2007	2005 & 2006	560	181
2009	2007 & 2008	552	163
2011	2009 & 2010	575	122

The format was changed in 2012



Reference Management Systems

- Article information storage and search retrieval
- Reference formatting for different journals

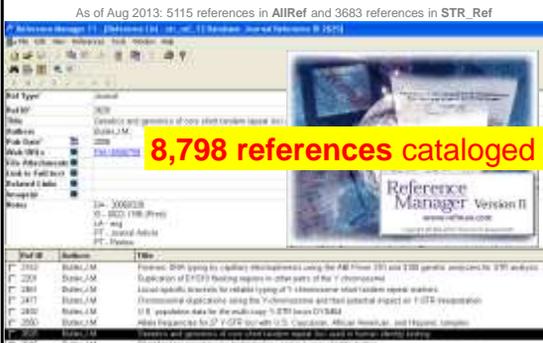



<http://www.refman.com/>

<http://www.endnote.com/>

Reference Manager Database

As of Aug 2013: 5115 references in AllRef and 3683 references in STR_Ref



8,798 references cataloged

Writing Scientific Articles

Why you need to write up your work

- Peer-review usually generates higher-quality information
- Talks are not held to the same standard as a written publication (that has been peer-reviewed)
- A written publication is also accessible to those who did not attend a presentation and is archived for future scientists to read

Thoughts on How to Write a Scientific Article

- **Outline the ideas first** with a purpose and plan
 - Decide on scope & audience and select target journal
- Write Materials and Methods section first
- Prepare all figures & tables
 - captions should be stand-alone
- Write Results and Discussion based on data shown in figures & tables
- Write Introduction to provide context to your work
- Prepare reference list according to journal format
- **Write abstract last and then finalize title**
 - Most critical pieces since they will be the most read!

Important Steps to Address in Writing a Scientific Article

- Select a journal based on desired audience
- Decide on the scope of information
 - How much data will be covered? Should the material be subdivided into more than one article?
- Decide on article category
 - Original article, technical report, case report, etc.
- Pay attention to the reference format

Some Decisions to Be Made

- How to subdivide information into digestible sections?
- What information is needed in Materials and Methods to permit someone to follow and repeat your experiments?
- What should be covered in a figure or table?
- What should be supplemental material versus material in the paper itself?

David McCullough



“Writing is thinking. **To write well is to think clearly.**
That's why it's so hard.”

–David McCullough, Pulitzer Prize winner

(<http://www.neh.gov/about/awards/jefferson-lecture/david-mccullough-interview>)

My experience with writing

- **Focus**
 - Environment – I need a **quiet place** with no interruptions in order to get into the flow of writing
 - Time – I need **long blocks of time** (around 6 hours has been optimal for me, which typically means late at night)
- **Perspective**
 - **Think from the readers' perspective** (this will require learning to step outside of yourself and see what you have written with fresh eyes)
 - Work on **content flow and clarity** (this will require multiple re-writes to your manuscript)
 - **Know your audience** (you should select a journal from which you have read articles previously)

Advice to Improve Clarity, Conciseness, and Cohesion in Scientific Writing

- Omit unnecessary words
- Put actions in verbs
- Place verbs near subjects
- Put familiar information first
- Use active rather than passive voice in writing (“We performed an experiment” instead of “An experiment was performed by us”)

From Nathan Sheffield (Duke University, Institute for Genome Sciences and Policy) September 8, 2011 presentation entitled “Scientific Writing: Clarity, Conciseness, and Cohesion”

The Science of Scientific Writing

George Gopen & Judith Swan (1990)

<http://www.americanscientist.org/issues/pub/the-science-of-scientific-writing>

Some Recommendations to Improve Accessibility:

- 1) Put grammatical subjects close to their verbs
- 2) Put information intended to be emphasized towards the end of a sentence (the **stress position**)
- 3) Place the person or thing whose “story” a sentence is telling at the beginning of the sentence (the **topic position**)
- 4) Provide context for the reader before sharing anything new

