Let's Talk About What Open Access and OpenBU Can Do For You

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What is Open Access?

Open Access is *access to literature* that is digital, online, free of charge, and **free of most copyright** and licensing issues.
- Peter Suber

Recent History of Open Access

2001	Creative Commons licenses released to public.
2003	PLoS publishes its first OA journal, PLoS Biology.
2008	Research funded by the NIH must be available to the public free through PubMed Central within 12 months of publication.
2017	Fair Access to Science and Technology Research Act (FASTR) bill reintroduced in Congress. Currently being sponsored in the Senate by Elizabeth Warren (D-MA).

What can OA Do for You?

- Increased rate of citation
- Boost your profile as a researcher
- Preserve your scholarly record by archiving in a subject or institutional repository
- Protect your rights to your intellectual property
- Obtain article-level metrics about your publications.

Open Access: Key Terminology
Levels/Types/Publisher Policies

Gratis	Online access free of charge
Libre	Online access free of charge plus various additional usage rights (typically a Creative Commons license).
Green	(Also Blue, Yellow, White & Gold). Refers to publisher self-archiving policies.
Gold	Publication in an open access journal

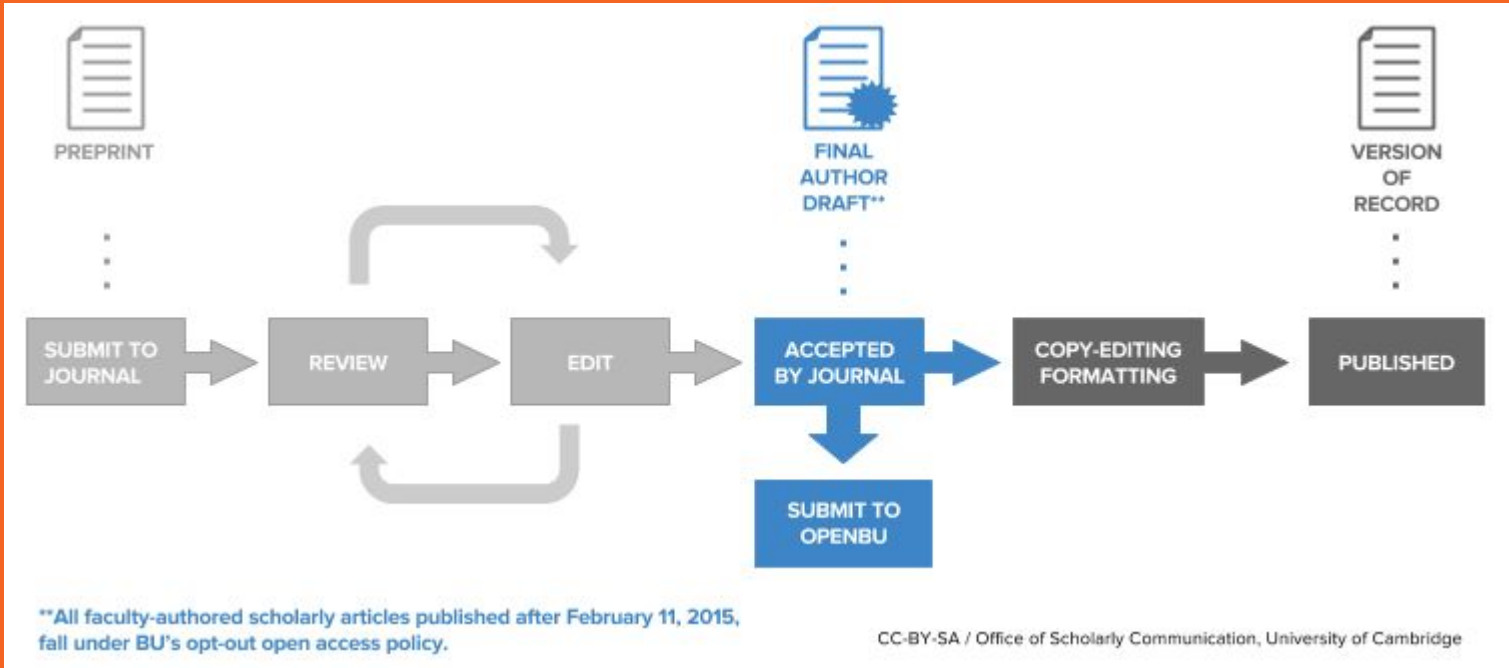~ Visit bu.edu/disc/ for more information about Open Access Publishing. ~

