SCHOLARLY COMMUNICATION: AN OVERVIEW

Compiled & Presented by
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Agenda

- Scholarly communication-an overview
- Definition and Background
- Stakeholders and lifecycle
- Types of scholarly communication
- Forms of scholarly communication
- IPR forms
  - Preparing scholarly communication :Plan of work
- Format and structure
  - IMRAD-(Introduction, methods, Results ,Analysis ,Discussion)
- Sample formats
- Tools for scholarly communication
- Scholarly publishing avenues
- Scholarly open access
- Open Science, Open research and open data
- Avenues for libraries
- Conclusion
Definition and Background

The system through which research and other scholarly writings are created, evaluated for quality, disseminated to the scholarly community, and preserved for future use. The system includes both formal means of communication, such as publication in peer-reviewed journals, and informal channels, such as electronic listservs.

ACRL, 2003

Scholarly communication is frequently defined or depicted as a lifecycle documenting the steps involved in the creation, publication, dissemination and discovery of a piece of scholarly research.

In 2003, ACRL conducted a major update of the Toolkit and migrated it to ACRL LibGuides. https://acrl.libguides.com/scholcomm/toolkit
Background Cont..

- Describes the process of disseminating research results and other scholarship in all disciplines.

- Primary method of scholarly communication is the journal literature.

- Academic structure is based on this model – promotion and tenure.

- A social phenomenon whereby intellectual and creative activity is passed on from one scholar to another.

- Scientific experiment is incomplete unless it is published and familiarized.

- Preserved for posterity.

  - Created as a public good to facilitate inquiry and knowledge sharing.

  - Vast majority do not expect direct financial reward.

  - Internet now provides much easier and instant means of connection.

- Social media is a boon for any type of communication.
Stakeholders and life cycle

Main Players

- Authors – Do research and write articles/books.
- Peer reviewers – Evaluate critically the writing and thus keep up quality.
- Editors – Collect articles, copy-edit, print and distribute.
- Libraries – procure articles, books & other docs. and preserve them – Facilitate their use.
- Societies and Intuitions – Publish, distribute, disseminate and archive.
*Types of Scholarly Communication

**Types

** Formal (through published/printed articles and books)

** Informal (through conferences /discussion and networking with peers)

** Gray

(Annual, Research, Technical, Project reports, etc. and Working papers)
Forms of scholarly communication

- Journal Articles (Full articles/Original articles letters/Rapid communications/short communications review papers/perspectives)
- Conference Proceedings
- Book / Book chapters
- Reports & Technical reports
- Monographs
- Blogs, Websites
- Working reports
- Newspaper/ magazine articles
- Data sets (Table and figures)
- Learning objectives
- Drawings, Paintings, Logos, Maps, Charts
- Video and Sound Recordings
Growth of scholarly communication

Global scientific output doubles every nine years (Nature News Blog dated 07 May 2014 by Richard Van Noorden)

33100 English Language and 9400 non English Language Peer reviewed journals adding over 3 million articles every year (STM Report 2018)

Scholarly Literature - 155 million Journal articles
39.3 million patent families with more then 70 million patents
More than one lakh - E-Books
7.3 million – Data Sets
(Source: Web of Knowledge platform)

Books around 13 crores (Google;telegraph)
Scholarly Articles Last 5 Years - Web of Science (India Address Search)

- 311,651 Articles
- 19,329 Reviews
- 8,192 Letters
- 5,313 Proceedings Papers
- 9,223 Editorial Material
- 22,273 Meeting Abstracts
- 8,314 Early Access
- 1,924 Corrections
- 1,029 Book Reviews
- 338 Book Chapters
Forms of Intellectual Property Rights

- Patents
- Trademarks
- Copyrights
- Geographical Indication
- Plant Variety Protection
- Layout Design Protection
## Cumulative Statistics

### Grants / Registrations

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Patent Trends

Copyrights

Source: Cell for IPR Promotion and Management (CIPAM), Govt.of India
Trademark Trends

Source: Cell for IPR Promotion and Management (CIPAM), Govt.of India
Patents
Agreement between an inventor and Government for a product or process to perfect and license the exclusive right.

