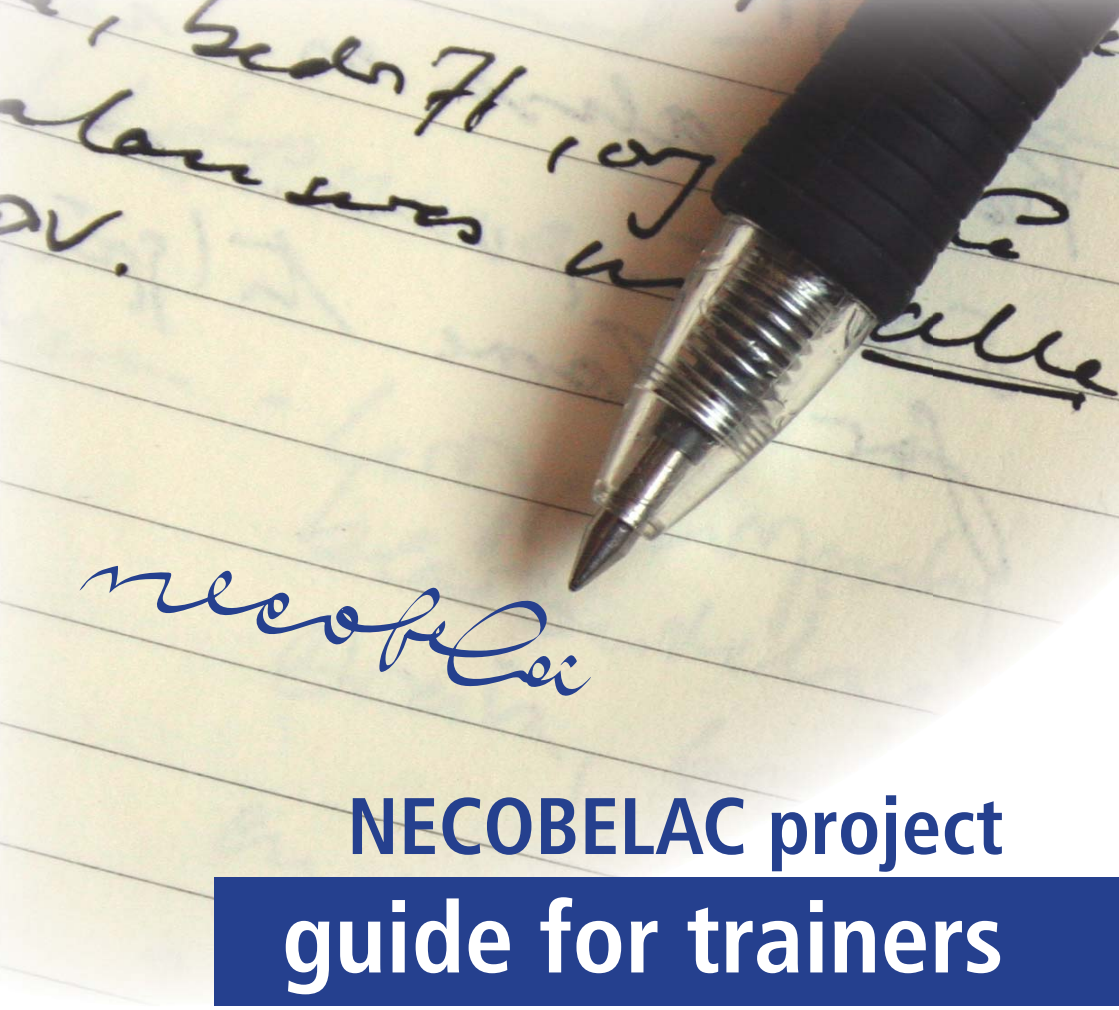

# NECOBELAC project

# guide for trainers


ISTITUTO SUPERIORE DI SANITÀ
The University of Nottingham
UNIVERSIDAD NACIONAL DE COLOMBIA SEDE BOGOTÁ
BIREME • PAHO • WHO
Universidade do Minho
CSIC
SEVENTH FRAMEWORK PROGRAMME
SCIENCE IN SOCIETY
EUROPEAN COMMISSION

This booklet is a partial reproduction of the NECOBELAC topics
produced by the NECOBELAC working team including all project partners and their collaborators.
Texts were revised by Paola De Castro (ISS) and Reme Melero (CSIC).

