

On Promoting Open Access at LBNL

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Title slide.

SLIDE 2

In this presentation, we will discuss the promotion of open access initiatives at the Lawrence Berkeley National Laboratory.

First, we'll discuss some key principles of open access – these principles may gauge one's awareness of open access issues.

Afterwards, we will explore models of conducting open access activities.

Finally, we discuss questions about open access promotion at LBNL:

- (1) is OA important to LBNL?
- (2) if so, what is the promotional message?, and
- (3) what open access activities could be conducted here?

By discussing these issues, this meeting will hopefully kick off a library-based plan for supporting open access at LBNL.

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Let's discuss some key principles of open access. These principles may gauge one's awareness of open access issues.

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Open access responds to some challenges with the traditional means of sharing research work. Examining the research lifecycle can identify these challenges.

First, researchers have an idea or a research question, and they want to study it and share the results. So scientists design a study and acquire funding in order to conduct the research. After the study is complete and the results are analyzed, researchers write a report, a presentation, or a journal article and submit it for publication to share this new knowledge with the world. This publication is then publicized as it is read by others and gains exposure. This publicity may influence the research life cycle for other scientists and scholars.

One challenge is that the subscription fees for journals are increasing. Because journals are expensive, it can be difficult for poorer institutions or individuals to subscribe and read these journal articles. Therefore the impact of your study may not reach its full potential. This is a problem with expense and access.

Also, traditional journals transferred the copyright of your works to the publisher. So after publishing the article, the publisher had control of how your research article is shared. Sometimes you are prohibited from photocopying your own article to give away, or you could not post an electronic copy of the article on your web page. This is a problem of ownership and of control of your intellectual work.

Finally, because the exposure of your research be limited in subscription-based journals, research funding agencies, like the government and philanthropic organizations, may question whether public and humanitarian money is benefitting the general public as best it can. This is a problem about the return on investment.

These problems may be addressed by open access publishing.

(Treloar and Groenewegen, 2007)

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Here is a graph the shows the increasing cost of journal subscription fees.

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Open access is one solution to these challenges. Open access (OA) is the publishing of scholarly works that is:

- Digital and online
- Free of charge to the reader
- Free of most traditional copyright and licensing restrictions – so readers and creators can re-distribute, remix, and reuse the content (with acknowledgement to the creator)

(Suber, 2007) <http://www.earlham.edu/~peters/fos/overview.htm>

Because OA works are free to the reader and disseminated online, there is a greater audience that can access and publicize your work. This addresses challenges with public access and return on public research investment. Since traditional copyright is not in place, owners may retain ownership and control of their work and authorize others to use the work freely. Because open access publishing is an alternative to traditional publishing, it may also provide competition to address the rising expenses of journal subscriptions.

In these ways, OA can improve the impact of your scientific work.

While these are promising solutions, it is important to note that open access is not free to produce. It is free for the reader, but the author, the author's organization, or the funding agency needs to pay for the article to be published. This model may shift the financial burden from the consumer/reader of these works to the producers.

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There are different reasons for OA participation that can accommodate a variety of motivations. They vary from self-interest through to altruistic goals.

SELF-INTEREST

- Career-building through greater research impact and copyright protection
- Participate and gain “your place at the table” in the emerging open access domain
- Sometimes there is a legal obligation . For instance, the NIH Public Access Policy requires that if you received NIH funds for your research, you must submit your final peer-reviewed journal manuscripts to the digital archive PubMed Central upon acceptance for publication. The article must be accessible to the public within 12 months after publication.
<http://publicaccess.nih.gov/>
- Advancing science and technology through improved access and knowledge transfer
- Ethical reasons - providing research knowledge for easier and greater access.

ALTRUISM

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People recognize the potential advantages of open access publishing, but some authors are also concerned about problems associated with the benefits. These concerns address issues of value, permanence, financial sustainability, and ethics.

PRO

Improved impact through greater visibility and higher citation rates

Digital documents

Free access for readers

Promotes collaboration and information exchange

CONCERNS

Publishing quality

Preservation and authenticity of digital documents

Sustainability of the author-pays model

Conflicts of interest with author payments for publication

Hopefully, these concerns may be sufficiently addressed in the future.

(Information Platform Open Access, 2009)

[http://open-](http://open-access.net/de_en/print/general_information/pros_and_cons_of_open_access/)

[access.net/de_en/print/general_information/pros_and_cons_of_open_access/](http://open-access.net/de_en/print/general_information/pros_and_cons_of_open_access/)

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There are many options for participating in open access initiatives. They fall along a spectrum varying between marginal effort through to more intensive participation. Additionally, these initiatives may involve the individual or require the collaboration of organizations, governments, and nations. With this variety of options for open access participation, researchers may choose the time they wish to invest and the impact of their actions. Being aware of these options may encourage their implementation.