Patenting Process

- File an provisional patent application
- File an complete specification
- Within 12 months from provisional filing
- Publication after 18 months
- Request for examination (Within 48 months from date of priority)

- Examination under process
- Examination report
- Reply for examination report
- Reply within 6 months (extendable by 3 months)
- Maximum three office action
- Controller Hearing
- Grant of patent
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<td>Chart, Photographs, Work of</td>
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<td>- Screenplay, Drama</td>
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<td><strong>Musical</strong></td>
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<td>- Musical Notations</td>
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<td><strong>Sound Recording</strong></td>
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<td>- Compact Disc</td>
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<td><strong>Cinematograph Films</strong></td>
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<td>- Visual Recording which includes</td>
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<td>sound recording</td>
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COPYRIGHT REGISTRATION PROCESS

FILING OF APPLICATION
ISSUE OF DIARY No
30 days mandatory
Waiting for objections
Objection filed
Registrar decides to accept/reject objections
Based on Hearing
Scrutinization by Examiner
Discrepancy letter issued to applicant
(Reply within 45 days of receipt of letter)
Hearing by Registrar
Registration approved
Issue of Copyright Certificate

http://copyright.gov.in/
Published or Unpublished work

Where to file Patent Application

E-filing of Application
Preparing scholarly communication: Plan of work

- Record your readings (results)
- Keep ready graphs, illustrations, pictures, tables, and other artwork
- Keep file to record summaries of results and any observation however insignificant
- Date the files
- Revise your readings, you may need to repeat an experiment while you still have the materials.
- Write ideas whenever they come to you

Choosing the right journal

Based on scope coverage, Scale, Size, Frequency (number of issues/volumes), Article Length (page or word restrictions), Language, Geographical coverage, Journal Metrics – H-index, SJR, Impact Factors, etc., Altmetrics scores, Article view and downloads, Reference style, Peer Review, Author Instructions, Covering Letter with relevant details.
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Early journals published **descriptive** papers (still used in case reports, geological surveys etc..)

By the second half of the 19\textsuperscript{th} century, **reproducibility of experiments** became a fundamental principle of the philosophy of science.

Later the **methods section** became important

IMRAD organization of a scientific paper started to develop

IMRAD format slowly progressed in the latter half of the 19\textsuperscript{th} century
IMRAD Format

I = Introduction, what question (problem) was studied
M = Methods, how was the problem studied
R = Results, what are the findings
A = and
D = Discussion, what do these findings mean

The most common is the IMRAD
If a number of methods were used to achieve directly related results:
   M + R = Experimental section
The results are so complex that they need to be immediately discussed:
   R + D = Results and Discussion section
Structure of An Article

- A rigid structure
- Format developed over hundreds of years and to be read at several levels
- Format follows title, authors, abstract, keywords, introduction, methods, results, discussion, acknowledgements, references and supplementary material

- Title
- Abstract
- Keywords
- Main text (IMRAD)
  - Introduction
  - Methods
  - Results
  - And
  - Discussions
- Conclusion
- Acknowledgement
- References
- Supporting Materials
**Peer review**

Reviewers determine the validity, significance and originality of the work. Reviewers can suggest improvements to the manuscript and the research.

**Peer review Process**

<table>
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<th>Description</th>
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<td>Single blind (most common)</td>
<td>Reviewer identity hidden from author; reviewer knows identity of authors</td>
</tr>
<tr>
<td>Double blind</td>
<td>Both reviewer and author remain anonymous to each Other</td>
</tr>
<tr>
<td>Open</td>
<td>Reviewer and author are known to each other</td>
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**Authors**

- Only include those who have made an intellectual contribution to the research, who will take public responsibility for the data and conclusions, and who have approved the final version of the manuscript.
- The order in which the names of the authors appear can vary between disciplines.
- The corresponding author may not always be the first author.

**Title**

- Reflect the article’s content clearly and precisely.
- Simple, catchy and specific.
- Abstracting and indexing services depend on the accuracy of the title, Semantics and syntax, specific and meaningful, concise, adequately describe, avoid jargon.
- read by thousands, Indexing and abstracting depends on the accuracy of the title, Never contains abbreviation, contain the keywords.
Keywords

Keywords that reflect the research

The right keywords increase the likelihood of article being found by other researchers

Used in abstracting and indexing services classification to select appropriate reviewers.

Abstract

summarize the problem or study objective, the method, the results, and the conclusions of research.

The title and the abstract should be able to stand on their own

not to include references, figures or tables

Many authors write the abstract last, so that it accurately reflects the content of the article.