Editing and graphics by Sandra Salinetti (ISS).

# introduction

NECOBELAC is a project funded by the European Commission within the 7th Framework Programme and led by the Istituto Superiore di Sanità (ISS), the main research body for public health in Italy.

The project is committed to stimulating information transfer in the field of public health on a global scale by creating a collaborative network spanning Europe, Latin America and the Caribbean (LAC) countries, to increase free access to high quality scientific information.

The ISS is supported by the project partners: University of Nottingham (UK), Consejo Superior de Investigaciones Científicas (Spain), Centro Latinoamericano y del Caribe de Información en Ciencias de la Salud - BIREME/OPS/OMS (Brazil), Instituto de Salud Pública (Colombia) and the Universidade do Minho (Portugal).

NECOBELAC contributes to distribute knowledge about best practices in production, dissemination, retrieval and use of open access public health information across Europe and LAC countries. The involvement of different health related institutions in these regions will also strengthen scientific collaborations and improve the exchange of research data and information.

# project strategy

The project strategy is based on the creation of a network of selected and highly qualified European and LAC institutions which share the project aims and collaborate to provide relevant training programmes in scientific publication and open access.

The project partners deliver a series of training activities addressed to future trainers (courses type T1) who will then replicate NECOBELAC training modules at local level, with the appropriate adjustments (courses type T2) (Figure 1).

Training activities are developed within the three-year project term, but all those who take part in the NECOBELAC training T1 are committed to replicate the course thus guaranteeing a larger and longer impact and sustainability of the project.

The attendants of the NECOBELAC T1 training courses are professionals already involved in scientific publication and open access who can thus provide useful feedback to address cultural differences and discuss the best approach to local training to overcome existing barriers to scientific communication.

Training is organized in different geographical areas, both in LAC countries and Europe and is developed in the four project languages: English, Spanish, Portuguese and Italian.

Local experts can be invited as a support to training activities both in T1 and T2 courses.