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As an alternative to the traditional copyright – where sometimes you give away your ownership of the work to a third party - you can license your work under open access conditions that you choose. You then attach this license to your work.

You can use these licenses for materials in a variety of formats including personal web sites, ebooks, listservs, discussion forums, blogs, wikis, RSS feeds, and P2P file-sharing networks.

Usually open access licenses consents to unrestricted reading, downloading, copying, sharing, storing, printing, searching, linking, and crawling of full text - and you can control commercial re-use, plagiarism, and misrepresentation.

Creative Commons is a nonprofit corporation that provide templates for licenses and other legal tools for open access publications.

<http://creativecommons.org/choose/>

UC Berkeley Library has instructions for requesting an amendment to modify publisher copyright transfer agreements

http://www.lib.berkeley.edu/scholarlycommunication/manage_your_rights.html

Other licenses are available:

http://pzwart.wdka.hro.nl/mdr/research/liliang/open_content_guide

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Publishing in an open access journal lets the general public read your article for free wherever they online access. These journals conduct peer review and aim for the same rigor as traditional publishers.

To pay for the publishing, open access journals may require a processing fee from authors or a sponsoring agency. In other cases, institutions may pay for a membership so that institutional members may publish in the open access journal at no cost to the author.

Prominent examples include medical open access journals in BioMed Central and the affiliated specialty journals in chemistry and physics and mathematics.

<http://www.chemistrycentral.com/>, <http://www.physmathcentral.com/>

Additionally, there is the Public Library of Science, PLoS. <http://www.plos.org/>

To find journals in your area of research, you can search the Directory of Open Access Journals

<http://www.doaj.org/>

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In some situations, there are no open access publishing fees charged to the author directly. At the University of California, authors who publish in a Springer Publishing Company journal will have their article available for open access – this is published through the Springer Open Choice program. There are no publication charges because these costs have been factored into the overall license negotiated by the California Digital Library at UC. UC employees and students are eligible, including the Lawrence Berkeley National Laboratory.

<http://blogs.lib.berkeley.edu/whats-new.php/2009/01/31/springer-open-access-pilot-1>

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You can deposit your scholarly work or publication into an online database of digital resources that is open access – this is known as an open access repository or archive.

This “self-archiving” activity places your work into a database that collects, preserves, and disseminates your work. Furthermore, if an OA archive or repository complies to the Open Archives Initiative Protocol for Metadata Harvesting, then the deposited works are optimized for retrieval and analysis by search engines and computer programs.

These repositories may include theses and dissertations, course materials, learning objects, data files, audio and video files, institutional records, or any other kind of digital file. For example, MIT’s instructional materials are deposited into OpenCourseWare for public access.

Authors can submit preprints – the draft copy of a journal article that has not been published in a peer-reviewed journal – into an OA archive without requiring permission from a traditional journal publisher. Many journals allow authors to submit their postprints – the article in the form after peer review or the final published form. If the journal’s policy does not permit self-archiving, you can request permission from the publisher or you can archive the preprint and the corrigenda – the latter lists the final changes made to the preprint.

To find an archive to deposit your scholarly works, search the Directory of Open Access Repositories at <http://www.openoar.org/>

You can search for a publisher's copyright policies and permissions for self-archiving in the Sherpa Romeo database:

<http://www.sherpa.ac.uk/index.html>

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A prominent open access archive is <http://arxiv.org/> It provides open access to over 575 349 preprints and postprints for the fields Physics, Mathematics, Computer Science, Quantitative Biology, Quantitative Finance and Statistics. This database was originally hosted at the Los Alamos National Laboratory, but now it is managed by Cornell University.

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At the University of California, there is a unique program known as eScholarship.

You can deposit your scholarly works into an open access repository in eScholarship. The University of California will preserve, organize, and disseminate these works.

eScholarship also has a publishing service that offers a manuscript and peer-review management system as well. You set up an account and can create your own ebook or publish your own journal with the application that the University of California manages. You can also publish working papers, conference proceedings, seminar/paper series, and other formats. Authors focus on intellectual content and eScholarship manages a lot of the distribution and web platform development.

LBL is currently one of its top contributors.

For University of California-affiliated individuals, all of these services have no fees.

A recent development in eScholarship is the University of California Publishing Services (UCPubS). This is a collaboration with the University of California Press. It is a print on demand service whereby you can publish an open access work, and if the reader chooses to, they can purchase a printed and bound copy. This can be a source of revenue for the author.

www.escholarship.org/publish_ucpubs.html

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Some institutions try to encourage open access practices. They may provide financial, administrative, and political support for their members to engage in open access initiatives.