Should be accurate and relevant, written clearly and simply, principal objective and scope, brief summary of each of the main sections (IMRAD) written in the past tense, not cite any references
Introduction

- Provide context and background, a history lesson.
- It should state clearly the problem being investigated, the background that puts the problem in context, and the reasons for conducting the research.
- Summarize relevant research to provide context, and state the questions. Explain any findings of others that you are challenging or extending.
- Briefly and logically lead the reader to hypothesis(es), research question(s), and general experimental design or method.
- Why that topic is important, What is to be studied, What already known, What methods and approach, Nature and scope problem, Use the present tense and active voice, cite peer-reviewed specification.

Methods

- If methods are new, need to explain them in detail, Identify the equipment and describe materials used and specify the source if there is variation in quality of materials. Include the frequency of observations, what types of data were recorded, Precise in describing measurements and include strengths and weaknesses of measurement, statistical tests use the past tense, and avoid using the first person.
Results

- present findings objectively, and explain what was found.
- new results contribute to the body of scientific knowledge, so it is important to be clear and set them out in a logical sequence based on the tables and figures for best presentation.
- identify any significant trends clearly for the reader.
- Tables and figures must be numbered separately, and should be in the sequence that you refer to them in the text. Figures should have a brief description (a legend). It is important not to interpret your results - this should be done in the Discussion & Conclusions section.
- Results section is written in the past tense,
- Clearly and simply stated findings in an orderly and logical sequence
Discussion & conclusions

- Link this section back to the introduction by referring to the question(s) or hypothesis(es), and indicate how the results relate to expectations and to the literature cited.
- The discussion should explain how the research has moved the body of scientific knowledge forward.
- Suggest further experiments and indicate whether they are underway, and indicate uses and extensions if appropriate.
- Conclusions should be supported by results.

Acknowledgments

- Should be brief and include the names of individuals who have helped with research, such as contributors, and suppliers who provided materials free of charge.
- Supplementary material: Include raw data tables, audio or video footage, photographs, or complex 3D models.
Points of acceptance

- Fitness for the purpose
- serious scientific facts
- improper interpretation- Avoid
- data-cooked up-No
- relevance /significance of the problem
- Novelty
- Formatting Quality
- Cite peer-reviewed scientific literature, Avoid general reference works
- active voice as much as possible
Thesis Format

Front Matter
- Title page,
- Abstract & Acknowledgments
- Integrity certificate
- Table of contents
- List of figures
- List of tables & acronyms

Body of the thesis
- Introduction
- Review of Literature
- Methodology & Plan of work
- Materials, apparatus, and procedures
- Analysis of data
- Results & Discussion
- Conclusions
- Recommendations

End Matter
- Bibliography
- Appendixes
- Supporting materials
Skills for scholarly communication

- Research Process
- Measuring impact
- Publication Process
- Teaching experience
- Outreach
- Data management
- Copyright and exemptions
- Metadata standards
- Data manipulation

- Open Access Policies
- Text and data mining
- Programming experience
- Communication
- Subject knowledge
- Institutional repository management
- Relationship building
- Advocacy
- Metrics
- Citation styles
The landscape of Scholarly Communication

[Image of a diagram related to scholarly communication with icons for metadata, research data support, tools for authors, impact analysis, preservation of materials, open journal hosting, and dissemination.]
Tools for scholarly communication

https://osc.cam.ac.uk/about-scholarly-communication
Outreach
- Mendeley
- ResearchGate
- Orclid
- Google Scholar
- Academia.edu
- ResearcherID

Assessment
- Mendeley
- ResearchGate
- Socialcite
- Jisc open citations
- Google Scholar
- Publoons
- Histcite
- Biblioshiny

Analysis
- Google Docs
- Myexperiment
- Plotly, Paper Rate
- Figshare
- Illumin8
- Deepdyve
- Clinical pharmacology
- IPY

Publication
- Philpapers
- F1000 Research
- PLOS
- Wiley
- Google Scholar
- Pubmed

Writing
- Mendeley
- Authorea
- Wiley
- LaTex
- Academy4U
- IEEE Author central
- Grammarly

Discovery
- F1000 Prime
- Mendeley
- Academia.edu
- DOAJ
- Research Gate
- EBSCO, World Cat Local
### Aggregators