Open Access: Key Terminology
Manuscript Versions

Pre-print	Your own version of the article as it existed when it was submitted for peer review.
Post-print	Your own version of the article after revisions following peer review. Also called final author draft.
Publisher Version	Version of record. Includes journal formatting (headers and page numbers).

Review definitions online, compare sources, and consider what is relevant to your field.

Lifecycle of a Scholarly Article

PREPRINT

FINAL AUTHOR DRAFT**

VERSION OF RECORD

SUBMIT TO JOURNAL → REVIEW → EDIT → ACCEPTED BY JOURNAL → COPY-EDITING FORMATTING → PUBLISHED

SUBMIT TO OPENBU

**All faculty-authored scholarly articles published after February 11, 2015, fall under BU's opt-out open access policy.

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Where to Publish?

Journals	Difference between publishing Open Access and an Open Access Journal. Many publishers offer an OA option. Visit bu.edu/DiSc for resources on finding the right journal for your work.
Subject (Disciplinary) Repositories	Some are non-profit: arXiv, bioRxiv. Some are run by government agencies: PubMed Central Others are commercially owned: SSRN, Researchgate.
Institutional Repositories	Seeks to collect and showcase the intellectual output of a college, university of research facility. Example: OpenBU

Resources & Support for your Digital Scholarship

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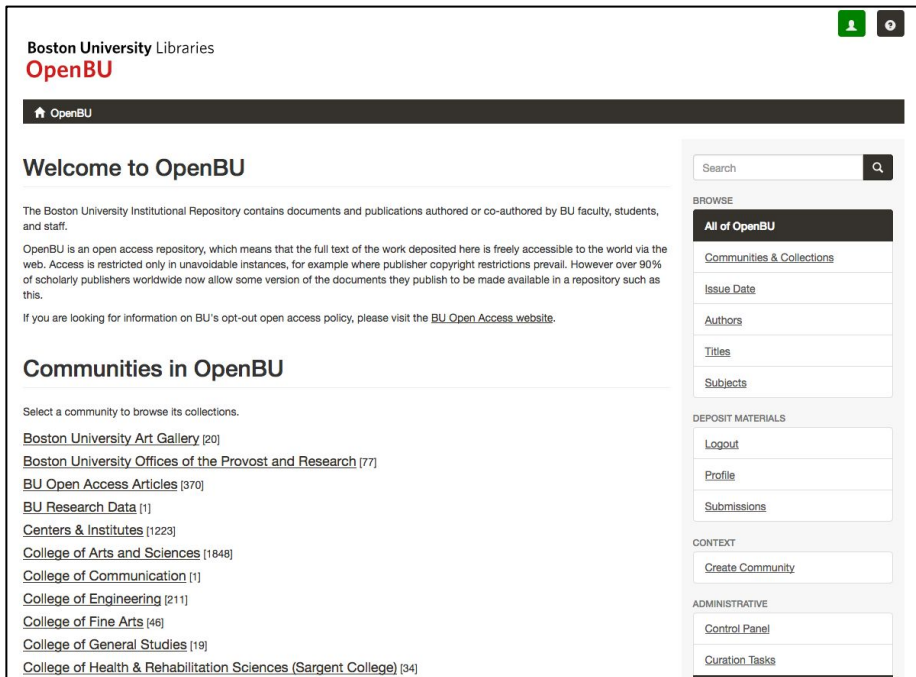
library.bu.edu/openaccess

Contact Digital
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What is OpenBU?

Boston University's Institutional Repository

Mission: preserve and disseminate scholarship, as well as creative & research outputs from BU.