Gopen, G.D., & Swan, J.A. (1990). The science of scientific writing. *American Scientist*, 78, 550-558



George Whitesides on how to write a scientific article

Adv. Mater. (2004) 16(15): 1375-1377

ADVANCED MATERIALS

Whitesides' Group: Writing a Paper¹⁰¹

By George M. Whitesides¹

1. What is a Scientific Paper?

A paper is an organized development of arguments, ideas, and conclusions, intended to inform the reader. Papers are a part of research. A good research plan and good writing skills are essential to success in research. Writing and publishing a paper is a process that takes time, and is often a challenge. The process of writing a paper is a process that takes time, and is often a challenge. The process of writing a paper is a process that takes time, and is often a challenge.

do not ignore the details, and fail to consider. Much of the time in writing a paper is spent on the details of the thought that goes into the organization of the ideas and the writing. It can be a difficult process to learn to do through formal classes, and it is often a matter of learning to do it on your own. Writing a paper is a process that takes time, and is often a challenge. The process of writing a paper is a process that takes time, and is often a challenge.

author of more than 1150 scientific articles and 50 patents with an h-index of 181 (as of Aug 2013)

BioTechniques Special Series: Manuscript Tips

from Nathan Blow, editor-in-chief, July & August 2013

<http://www.biotechniques.com/news/>

- 1) Abstracts – Part 1 07/16/2013
- 2) Abstracts – Part 2 07/18/2013
- 3) Introducing the Introduction 07/23/2013
- 4) Materials and Methods 07/29/2013
- 5) Top 10 Submission Tips 08/02/2013
- 6) Discussing the Discussion 08/06/2013
- 7) Figure It Out 08/20/2013

See also Blow, N.S. (2013). The write way. *BioTechniques*, 54, 235.

Training in Scientific Writing is Needed

“To expect scientists to produce readable work without any training, and without any reward for success or retribution for failure, is like expecting us to play violins without teachers or to observe speed limits without policemen. Some may do it, but most won't or can't.”

- Martin W. Gregory (1992) “The infectiousness of pompous prose”, *Nature* 360: 11-12

Elements of a Scientific Article

- Title
- Keywords
- Authors & Affiliations
- Introduction
- Materials & Methods
- Results & Discussion
- Conclusions
- Acknowledgments
- Reference list
- **Figures, tables, and captions**
- **Supplemental material**

Your article title needs to be descriptive enough to have value but not too long

Appropriate selection of keywords is crucial to enable effective finding of your article by future interested readers using on-line searches

Authorship

- **Authorship brings both credit and responsibility**
 - Can each author explain and defend the data and conclusions made in the article?
 - Co-authors should read and agree with the final version of the article PRIOR to submission!
 - The acknowledgments section exists to express appreciation for those who have contributed but not enough for authorship
 - not necessarily appropriate to include everyone in your lab
 - simple sample contribution should not guarantee authorship
- For a discussion on authorship vs. contributorship, see http://www.icmje.org/ethical_1author.html
- **Many journals now require the role of each listed author to be described**

Acknowledgments

- **Express genuine gratitude** for sources of funding and any technical assistance with ideas or materials where individuals are not authors
 - Always include reference to funding sources (especially if you want to receive future funds)
- Disclose potential conflicts of interest
- Institutional disclaimers may be required (e.g., NIST)
 - "Certain commercial equipment, instruments, and materials are identified in order to specify experimental procedures as completely as possible. In no case does such identification imply a recommendation or endorsement by the National Institute of Standards and Technology nor does it imply that any of the materials, instruments, or equipment identified are necessarily the best available for the purpose."