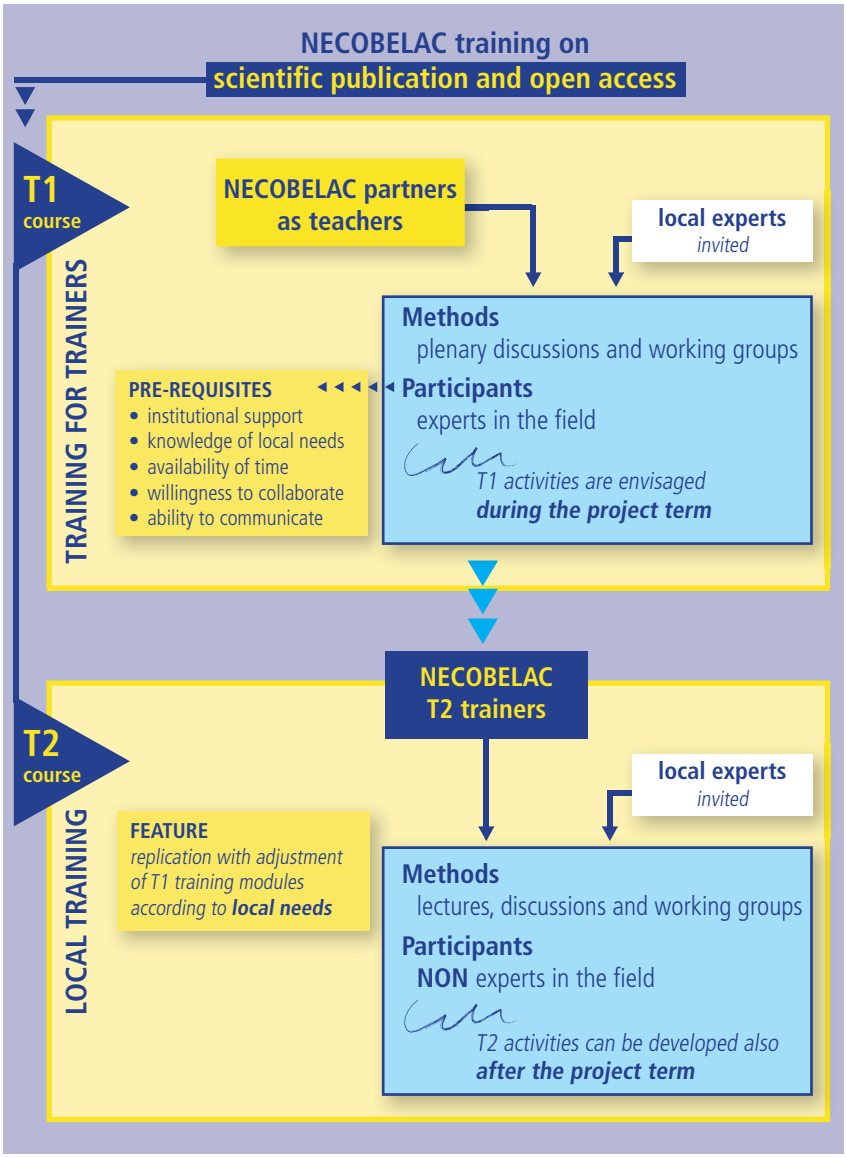


Figure 1. NECOBELAC training strategy

# topic maps: a support for training

The topic maps based on a semantic web technology have been designed and developed as a support to the NECOBELAC training courses.

Each course has to be modular, extensible, flexible, portable and able to be re-purposed. Its content has to be independent from presentation and accessible through different contexts.

Topic maps represent information using "topics" (any concept, from people, countries, and organisations to software modules, individual files, events, etc.), "associations" (the relationships among topics), and "occurrences" (information resources relevant to a particular topic). They have a triple subject-predicate-object structure (Figure 2).

Topic maps have been created using the Ontopia technology as the framework to represent and offer a graphical visualisation of the structure of the training courses.

This technology permits the connection of relationships among different factors, actors, and initiatives. Ontopia also has a navigator framework – a JSP tag library and Java API – which enables the development of web-based interfaces associated with topic maps.

A web interface has been created based on the NECOBELAC topic maps. Part of its contents is available and searchable through the web, although it is still under construction from NECOBELAC site under the section NECOBELAC training activities.

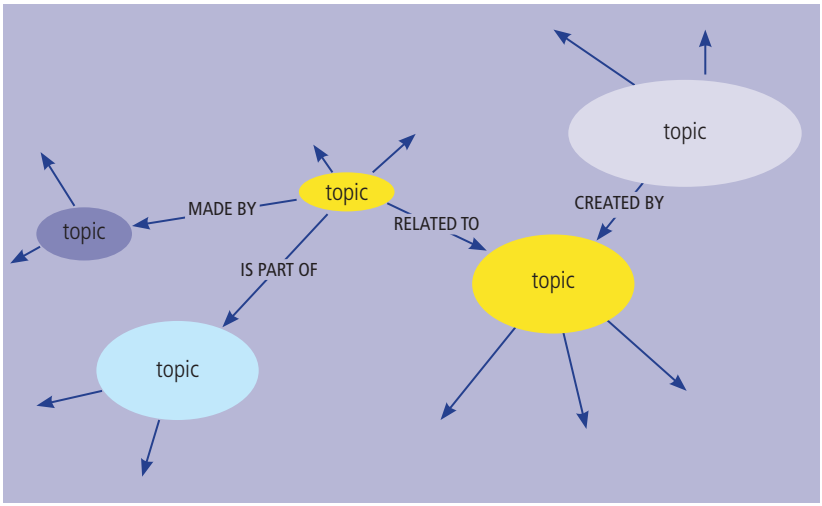


Figure 2. Graphical representation of a topic map

A searchable semantic database has also been developed, so that users will be able to send queries to this knowledge structure.

Associations and role associations among topics, instances and their occurrences have been conceived taking into account most of the issues involved in scientific publication and open access.

In the NECOBELAC topic maps, any topic represents a training module or sub-module corresponding to the contents of both courses: scientific publication and open access in public health. Any module/concept has a similar structure: title, abstract, scheme, extended text, some questions or points for discussion, bibliography, examples and a list of support materials.