For instance, seven leading universities have signed a "Compact for Open Access Publishing Equity" <http://www.oacompact.org/> to support publishing in open access journals. This is a pledge to develop systems that will financially

support the open access publishing fees of their scholars. If a scholar does not expect funds for open access fees from another institution or funding agency, then the university will provide some financial support.

The universities include:

Cornell University

Dartmouth College

Harvard University

Massachusetts Institute of Technology

University of California, Berkeley

University of Ottawa

Columbia University

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At UC Berkeley, there is financial support for open access publishing through the Berkeley Research Impact Initiative (BRII), which is supported by the University's Vice Chancellor for Research and the University Librarian. This pilot program gives funds to Berkeley authors to pay for open access publishing fees that are not supported by grants or contracts.

UCB faculty, post-doc, or currently enrolled graduate student are eligible. The financial support is up to \$3000 for open access journal fees, and up to \$1500 for hybrid journal fees. There is a maximum of \$6000 per year.

A "hybrid journal" is a traditional subscription-based journal that permits articles to be made immediately available to the public if the author pays an additional publication fee. However, "hybrid open access" differs from true open access because hybrid publishers may impose restrictions on redistribution and reuse, whereas a fully open access journal has limited copyright restrictions to support redistribution and reuse.

This financial support may encourage an author with limited funds to select an open access option for publication over traditional means.

http://www.lib.berkeley.edu/scholarlycommunication/oa_fees.html

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Another way that institutions have supported open access is by issuing mandates. This is a requirement that organizational members make their scholarly articles available for open access dissemination. The National Institutes of Health, the Wellcome Trust, and the Howard Hughes Medical Institute require that all articles published on research funded by them to be deposited into a repository for open access dissemination.

Additionally, universities have open access mandates as well. MIT requires all faculty members to make their scholarly articles available to the university for the purpose of open access dissemination and management. Other institutions with

a similar mandates include Harvard University's Faculty of Arts and Sciences and Stanford University's School of Education.

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Institutions may also come together and consolidate their administrative and financial resources to promote open access publications.

An example is SCOAP³, the Sponsoring Consortium for Open Access in Particle Physics Publishing, which proposes an innovative economic model for Open Access.

This consortium is an international group of libraries and funding agencies that will contract publishers to administer peer-review, editing, and Open Access publishing for publications in high energy physics. Publishers, both not-for-profit and commercial, will be invited to bid to provide these services in a process known as open tender. This competition for providing these services to the consortium is an established practice in the high-energy physics community for optimizing price and quality. Funding for this project comes from redirecting subscription expenditures to traditional journal subscriptions.

http://www.arl.org/sparc/publications/papers/SCOAP3_09april.shtml

LBNL is a member and there are many other academic institutions, funding agencies, and international members.

<http://scoap3.org/whoisscoap3.html>

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To promote policies for open access of scholarly materials, scientists have been advocating legislation. For instance, 41 Nobel Laureates have written an open letter to the US congress to ensure open access to federally-funded research results. This is support for the bi-partisan Federal Research Public Access Act (FRPAA), introduced by Senators Lieberman (I-CT) and Cornyn (R-TX). This legislation would require open access to published results of research funded through eleven U.S. agencies and departments – and these articles need to be publicly available within six months after publication. Prominent funding agencies involved include the National Institutes of Health, the National Science Foundation, and the Department of Energy.

Additionally, there are advocacy groups that scientists can participate in. Some examples include the:

- Alliance for Taxpayer Access
<http://www.taxpayeraccess.org/>
- SPARC, the Scholarly Publishing and Academic Resources Coalition, which is an international alliance of academic and research libraries working towards open access and equitable practices in scholarly communications.

<http://www.arl.org/sparc/index.shtml>

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To review, there is a spectrum of options for LBNL scientists to participate in open access initiatives. There are choices with varying levels of commitment. Making an open access decision requires consideration of the unique factors facing scientists and their institutional culture. To guide the decision-making you can refer to recommendations that some institutions have made. For example, the Office of Scholarly Communication at the University of California have made the following suggestions:

(1) Manage your intellectual property

Retain certain copyrights and transfer limited rights to the publisher
Reserve some licensing rights in your publication contract

Adopt fair copyright policies:

Editors: influence your journal's policies

Society members: influence your society's policies

Authors: submit only to publishers with enlightened copyright policies

Maximize the reach and impact of your work:

Publish your work where access is maximized

Grant non-exclusive rights to others to use your work

(2) Use alternative forms of publishing

Deposit your work in open access repositories

Submit to open access journals

Participate in UC/Springer Open Access Pilot

(3) Support sustainable scholarly communication

Wield your influence with publishers

Promulgate society publishing best practices

Support publishing experiments and new business models

(4) Comply with public access mandates – such as the NIH Public Access Policy

(Office of Scholarly Communication, University of California, 2009)

<http://osc.universityofcalifornia.edu/>

From this list, we see that there are clear and tangible activities that research scholars can take to promote and engage in open access.