**Ingentaconnect:**
(http://www.ingentaconnect.com/)
- 10,000 publications from 290+ publishers
- 630 Engineering titles

**ProQuest:** [http://www.proquest.com](http://www.proquest.com)
- 9,000 publishers

**Project MUSE:** [http://muse.jhu.edu/](http://muse.jhu.edu/)
- 240 Publishers in Humanities and social sciences

**JSTOR:** [www.jstor.org](http://www.jstor.org)
- 214 titles from 48 publishers + Ebooks

**Highwire Press:** [http://home.highwire.org/](http://home.highwire.org/)
- 3,000 scholarly journals and thousands of scholarly books

### Publisher platforms

- Science direct
- Springer link
- Wiley
- Emerald
- Sage
- Oxford
- Cambridge
- IEEE Digital Library
- ASME
- ACS
- IAS
- NISCAR
Database of bibliographic records, an organized digital collection of references to published literature which includes journal articles, conference proceedings, reports, patents, books, etc.

**Engineering Village**
- 190 engineering disciplines & 73 countries
- 3,800+ journals from 1,988 publishers
- 117 trade magazines
- 80,000+ conference proceedings
- 83 book series
- Articles in press from 1,261 journals

**INSPEC** (physics, electronics, computing and engineering, Mechanical and production engineering):
- 15 million records
- 5000 scientific and technical journals
- 2500 conference proceedings
- Numerous books, reports, dissertations and scientific videos

**AEROSPACE Database**

**Scifinder** /**Chemical Abstracts**

**Agris**

**Biosis**
kind of bibliographic database, an index of citations between publications, allowing the user to establish which later documents cite which earlier documents. Can generate citation profiles for authors, organizations,
Open Access Scholarly communication

Digital Repositories allow authors to self-archive their research materials and users access collected materials without any financial and legal restrictions.

Open access publications are freely and permanently available online on Internet.
Unrestricted use, distribution and reproduction in any medium is permitted, provided the author/editor is properly attributed.

Channels of OA publishing

Gold Open Access Publishing,
where researcher directly publish in peer-reviewed Open Access Journals (PLOS)

Green Open Access publishing,
where researcher will publish with commercial publishers and deposit their
as per copy right agreement. (http://www.sherpa.ac.uk/romeo)

Author pay open access publishing,
where Authors (Institutions) will pay publishing charges to Publisher and
make their papers open access (IOP, Springer, Elsevier etc.)

Hybrid Journal
Journal where some articles are available in open access, while other content is subscription-based. (E.g. BMJ)

Mandate (Open Access)
A requirement by an institution, funding agency, or government body that published research outcomes be made available in some type of open access (green or gold). Mandates may dictate additional requirements regarding acceptable reuse licensing.
Gold OA: DOAJ
(Directory of Open Access Journals) https://doaj.org

- 14,560 Journals
- 133 Countries
- 4,870,979 Articles
- 635,094 Engineering articles from 1,599 journals
- 1,957,412 science articles from 4,711 journals
- Search & Browse functionalities for retrieval

Green Road: ROAR & DOAR

ROAR: Registry of Open Access Repositories
http://roar.eprints.org/
4176 repositories
Journal papers, Thesis, Conf. Papers, Grey literature

DOAR: Directory of Open Access Repositories
http://www.opendoar.org/
2900+ repositories across the world
Journal papers, Thesis, Conf. Papers, Grey literature
Indian Institutional Repositories

- **IISc**: [http://eprints.iisc.ernet.in/](http://eprints.iisc.ernet.in/)  
  50174+ Publications

- **NAL**: [http://nal-ir.nal.res.in/](http://nal-ir.nal.res.in/)  
  -11,275 Publications

- **IIT Bombay**: [http://dspace.library.iitb.ac.in/jspui.](http://dspace.library.iitb.ac.in/jspui.)  
  -25278 Publications

Electronic Thesis Repositories

- **NDLTD** (5+ million Thesis) [http://search.ndltd.org/](http://search.ndltd.org/)

- **DART-Europe E-theses Portal** [http://www.dart-europe.eu/basic-search.php](http://www.dart-europe.eu/basic-search.php)

- **Shodhganga** (Indian Thesis) [http://shodhganga.inflibnet.ac.in/](http://shodhganga.inflibnet.ac.in/)
CSIR Open Access Content

Single window Open access content of CSIR laboratories

**SCIENCE-CENTRAL**
Single window Open access content of DST laboratories
http://sciencecentral.in/

BASE: https://www.base-search.net/
150 Million documents
7,000 documents 60% is open access content

Grey Literature Servers

“Grey literature are materials produced by organizations outside of the traditional (commercial or academic) publishing and distribution channels”