# contents of the training courses

The content list of the NECOBELAC courses is divided into two sections:

1) scientific publication;
2) open access.

Each section is associated to different modules.

Only the abstracts of the main modules of each section are reproduced here; the most up-dated description of all modules and associated online resources are available at the project website: http://www.necobelac.eu/en/training.php.

Participants in T1 activities will organize local training T2 on the basis of the NECOBELAC contents for training courses which must be properly selected and adjusted according to: local needs, duration of the course, facilities, number of participants, number of trainers, etc.

A list of questions as suggested points for discussion is also included for each section.

A selection of online resources taken from the online topic maps is provided at the end of this booklet.

## Structure of NECOBELAC training modules

**1. Introduction to scientific publication**
- Types of publications

**2. Scientific journals**
- Starting a new journal
  - Online technology management systems
- Improving an existing journal
- Managing a journal
  - Editors
  - Committees, editorial boards
  - Publishers
  - Editorial staff, marketing policy, advertisement
    - Support to authors
- Economic models
- Quality of journals
- Dissemination and access

**3. Scientific articles**
- Writing an article
- Guidelines and standards
- Ethics
- Rights (copyright issues)

**4. Peer review and quality indicators**
- Styles of peer review
- Ethics
- Roles in peer review
  - Reviewers
  - Editors
  - Committees, editorial boards
- Quality of journals
- Metrics

# abstracts of main modules

## 1. Introduction to scientific publication

The publication process involves many activities stemming from information selection, the choice of the appropriate channel to distribute such information, manuscript production and handling, submission for publication, peer evaluation, and all those editorial activities which eventually lead to the document publication, distribution, use and impact evaluation.

The publication process is complex and requires the knowledge of rules, standards and best practices in order to be carried out effectively.

There are different types of publications (books, journals, grey literature, etc.) and many different channels to distribute them. The publication process involves the activity of many actors whose roles may overlap according to the organisation of the entire cycle. If the organisation is large and the budget available is sufficient, each role is performed by an appropriate specialist; if the organisation is small and budget available is limited, the same persons may play different roles.

The main actors of the editorial chain are: authors (as information producers), editors (as information "tailors"), publishers (as information managers), readers (as information users), librarians and information specialists (as information providers). They are supported by reviewers, copy editors, translators, technical writers, graphic assistants, photographers, printers, web masters, etc. who intervene at different stages in the publication process. Furthermore, the same persons may also have different roles in different contexts, for example, a reader may also be a writer, or a reviewer of an article and this adds new complexities the scientific publication game.

The new opportunities offered by information and communication technologies represent a real challenge in the publication process and create new balances in favour of the most peripheral areas in the scientific information arena.

## 2. Scientific journals

Communication received through scientific journals has four main purposes:

1. Recording and disseminating the knowledge obtained from research.
2. Evaluating scholarly works.
3. Identifying the scope and possible uses or applications of knowledge.
4. Preserving knowledge.

These roles have been constructed and perfected by scientific journals over the last 300 years until becoming the only means of communication which can (through society's recognition and acceptance) publish, evaluate and validate what is published. Scientific journals thus have a set of criteria and methods guaranteeing quality and truth or well reasoned doubt regarding what they accept and publish. Authors wishing to publish the results of their investigations must therefore, firstly, know and understand the requirements and criteria established by specialised scientific journals for receiving, evaluating, accepting and publishing scientific material, such author guidelines usually having been most clearly set out for prospective authors.

Scientific journals use different genera or types of publications to comply with their mission: editorials, standard articles and their modalities, essays or articles for reflection, reviews and summaries. Dissemination and access to scientific health information are

mediated by an international well established infrastructure, including publishing, indexing and evaluation of scientific journals. Journals from developing countries traditionally face several barriers to integrate these infrastructures, particularly regarding quality and perception of quality. Quality is indeed a central issue for scientific communication, which challenges scientific editors in order to better position their journals in the international information flow.