Data Display – Tables & Figures

- Think carefully about how data are conveyed
- An entire workshop could be taught on best practices for displaying data in figures or tables
- Captions should enable a table or figure to be understandable independently of the text

Reference List

- Should be appropriate, relevant, and without any mistakes
 - In my opinion, your scientific abilities and reputation are connected to quality citations to appropriate references
- As an editor, I use the reference list as a gauge for the attention to detail that authors exhibit
 - If references are incomplete, have mistakes, or are in different formats, then I lose confidence in the quality of the work
- **Extensive self-citation suggests both a lack of humility and perhaps failure to appreciate the work of others in the field**

"Source Attribution" and Literature Categories

- **Always cite your sources**
 - Important to know where something came from because you might need to go back to it
 - Not all information is of equal value or importance
- Literature can be subdivided into several categories:**
- **Peer-reviewed literature** (containing data)
 - Reports (evaluating a methodology)
 - Review articles (commenting on others' data)
 - Non-peer reviewed literature (representing the authors' opinions only) – e.g., conference proceedings

Suggestions for Writing and Re-Writing

- Write, then read, then re-write, then read, then re-write (continue this process as needed)
 - **Dozens of drafts may be required to polishing a text into the desired document**
- **Read the text out loud as you are editing...**
 - Write as if you were presenting to a friend
- Write in short sentences where possible
 - Omit unnecessary words
 - Don't use words your audience will likely not understand. Your goal is to clearly explain your work, not sound smart.

See Martin W. Gregory (1992) "The infectiousness of pompous prose", *Nature* 360: 11-12

Additional Thoughts

- Writing involves a lot of re-writing (edit, edit, edit)
- Re-read your manuscript one final time before submission (perhaps after waiting a day or two to approach it with a fresh perspective)
- **Ask others for their input (and be willing to listen and learn from their suggestions)**
 - At NIST, we have an internal review process for all manuscripts before they are submitted to a journal

English Language Assistance

- If English is not your primary language, it may be helpful to obtain language editing help
- **Reviewers and editors may reject your article outright if it contains poor English**
- On-line resources exist to improve your English writing skills (e.g., <https://cgl.duke.edu/web/sciwriting/>)
- Fees to perform English editing can be hundreds of dollars per manuscript

Submission & Peer-Review Process

Importance of Selecting an Appropriate Journal

- Depends on your intended audience
- Speed to publication
- Impact factor of the journal
- Remember that peer-review is not perfect
 - If a poor quality article (or one you have a specific concern with) makes it through the process, then a letter to the editor may be an appropriate avenue to pursue further clarification or correction
- An editor can reject an article if it is not considered appropriate for the journal's intended audience

Manuscript Submission

- Cover letter
 - Although not always required, it helps to **introduce your article with a brief letter to the editor** briefly reviewing your work and its importance
- Suggested reviewers
 - You are welcome to **identify potential reviewers** and reviewers who may have a conflict of interest
 - I had an article within the past year where the authors recommended a close colleague as a reviewer. After completing the blinded review, the reviewer contacted me to state that there was a potential conflict of interest. This reviewer was removed from consideration – but the review took longer than it could have.
- **Do NOT co-submit** your article to another journal!
 - We have caught several authors who have done this in the past few years and have banned them from submission to both journals for a period of time

Responding to Reviews

- Address reviewer and editor concerns point-by-point in a direct and pleasant manner
 - Your purpose is to convince the editor (and often the original reviewers) that you have carefully considered the initial concerns raised
- Provide respectful rebuttals
 - Criticism is hard to take but is necessary to improve your work

Some reasons why articles may be rejected

- Material covered in the article is deemed **inappropriate for the journal or insufficiently novel** by the reviewers and/or the editor
- **Poor English language and grammar** make it challenging for the article to be understood
- One or more of the reviewers feel that **conclusions cannot be supported** by the results
- **Poor experimental design** such that results obtained are not meaningful
- **Rude responses** to reviewers and/or editors **that fail to address concerns** raised during revision



Top 10 Submission Tips

from *BioTechniques* editor-in-chief Nathan S. Blow

1. Know the journal
2. Know the submission and formatting guidelines
3. Write with an active voice
4. Avoid "wordiness"
5. Practice quality control
6. Create a true cover letter
7. Know your references
8. Format figures and captions correctly
9. Ask the editor
10. Rebut decisions effectively