Open to BU-affiliates:
→ faculty, staff, and **students**

Go to: open.bu.edu

What Can I Deposit?

We can handle almost anything

- Theses + Dissertations (automatically deposited from ProQuest)
- Working Papers (Pre-prints)
- Conference Presentations and Posters
- Scholarly Articles (open access*)
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- **Datasets and other research outputs** (+2GB per file)
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  - Methods
  - Raw data

*Some publishers may not let you deposit published versions of articles. (check SHERPA/RoMEO)

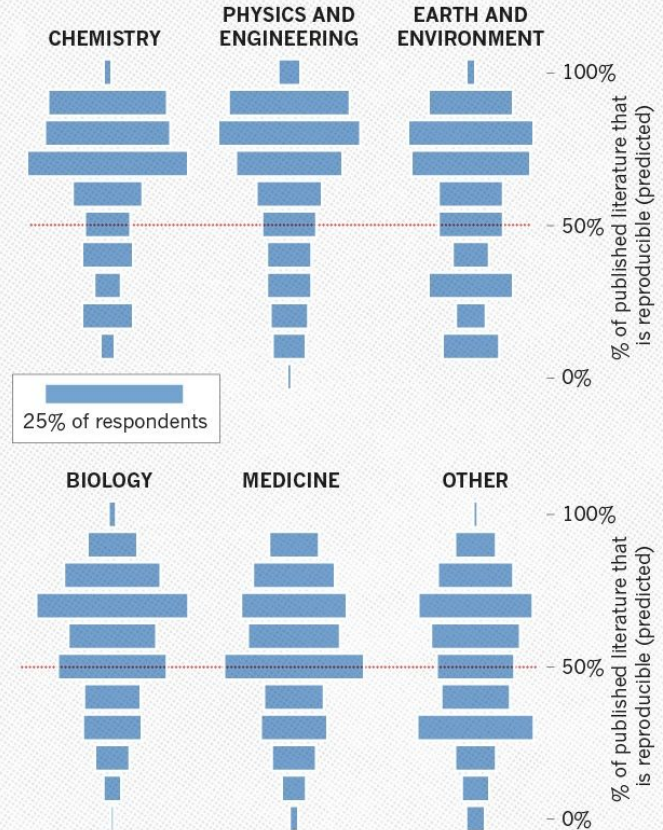# Why Deposit?

"1,500 scientists lift the lid on reproducibility" (Baker, 2016)

IS THERE A REPRODUCIBILITY CRISIS?

7% Don't know
52% Yes, a significant crisis
3% No, there is no crisis
38% Yes, a slight crisis

1,576 researchers surveyed
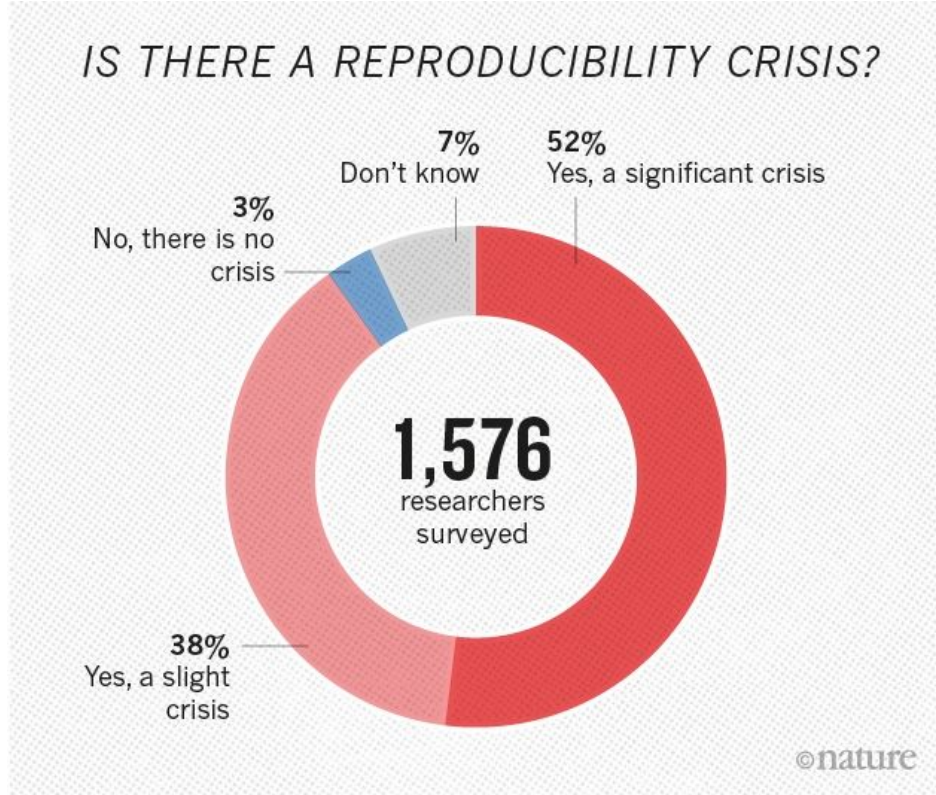
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HOW MUCH PUBLISHED WORK IN YOUR FIELD IS REPRODUCIBLE?
Physicists and chemists were most confident in the literature.