## 3. Scientific articles

The journal article is still nowadays the most well-known and qualified means of scholarly communication to spread knowledge and new results among the scientific community and to promote progress. Since communication is a crucial task of each scientist, the correct writing of a paper is of utmost importance, but not so easy: a scientific paper must be well organised to meet the needs of valid publication. To help potential authors in this work, since the second half of the Sixties, a scheme has been widely used among scientists to write their articles and this structure was officially adopted by the American National Standards Institute in 1979 (ANSI Z39.16-1979) as the IMRAD (Introduction, Methods, Results And Discussion) format. In the same year the International Committee of Medical Journal Editors issued the "Uniform Requirements for Manuscripts Submitted to Biomedical Journals". This document represents – among guidelines, standards and best practices of good writing and communication – the most widespread and valuable tool for authors to easily write clear reports of their studies. The "Uniform Requirements" are particularly interesting as, even though they analyze the multifold facets related to the whole editorial process, both from

the editors' and the authors' points of view, they illustrate the technical aspects on preparing and submitting manuscripts and, in this context, they also recommend the standard structure of IMRAD.

In the second half of the Nineties, a debate was arisen on the appropriateness of this format for all kinds of scientific communication: the formal composition of the traditional scientific paper ia still a good one for original articles but can obviously be felt as a restriction for reviews, case reports, editorials, etc. Yet, the strict IMRAD scheme is not be considered as an arbitrary publication format as it is a direct reflection of the process of scientific discovery and it has the advantage of helping the author to organise a research report in an unambiguous way following simple steps.

## 4. Peer review and quality indicators

Journals play an important role in the evaluation and certification of scholarly outputs, and their position within the landscape of scientific publications will depend on good practices and good management. Evaluation through the peer review system, for which a substitute has not yet been found, is the way to control the quality, originality and scientific rigor of papers. It can be carried out in different ways: blind, double-blind or online open peer review. A key objective of peer review is to filter and detect possible cases of fraud such as falsifying data, plagiarism or failure to declare potential conflicts of interest, although it is not an infallible system and should be evaluated periodically to detect possible biases.

Quality and prestige do not always walk in parallel, the quality of content and editorial management system may be high but

to gain recognition and prestige it is necessary that the journal should persist in its goals for a certain period of time. Editors and editorial boards are directly involved in certification of contents based on their quality; to achieve a quality mark is a guarantee to ensure the sustainability of the magazine. In this module the formal aspects to improve the quality of journals will be considered as well as certain strategies to attract articles from recognized authors in their fields. Visibility in journal management is also a relevant internal quality factor, for example, declaring criteria for acceptance of papers or measures to preserve the scientific integrity of the work.

## Structure of NECOBELAC training modules

**1. Introduction to open access**
- Meaning/definition
- Origins and timeline
- OA initiatives around the world
- Advocacy
  - The effect of open access on citations

**2. OA Repositories**
- Definition and types
  - Subject repositories
  - Institutional repositories
  - Data repositories
- Repository technologies and standards
- Repository software
- Repository development and management
- Service providers (repositories)
- Journals-Repositories coexistence
- Self-archiving
  - Copyright issues

**3. OA Journals**
- OA Journals models
- Online Management systems
- Economic models to support OA journals
- Service providers (journals)
- Copyright issues

**4. OA Policies**
- Introduction
- Models
- How to implement an OA policy
- Directories of OA policies
- Examples in public health and related disciplines
- The effect of OA policies on authors' behaviour

# abstracts of main modules

## 1. Introduction to open access

In February 2002, the Budapest Open Access Initiative – also known as Budapest Declaration or BOAI – was the first declaration to define Open Access (OA) literature as digital, online, free, and exempt from most copyright and licensing restrictions. Alongside BOAI, the Bethesda Statement and the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities, both in 2003, marked the beginning of what is now known as the OA movement. According to the Budapest Declaration, there are two complementary ways of achieving OA to scientific outputs: self-archiving in OA repositories (also known as the green route) and publishing in OA journals (also known as the gold route). OA repositories are digital archives which collect, preserve and disseminate scholarly outputs of either a specific area (disciplinary repositories) or of a particular institution (institutional repositories). The term "open access" is now widely used in at least two senses. For someone, "OA" literature is digital, online, and free of charge. It removes price barriers but not permission barriers. For others, "OA" literature is digital, online, free of charge, and free of unnecessary copyright and licensing restrictions. It removes both price barriers and permission barriers. It allows reuse rights which exceed fair use. Most of our success stories deliver OA in the first sense, while the major public statements from Budapest, Bethesda, and Berlin (together, the BBB definition of OA) describe OA in the second sense. To remove ambiguity, Peter Suber and Steven Harnad have proposed the use of the term "gratis OA" for the removal of price barriers alone and "libre OA" for the removal of price and at least some permission barriers. There are various

misunderstandings about OA. It is not self-publishing, nor a way to bypass peer review and publication, nor is it a second-class, cut-price publishing route. It is simply a means to make research results freely available online to the whole research community and to other potential users of the research literature.