If contacting the editor, please be polite, patient, and persistent

http://www.biotechniques.com/news/Special-Series-Manuscript-Tips-Top-10-Submission-Tips/biotechniques-345608.html#_UgY1j3-JJw0

Galley Proof Review

- Galley proofs are provided to authors to verify the type composition when a manuscript is laid out for publication
- **Review them carefully** – all authors should see them – this is your last chance to avoid appearing foolish before your article goes into print...
- **This can be a lot of work** for the first author and/or corresponding author

Reviewing Scientific Articles



Why do Reviewers review?

GIVE	TAKE
Academic 'duty'	Updated with latest developments
	Helps with own research or new ideas
	Career development
	Awareness of new research before their peers
	General interest in the area
	Builds association with journals and Editors

<http://www.elsevier.com/reviewers/home#why-review>

Elsevier Reviewer Badge



- You can include a reviewer badge in your e-mail signature or add it to your personal webpage

<http://www.elsevier.com/reviewers/supporting-reviewers/reviewerbadge>

Qualities of a Good Reviewer

- Objective
- Thorough and constructive feedback to editor and authors
 - Clear recommendation to the editor
 - Collegial comments to the authors
 - The more detail, the better to improve the article during a revision process
- Review completed in the requested timeframe**
- Keep contents confidential following review
 - Destroy copy of manuscript
- If you were the author of the article, how would you like a reviewer to treat you?**



Declining to review

	58% paper outside my area of expertise
	49% too busy doing own research, lecturing, etc.
	30% too many prior reviewing commitments
	20% personal reasons

(Source: Peer Review Survey 2009)

If you decline, your suggestions for an alternative reviewer are appreciated

The Peer-Review Process Based on My Perspective as an Editor

- Authors write article according to journal guidelines (each journal has an "Instructions for Authors")
- Steps during review
 - Article submitted to journal by corresponding author
 - Assigned to an editor
 - Editor asks 2 or more scientists to review the article in a specific timeframe (usually 2-3 weeks)
 - Editor takes reviews into consideration and responds to author with **Accept, Revise, or Reject**; "Revise" is most common
 - Author revises article and resubmits it for another review

Unfortunately, busy scientists often do not complete their reviews in a timely fashion (requiring the editor to remind them)

My thoughts on reviewing

- I like to **print out the article** so that I can mark corrections and comments on it
- I first **skim** the article to get an idea of the topic and scope involved
- I review the **title, abstract, and conclusions** first
- I check the **reference list** for consistency and format
- I examine the **Materials and Methods** to see if sufficient detail is present
- I **read text and examine figures and tables** carefully and mark comments on the article
- I **type up my comments** and provide them to the editor with a recommendation for acceptance, revision or rejection

Writing Your Review

- Provide a **brief summary of the article's purpose**
- Provide a **recommendation to the editor** (acceptance, revision, or rejection)
- Provide support for your recommendation through **specific comments** addressed to the authors
- Include **major concerns first** then cover minor issues

- Some changes may be essential and others just suggestions to improve the manuscript (make concerns clear to authors)
 - A reviewer should not copy-edit the manuscript if English grammar needs significant work (just state concern with the readability of the text and perhaps recommend rejection)

Your review should be more descriptive than this example...

"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."

– Attributed as a referee's report in H. Eves, *Return to Mathematical Circles* (1988). Also attributed to a 19-th century scientist commenting on one of his competitor's papers, cited in I. M. Klotz, 'How to become famous by being wrong in science', *International Journal of Quantitative Chemistry*, 24, 861-890, which is quoted in Frederick Grinnell, *Everyday Practice of Science* (2008), 86.

Requesting Additional Experiments

- Remember that this article is not your work...
- Ask and address the question: "Did the authors adequately set up their study and would their study require any extra work to support their conclusions?"

Additional Areas to Examine

- **Conclusions**
 - Sometimes authors include unjustified claims or make generalizations that are not supported by their results (i.e., they over extrapolate their conclusions)
- **References**
 - Are they appropriate, up-to-date, too many self-citations, or too few citations?