- HAL Repositories
  1.7 Million records (https://hal.archives-ouvertes.fr/)

- Open GreyNet
  (http://www.greynet.org/opengreyrepository.html)

Science Open.com
https://www.scienceopen.com/
30 Million Articles, 25 K Journals, 3200 publishers
Research Tools to Report Research

- Automatic Alerts
- Reference Management
- Journal Selection
- Research Language
- Author Name Ambiguity
- Copyright and its infringement
- Infographics
Premier database of profiles of scientists / researchers / faculty

Provide information about expert to peers, prospective collaborators, funding agencies policy makers and research scholar in the country

Discover prospective collaborators for on-going research projects

Establish communication directly with the experts who possess the expertise needed by users

To create information exchanges and networking opportunities among Scientists / Faculty

List all publications of registered members
Free Journal Selecting Tool: Journal Guide

https://www.journalguide.com/

- 46 k Journals
- Journal Metrics
- SCOPE of the journal
- Similar articles from last 10 years
- Check similar articles for 10 years
- Match manuscript Title/Abstract
People Identification

- International Standard Naming Identifier (ISNI)
- Proprietary Author Identifier
  - Researcher ID
  - Scopus ID
  - RePEc (Research Paper in Economics)
  - Google Scholar ID
  - Microsoft Academic ID
  - Semantic Scholar
  - Loop (Frontiers)

ORCID - Open Researcher and Contributor ID
International Standard Name Identifier (ISO 27729)

ISNI is the ISO certified global standard number for identifying the millions of contributors to creative works and those active in their distribution, including researchers, inventors, writers, artists, visual creators, performers, producers, publishers, aggregators, and more. It is part of a family of international standard identifiers that includes identifiers of media, resources, products and more.

Key Statistics

- ISNI holds public records of over 9.12 million identities, including:
- 8.55 million individuals (of which 2.58 million are researchers)
- 565,282 organisations
- The ISNI database is a cross-domain

News

[ISNIs now in ETHOS - 2015-08-03]
[Putting the brakes on confusion]
[When will Socrates be picking up his photocopying royalties?]
[Member Story: La Trobe]
Examples of Scholarly communication forms

E-RESOURCES: FULL TEXT DATABASES

American Institute of Physics - http://journals.aip.org/
Annual Reviews - http://arjournals.annualreviews.org/
Cambridge University Press - http://journals.cambridge.org/
Emerald - http://www.emeraldinsight.com
Economic & Political Weekly (EPW) - http://www.epw.in
HeinOnline - http://home.heinonline.org/
Institute of Physics - http://www.iop.org/EJ/
E-RESOURCES: FULL TEXT DATABASES

J-STOR - http://www.jstor.org/
Manupatra - http://www.manupatra.com/
Nature - http://www.nature.com/nature/
Project Euclid - http://projecteuclid.org/
Project Muse - http://muse.jhu.edu/
Royal Society of Chemistry - http://www.rsc.org/Publishing/Journals/
SIAM - http://epubs.siam.org/
Springer Link - http://www.springerlink.com/
Taylor and Francis - http://www.informaworld.com/
Westlaw India - http://www.westlawindia.com
Welcome to e-ShodhSindhu: Consortium for Higher Education Electronic Resources
Provides access to e-resources to Universities, Colleges and Centrally Funded Technical Institutions in India

An Initiative by MHRD, Govt of India

Being Executed by INFLIBNET Centre

Read More  Online e-Resources Requisition System
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American Institute of Physics
Applied Electronics (Search Term)
AMERICAN CHEMICAL SOCIETY
ScienceDirect

Discover more with ScienceDirect

Receive personalized recommendations based on your recent signed-in activity

Create publication and search alerts

Register for personalized features
Emerald
Nature
BIBLIOGRAPHIC DATABASES

SciFinder Scholar
http://www.cas.org/SCIFINDER/SCHOLAR/index.html


Royal Society of Chemistry (6 Databases)
http://www.rsc.org/Publishing/CurrentAwareness/index.asp

ISID - http://isid.org.in/

JCCC http://jccc-ugcinfonet.in or www.jccc-ugcinfonet.in

Biological Abstracts

Dissertation Abstracts

Indian science Abstracts

Indian citation Index

Web of Science http://isiknowledge.com/
SciFINDER
Mathscinet
Bharathidasan University

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References

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Acknowledgements

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