CHEMISTRY | PHYSICS AND ENGINEERING | EARTH AND ENVIRONMENT

100%
50%
0%

% of published literature that is reproducible (predicted)

25% of respondents

BIOLOGY | MEDICINE | OTHER

100%
50%
0%

% of published literature that is reproducible (predicted)

Number of respondents from each discipline:
Biology **703**, Chemistry **106**, Earth and environmental **95**, Medicine **203**, Physics and engineering **236**, Other **233**

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Benefits to Using OpenBU

- Helps Increase Citation and Reuse (+ Reproducibility of Results)
    - Usage metrics
    - Indexed in Google Scholar
- Helps w/ Journal and Funder Data Sharing Mandates
- Permanent Link for Your Research Outputs (no broken links!)
    - Institutionally-backed long term access and preservation
- Flexible: Make everything open or restrict some files
  (you own the rights to distribute, reuse and share your work!)
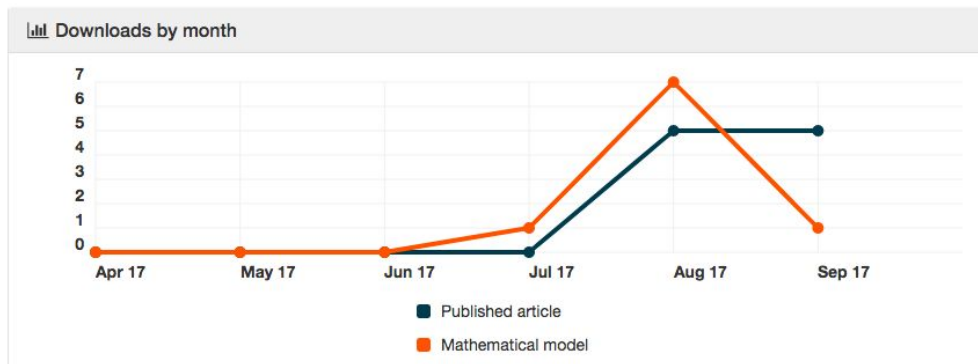
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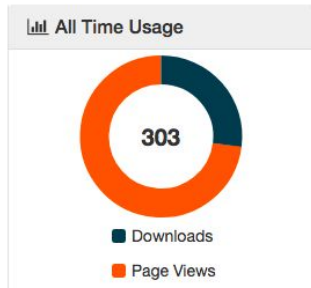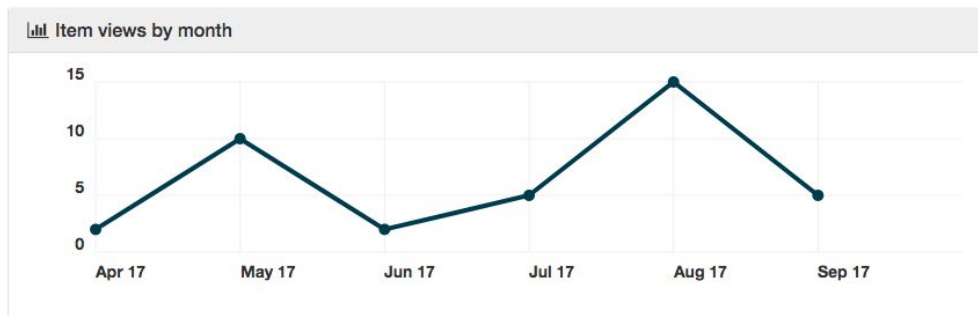
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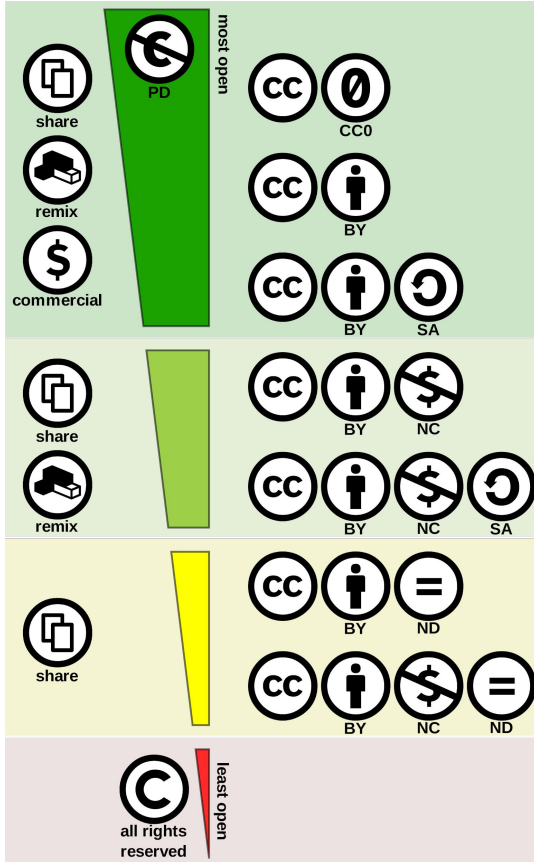
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- Describe the item (authors, title, date, abstract, etc)
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The non-equilibrium statistical physics of stochastic search, foraging and clustering