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I would like to take a minute for an aside.

Open access has focused on published works like journal articles, technical reports, and the like. However, the principles of open access may also extend to scientific data in what is known as open data.

Open data holds that certain data should be freely available to the general public without copyright, patents or other mechanisms of control. It focuses on data that is non-textual such as maps, genomes, chemical compounds, mathematical and scientific formulae, medical data and practice, bioscience, and biodiversity.

An example is GenBank, where genetic sequences are entered into a database for search, retrieval, and linking to other information resources.

Some agencies are encouraging that researchers deposit their data along with their publications into an open access archive. They include the Canadian Institutes of Health Research (CIHR) and the Wellcome Trust. Also, explore the work of Science Commons <http://sciencecommons.org/>

When data is archived it is preserved and made available for sharing and reuse by other scientists. This may advance scientific collaboration and encourage interdisciplinary discoveries.

An example of an open data archive is the Data Observation Network for Earth (DataONE). This is a broad database about life on earth and the environment, including biological data sets about genomes through to the ecosystem. It is a collaboration among many partners but is funded by the National Science Foundation.

<https://dataone.org/about>

By sharing data through open data initiatives, new discoveries may be fostered. Open data also supports eScience, which is scientific research that uses a distributed network environment to conduct computationally intensive analyses and manage immense datasets from different sources. Fields that employ this include particle physics, earth sciences, and bioinformatics.

This field is also known as cyberinfrastructure, and the National Science Foundation and the Department of Energy have supported projects in this area through high performance computing of large datasets, which is an area of research at LBNL.

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Another tangential issue related to open access is open science, which fosters transparency in scientific research.

An example is open notebook science whereby methodologies, data, and results are made publicly available online. Researchers may publish their raw experimental data or their failed experimental results. Proponents argue that this transparency may advance science and possibly foster ethical research.

Another component is citizen science whereby volunteers who may not have scientific training, perform, or manage research-related tasks such as observation, measurement or computation.

(Lyon, L. 2009)

<http://www.jisc.ac.uk/publications/documents/opensciencertpt.aspx>

Here is an example of an open science notebook that includes data sets and video recordings of the experiment.

<http://usefulchem.wikispaces.com/Exp243>

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Beyond open access for data and journal publications, there are many other types of research communication that could be shared and preserved in open access initiatives. When you consider the scientific lifecycle, there are many instances of research communication for public access.

(Pepe et al., ?)

<http://arxiv.org/ftp/arxiv/papers/0906/0906.2549.pdf>

In the spirit of enhancing communication of scientific research, there is <http://www.scivee.tv/>, which is like YouTube for scientists. Video recordings of scientific presentations can be uploaded. Some researchers may post video recordings where they discuss their research publications and then provide links to text, figures, and data in what is termed as a “pubcast”.

At the Los Alamos National Laboratory, Herbert Van de Sompel is developing an infrastructure for sharing scholarly communications with the “Object Re-Use and Exchange (ORE)” standards. These standards facilitate use and re-use of scholarly communication units beyond raw datasets and journal publications to include simulations, software, dynamic knowledge representations, and annotations.

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Open access, data, standards, science, and other open movements may be an increasingly important issue.

Recently, the White House announced the Open Government Directive to foster transparent, participatory, and collaborative government. There are plans to make data and information from federally-funded research available for public access.

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Let's discuss the promotion of open access initiatives at the Lawrence Berkeley National Laboratory.

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Some questions to begin this exploration include:

- (1) Are open access awareness and activities important at LBNL?
- (2) If so, is there a need for promoting open access?
- (3) What would be the promotional message?
- (4) What activities could be developed to promote open access at LBNL?
- (5) How do existing reporting structures at LBNL, particularly Report Coordination and the DOE's Office of Scientific and Technical Information (OSTI) programs, align with open access initiatives?

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In addressing these questions, here are some issues for reflection:

OPEN ACCESS AWARENESS AND ACTIVITY

Key LBNL supporters of OA publishing
Administrative support for OA initiatives
Metrics for the awareness, activity, and support of OA
What OA support do LBNL members need?

FUNDING

How much is LBNL spending on OA publishing fees?
Are the OA journal pricing models prohibitive?
Are alternative models and sources of funding necessary?

ADVOCACY

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This presentation explored the awareness of open access principles, reviewed options for open access, and discussed whether open access promotion would be helpful at LBNL.

If I were to summarize this presentation in a haiku poem, it would read as so.

Open access helps
Protect, preserve, publicize -
What can be done here?

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Thank you.