## 2. OA Repositories

ArXiv, established in 1991 for the physics community, is generally considered to be the first OA repository. Despite the establishment of other disciplinary repositories during the Nineties, the number of repositories was still very low at the end of the decade. The "boom" in the creation of repositories occurred in the new millennium, building on top of the OAIPMH technical foundation, and as a consequence of increased visibility of OA and OA awareness in the research community following the first OA initiatives and Declarations (Budapest, Bethesda and Berlin).

A digital repository is a mechanism for managing and storing digital content. Repositories can be subject or institutional in their focus. Putting content into an institutional repository enables staff and institutions to manage and preserve it, and therefore derive maximum value from it. A repository can support research, learning, and administrative processes. Repositories use open standards to ensure that their content is accessible, that is it can be searched and retrieved for later use. The use of these agreed international standards allows mechanisms to be set up which import, export, identify, store and retrieve the digital content within the repository (definition by Repositories Support Project, http://www.rsp.ac.uk/). There are two main types of OA repositories: "Subject/Disciplinary repositories" (established to collect material in particular disciplines or subjects) and "Institutional repositories"

(established by individual research institutions to collect, preserve and disseminate the intellectual output of the institution). A third type of repositories could be considered: aggregators or portals that collect their contents from institutional and subject repositories. These aggregations can be done at a geographical level, subject domain, or document type.

Currently there are more than 1600 repositories registered in the most important repository directories: ROAR-Registry of OA Repositories and OpenDOAR-Directory of OA Repositories. The geographical distribution of repositories is close to the world scientific output distribution, with almost 2/3 located in Europe and North America.

## 3. OA Journals

The combination of type of access, publication license and copyright agreement of scientific journals have given rise to a range of journals from those to which access is restricted to subscribers and copyright is transferred exclusively to the publisher (not meeting any OA criteria), to those that are free for users and authors and copyright belongs to the author (meet all OA criteria). Focusing on the journals that meet all or part of the Berlin Declaration's definition of OA, journals can be classified into the following groups:

1. Existing journals, which after an embargo of 6 or 12 months, provide free online access to their articles (see examples in Highwire Press or in PubMedCentral).
2. Journals that immediately after their publication, are free/gratis through Internet (financial barriers are removed).
3. OA journals, in which authors retain all or part of the copyright and pay a fee for the publication of their articles. BioMed

Central journals or journals published by the Public Library of Science (PLOS) are examples of these.

4. Journals that follow a hybrid model where two forms of online publication coexist, a classical form in which access is restricted to subscribers, and another which implies paying a publishing fee to make the article freely available on the Internet. The cost per item varies depending on the publisher, but in the case of commercial publishers, it is around $3000 (examples: Sponsored Article from Elsevier, Oxford Open from Oxford University Press or Open Choice from Springer).
5. OA journals, gratis for readers and without any fee to publish, in which copyright belongs to the author or the publication licenses allow self-archiving. Examples of this type are included in the Directory of Open Access Journals, DOAJ.

## 4. OA Policies

OA policies can vary from broad statements of support for, and promotion of, OA, to more prescriptive research-funder "mandates", as well as particular and specific institutional policies that declare support for OA as a principle and encourage academics to publish in OA, and which can also set out criteria for the overall goals and day-to-day operation of OA Institutional Repositories (IRs). The various OA declarations and manifestos issued worldwide fall into the first category. Research-funder mandates add weight to an institutional message of support for OA, because they stimulate compliance with an OA strategy (like depositing a post-print in an OA repository) as a condition when the researcher signs the research funding contract. Institutional mandates, which effectively equate a given institution's explicit OA policy, encourage their academics to publish research either in

OA journals or deposit refereed final drafts in the IR or a subject-based repository. The executive arm of an institutional OA policy could be the IR, and those responsible for the IR will produce the IR policy; such policy will cover both the overall mission and objective of the IR and will detail the more specific criteria to ensure that decision making procedures – regarding the more routine operational aspects of the IR – are in line with the overall IR policy. At all levels, policy implementation needs to consider and make explicit the benefits and impacts of the OA policy on the various stakeholders involved.