Permanent Link
https://hdl.handle.net/2144/27361

Abstract
This dissertation explores two themes central to the field of non-equilibrium statistical physics. The first is centered around the use of random walks, first-passage processes, and Brownian motion to model basic stochastic search processes found in biology and ecological systems. The second is centered around clustered networks: how clustering modifies the nature of transition in the appearance of various graph motifs and their use in modeling social networks. In the first part of this dissertation, we start by investigating properties of intermediate crossings of Brownian paths. We develop simple analytical tools to obtain probability distributions of intermediate crossing positions and intermediate crossing times of Brownian paths. We find that the distribution of intermediate crossing times can be unimodal or bimodal. Next, we develop analytical and numerical methods to solve a system of N diffusive searchers which are reset to the origin at stochastic or periodic intervals. We obtain the optimal criteria to search for a fixed target in one, two and three dimensions. For these two systems, we also develop efficient ways to simulate Brownian paths, where the simulation kernel makes maximal use of first-passage ideas. Finally we develop a model to understand foraging in a resource-rich environment. Specifically, we investigate the role of greed on the lifetime of a diffusive forager. This lifetime shows non-monotonic dependence on greed in one and two dimensions, and surprisingly, a peak for negative greed in 1d. In the second part of this dissertation, we develop simple models to capture the non-tree-like (clustering) aspects of random networks that arise in the real world. By 'clustered networks', we specifically mean networks where the probability of links between neighbors of a node (i.e., 'friends of friends') is positive. We discuss three simple and related models. We find a series of transitions in the density of graph motifs such as triangles (3-cliques), 4-cliques etc as a function of the clustering probability. We also find that giant 3-cores emerge through first- or second-order, or even mixed transitions in clustered networks.

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