Questions about Tables and Figures

- **Appropriate**
 - Are they necessary? Do they add value to the article? Are there too many or too few?
- **Understandable**
 - Are they easy to understand?
 - Does a figure need color to make it clear?
 - Are captions complete?
 - Are sizes of figures appropriate for what is being shared?
 - Are the quality and readability of the image sufficient?
 - Are figures consistent across the manuscript in terms of font size and style, legends, and axes?

Do's and Don'ts of the Review Process

Do

- 1) Provide clear comments to authors
- 2) Be consistent with comments to authors and editor
- 3) Provide specific references to text to support your critiques
- 4) Reread your review to ensure you are not too harsh
- 5) Treat authors of a manuscript as your equal independent of quality

Do Not

- 1) State in your comments to the authors your recommendation to the editor
- 2) Praise manuscript in authors comments and disparage it in confidential comments to editor
- 3) Make vague text references or opinions not supported by data
- 4) Send off your review without looking over it at least once
- 5) Talk down to authors (remember that science is a collaborative process)

Lovejoy, T.I., Revenson, T.A., France, C.R. (2011). Reviewing manuscripts for peer-reviewed journals: a primer for novice and seasoned reviewers. *Annals of Behavioral Medicine*, 42, 1-13.

Bibliometrics

efforts to measure scientific productivity in an academic world of "Publish or Perish"

- **Impact factor (for journals)** http://en.wikipedia.org/wiki/Impact_factor
 - a measure of the citations to science journals
 - can reflect relative importance of a journal to its field
 - devised by Eugene Garfield, the founder of the Institute for Scientific Information
 - calculated yearly starting from 1975 for those journals that are indexed in the *Journal Citation Reports*
- **h-index (for authors)** <http://en.wikipedia.org/wiki/H-index>
 - described in 2005 by Jorge Hirsch (*Proc Natl Acad Sci* 102: 16569-16572)
 - an attempt to measure an author's productivity and impact
 - based on a list of an author's publications ranked in descending order by the number of times each publication is cited
 - value of h is equal to the number of papers (N) in the list that have N or more citations

Impact Factor of a Journal



Eugene Garfield

- Concept first described in 1955 and developed by Eugene Garfield
- Reflects the average number of citations to recent articles published in the journal
- An impact factor for 2012 (released in 2013)

The number of times that articles published in the journal in 2010 and 2011 were cited by articles in indexed journal during 2012

The total number of "citable items" published in that journal in 2010 and 2011

See Garfield, E. (2006). The history and meaning of the journal impact factor. *Journal of the American Medical Association* 295: 90-93

Forensic Science International: Genetics has an Improving Journal Impact Factor



Times cited – ranked highest to lowest with publication year

h-index = 29 (almost 30)

rank	year	# cites												
1	2003	166	16	1995	54	31	2001	29	46	2007	15	61	2005	1
2	2006	160	17	2006	53	32	1999	29	47	2001	15	62	2004	1
3	2004	145	18	1994	46	33	1997	29	48	2005	14	63	2003	1
4	1995	135	19	2004	42	34	2011	28	49	1998	14	64	2013	0
5	2006	133	20	2005	41	35	2003	28	50	2007	11	65	2013	0
6	2005	117	21	1996	41	36	2004	27	51	2005	11	66	2012	0
7	2002	105	22	2008	40	37	2002	26	52	2011	8	67	2011	0
8	2002	86	23	2003	40	38	2006	22	53	2011	8	68	2010	0
9	2004	78	24	1998	39	39	2004	19	54	2009	8	69	2005	0
10	2001	74	25	2005	38	40	2004	18	55	2005	8			
11	1994	72	26	2007	34	41	2005	17	56	2004	7			
12	1999	70	27	2008	33	42	2005	17	57	2011	4			
13	2003	63	28	2001	30	43	2010	16	58	2012	2			
14	2006	60	29	1998	30	44	2008	16	59	2013	1			
15	2004	60	30	2005	29	45	2009	15	60	2013	1			