There are three directories where existing policies are registered:

1. JULIET-SHERPA: http://www.sherpa.ac.uk/juliet;
2. MELIBEA: http://www.accesoabierto.net/politicas;
3. RoarMap: http://www.eprints.org/openaccess/policysignup.

Mandate statements prevail over recommendations but control mechanisms for monitoring do not exist yet or have not yet been clearly determined.

## *section.* **Scientific publication**

- What is the role of scientific journals?
- Where does the responsibility of a journal article lie?
- How can editors guarantee quality in publication?
- Where can you find instructions to authors?
- What is the purpose of writing a paper?
- What is the IMRAD format?
- What are the advantages of following IMRAD format?
- Which writing rules should be followed?
- Which are the main steps for preparing and submitting manuscripts to scientific journals?
- How to choose among existing guidelines according to their specific issues?
- Is there any suggested way for conforming to journals' Instructions to Authors?
- What can be defined as unethical behaviour in scientific publishing? List all possible cases of misconduct.
- Which are the main documents that help editors dealing with misconduct behaviour in scientific publishing?
- Are there specific associations aiming at enhancing responsible and effective communication in science?
- Which is the recommended reference style in biomedical journals?
- Which criteria guide the decision to include a table or a graph to report data?
- Who can be considered the author of a scientific article?
- Can you submit the same manuscript to two different journals at the same time?
- Can you submit an article which has been rejected by a journal to a different journal?
- Which are the main reasons for conflict of interest and who is involved?
- What do you do if you suspect plagiarism?
- Can you define a guest, ghost or gift author?

## *section.* **Open access**

- How would you start setting up an OA advocacy strategy in your institution? What components do you think would be essential to such a strategy?
- What do you believe to be the potential incentives and disincentives for authors to disseminate their work in OA channels?
- Do you believe that OA mandates are a necessary OA policy instrument?
- How would you translate an OA policy that is basically a supportive statement for OA into an effective OA policy to be complied with?
- What do you think would be the most appropriate term(s) in your language, and national and institutional contexts, to best convey the concept of "advocacy" when using it in the domain of Open Access and OA respositories?
- What are the reasons that have threatened the traditional subscription model of scientific journals?
- What kind of economic model would you suggest to a new journal created by a non profit organization?
- How would you go about encouraging authors to self-archive in OA repositories?
- What, in your opinion, are the different facets that an institutional repository (IR) OA policy should incorporate to ensure the IR's use?
- Who do you identify as the key actors for OA advocacy activities in your institution?
- What is the qualitative differential between data provision and service provision?
- What are some examples of services provided to end-users searching across repositories?
- What are some important services that repositories can provide to their host institution that could constitute valid arguments in favour of implementing an institutional repository?
- Why do scientists value the Impact Factor (IF) of their published work?
- How has Open Access been proven to affect the IF of research?
- What advantages do OA forms of research dissemination have over traditional forms of research publication when considering the citation impact?

# recommended online resources

## *section.* **Scientific publication**

American Association for the History of Medicine (AAHM)
http://www.histmed.org/

American Medical Writers Association (AMWA)
http://www.amwa.org

Association for Medical Education in Europe (AMEE)
http://www.amee.org

Association of Canadian Editors (EAC)
http://www.editors.ca/

Association of Earth Science Editors (AESE)
http://www.aese.org/

Association of Learned and Professional Society Publishers (ALPSP)
http://www.alpsp.org.uk