"John M Butler" Web of Science Search 8/17/2013

h-index Comparisons for John M. Butler

Web of Science <http://isiknowledge.com/wos> Google Scholar <http://scholar.google.com>

	Web of Science	Google Scholar
Number of Articles Considered	69	180
Total Number of Citations	2580	6261
h-index #pubs with at least h citations	29	41
i10-index #pubs with ≥10 citations	51	80

Google Scholar found more articles and includes books, book chapters, and conference proceedings (e.g., my 2005 *Forensic DNA Typing* textbook is cited 494 times)

FSI Genetics

<http://www.ees.elsevier.com/fsigen/>

Forensic Science International: Genetics

Welcome to the online submission and editorial system for Forensic Science International: Genetics.

FSI: Genetics will be specifically devoted to Forensic Genetics. This branch of Forensic Science can be defined as the application of Genetics (in the sense of a science with the purpose of studying inherited characteristics for the analysis of inter- and intraspecific variations in populations) for the resolution of legal conflicts. This includes paternity testing, criminal casework, and identification of human remains. Although protein and enzyme polymorphisms were firstly used to fulfil the aims of the field they have been substituted nowadays by DNA polymorphisms analyzed by a variety of molecular biological typing technologies. The amount of work in this field has increased enormously with no signs of slowing down with many new applications such as the application to non-human DNA material (crime scene, illegal trade in endangered species evidences, and bioterrorism) and the building and appropriate management of DNA databases.

The scope of the journal includes:

- Forensic applications of human polymorphism: testing of paternity and other family relationships; migration cases; typing of biological stains and tissues from

Author Information

[Log in](#)
[Journal Homepage](#)
[Authors' Home](#)
[Guide for Authors](#)
[Tutorial for Authors](#)
[Articles Guidelines](#)
[Copyright Information](#)
[EES Retention Policy](#)
[Funding Bodies](#)
[Compliance](#)
[Language Services](#)
[Authors' Update](#)

Reviewer Information

[Log in](#)
[Reviewer Guidelines](#)
[Tutorial for Reviewers](#)
[Reviewers' Home](#)
[Reviewers' Update](#)

Editor Options with FSI Genetics Articles

- If *FSI Genetics* rejects an article, either pre-review or post-review, the manuscript can be transferred to another Elsevier journal for consideration

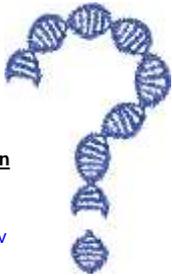
No Decision	Forensic Science International (FSI) Science & Justice (SCIJUS) Legal Medicine (LEGMED)
No Decision	
Accept	
Provisionally Accept	
Revise	
Reject	
Reject - pre-peer review - Transfer to FSI	
Reject - post-peer review - Transfer to FSI	
Reject - pre-peer review - Transfer to SCIJUS	
Reject - post-peer review - Transfer to SCIJUS	
Reject - pre-peer review - Transfer to LEGMED	
Reject - post-peer review - Transfer to LEGMED	
Reject (OFAC Sanctions)	

My Overall Summary Thoughts

- READ** • The best preparation to write well is to **critically read a lot of papers**
- WRITE** • **Writing well takes practice** and is one of the most valuable skills you can develop
 - Effective communication benefits scientific advancement
- REVIEW** • **Help review** the work of other scientists
 - As an editor, I appreciate your willingness to be a reviewer when you are asked to help
 - An important way to give back to the community

Thank you for your attention

Acknowledgments:
Aisling Murphy (Elsevier)
Kathy Sharpless (NIST) who provided feedback on this presentation
My wife for her input and support



Contact Information
John Butler
 NIST Fellow
john.butler@nist.gov
 +1-301-975-4049

A copy of this presentation is available at:
<http://www.cstl.nist.gov/strbase/NISTpub.htm>