Australian Societies of Editors
http://www.editorscanberra.org/

AuthorAID
http://www.authoraid.info/

Board of Editors in the Life Sciences (BELS)
http://www.bels.org/

British Standards Institution (BSI)
http://www.bsigroup.com/

Committee On Publication Ethics (COPE)
http://publicationethics.org/

Copy Editor
http://www.copyediting.com/

Council for the Advancement of Scientific Writing (CASW)
http://casw.org/

Council of Editors of Learned Journals (CELJ)
http://www.celj.org/index.php

Council of Science Editors (CSE) (formerly Council of Biology Editors)
http://www.councilscienceeditors.org/

Digital Curation Centre
http://www.dcc.ac.uk/

Eastern Mediterranean Association of Medical Editors (EMAME)
http://www.emro.who.int/EMAME/index.htm

Editorial Eye
http://www.eeicom.com/

EQUATOR Network
http://www.equator-network.org/

European Association for Research on Learning and Instruction (EARLI)
http://www.earli.org/

European Association of Health Information and Libraries (EAHIL)
http://www.eahil.net/

European Association of Science Editors (EASE)
http://www.ease.org.uk/

European Medical Writers Association (EMWA)
http://www.emwa.org/

ICMJE - Uniform Requirements for Manuscripts Submitted to Biomedical Journals
http://www.icmje.org/urm_main.html

International Association of Translation and Intercultural Studies (IATIS)
http://www.iatis.org/

International Committee of Medical Journal Editors (ICMJE)
http://www.icmje.org/

International Council for Scientific and Technical Information (ICSTI)
http://www.icsti.org/

International Council for Technical Communication (INTECOM)
http://www.intecom.org/

International Federation of Science Editors (ICSU)
http://www.icsu.org/

International Network for the Availability of Scientific Publications (INASP)
http://www.inasp.info/

International Society for Medical Publication Professionals (ISMPP)
http://www.ismpp.org/

Journal of Electronic Publishing (JEP)
http://www.journalofelectronicpublishing.org/

Latindex
http://www.latindex.unam.mx/

Learning and Teaching Subject Network for Education
http://escalate.ac.uk/

Mediterranean Editors and Translators (MET)
http://www.metmeetings.org/

Publishers' Association (PA)
http://www.publishers.org.uk/

PubMed Central
http://www.ncbi.nlm.nih.gov/pubmed

Red de Revistas Científicas de América Latina y el Caribe, España y Portugal (Redalyc)
http://redalyc.uaemex.mx/

Scientific Electronic Library Online (SciELO)
http://www.scielo.org

World Association of Medical Editors (WAME)
http://www.wame.org/

## *section.* **Open access**

Acceso Abierto a la Ciencia
http://www.accesoabierto.net

Budapest Open Access Initiative (BOAI)
http://www.soros.org/openaccess

Charles Bailey Bibliography
http://www.digital-scholarship.org/

Creative Commons
http://creativecommons.org/

Digital Repository Infrastructure Vision for European Research (DRIVER)
http://www.driver-repository.eu/

eIFL
http://www.eifl.net/cps/sections/home

Enabling Open Scholarship (EOS)
http://www.openscholarship.org/jcms/j_6/accueil

Eprints
http://www.eprints.org/

JISC-Open Access
http://www.jisc.ac.uk/openaccess

Open Access Directory (OAD)
http://oad.simmons.edu/oadwiki/Main_Page

Open Access Scholarly Information Sourcebook (OASIS)
http://www.openoasis.org

Open Access Scholarly Publishers Association (OASPA)
http://www.oaspa.org/

Open Archives Initiative (OAI)
http://www.openarchives.org/

Openaccess.net (Germany)
http://www.open-access.net/de_en/homepage/

Openaccess.se (Sweden)
http://www.kb.se/OpenAccess/Hjalptexter/English/

OpenAIRE
http://www.openaire.eu/

Public Knowledge Project (PKP)
http://pkp.sfu.ca/

Scholarly Publishing and Academic Resources Coalition (SPARC)
http://www.arl.org/sparc/

SHERPA
http://www.sherpa.ac.uk/

SURF Foundation
http://www.surffoundation.nl/en/Pages/default.aspx

The Directory of Open Access Repositories (OpenDOAR)
http://www.opendoar.org/

The Open Citation Project (Opcit)
http://opcit.eprints.org/

www.necobelac.eu

info@necobelac.eu

*Printed by Publishing Unit, Istituto Superiore di Sanità* • August *2010*