

BD² Open Science Policy

August 2024

The goal of BD² is to develop a deeper understanding of bipolar disorder to facilitate the development of improved interventions through a collaborative, open and dynamic network of researchers. Open science is a key value of this initiative. Open science allows research data and results to be accessible online, and free of cost and other barriers. An open science policy allows the rapid and free exchange of ideas to accelerate research and enable discovery. This document outlines the open science policies of BD², which can be summarized through five primary components:

1) **Post preprints.**

Draft manuscripts must be posted in an open access preprint repository no later than the time of article submission to a journal for review.

2) **Ensure immediate open access.**

Publications at a journal must be immediately freely available online with no embargo period. Grantees are required to retain copyright via CC BY 4.0 or CC0 license for unrestricted reuse.

3) **Share research outputs and inputs.**

All previously unpublished research outputs (data, code, protocols, and lab materials) that are included in a publication must be deposited in a publicly accessible repository no later than time of publication and cited in the publication with their persistent identifier. All previously published research inputs (data, code, protocols, and lab materials) included in a publication must be unambiguously identified

4) **Include appropriate acknowledgments and affiliation.**

BD² must be acknowledged with specific language and all BD²-affiliated authors must share their ORCID in the manuscript.

5) **Share outputs with the BD² network.**

All BD²-funded Research Outputs arising from BD² grants must also be shared within the BD² grantee virtual platform, no later than time of final publication.

BD² requests that all funded research teams in the Discovery Program agree to and adhere to the requirements listed below that pertain to these five components in the context of manuscripts and research outputs generated using BD² support. **To ensure that grantees are compliant with this Open Science Policy, all BD²-supported manuscript drafts must be sent to the BD² Program Team no later than the time of preprint posting.** Note that BD²-supported manuscripts refer to all work published with BD² funds, whether in part or in full, and includes those created after the funding period has ended.

Manuscript Requirements

All manuscripts partially or fully funded by BD² must adhere to the following:

- 1) **Preprint:** Preprints must be deposited in a preprint repository no later than the time of manuscript submission to a journal for review. Preprint repositories include bioRxiv, medRxiv, or similar. Preprints must meet the same open access standards as the version submitted for publications, including adding links to repositories for research outputs. See “Research Outputs” section of the policy for details on sharing outputs.
- 2) **License:** For both preprints and publications, the submitting authors must obtain the appropriate Creative Commons Attribution license [<https://creativecommons.org/licenses/by/4.0/>] to ensure that

the work is shareable. This license should be either CC BY 4.0 (CC BY) or CC0. The journal in which the manuscript is submitted must allow the manuscript to have these licenses.

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- b. CC0 is applied to authors employed by the government, or for other content in the public domain. Under this license, no attribution is required.
- c. Please note that BD² does not allow CC-BY-ND or CC BY-NC-ND as licensing options. These licenses are not open access licenses, as they do not permit adapting, transforming, translating, or updating the work in any way. For more on why non-commercial licensing is not allowed, please read the rationale from cOAlition S under the header “Licenses” [<https://www.coalition-s.org/rationale-for-the-revisions/>].
- d. To ensure appropriate licensing, the authors must:
 - i. Include language that the submission carries a CC BY 4.0 or CC0 public copyright license in the acknowledgment section of the submitted manuscript (to both the preprint server and the publisher). See “Acknowledgements” section of the policy for required language.
 - ii. Determine whether the journal will include the CC BY 4.0 or CC0 license in the published VoR (the final version of record published by the journal). Journals typically list the license terms of an article under a rights and permissions or a copyright tab. If the submitter cannot find this information, they can also send an email to the publisher.
 1. If the preprint server or journal has the appropriate licensing, and the article is being published in an open access journal, no further action is necessary. The journal will submit the article to PubMed Central (PMC) or Europe PMC upon publication.
 2. If the preprint server or journal does not have the appropriate licensing, and/or if the journal is subscription-only, the submitting authors must select another preprint or publication venue such as an institutional repository.

3) **Open Access:** Preprints and publications must be made immediately publicly available via a free online access peer-reviewed journal, with no embargo period.

- a. Authors are encouraged to use the Sherpa tool [<https://beta.sherpa.ac.uk/>] to verify a journal’s open access status.
- b. BD² will pay for all open access publication costs outside of the grant, as long as the manuscript is 100% compliant with the BD² Open Access Policy.

4) **Attribution:** Preprints and manuscripts must appropriately attribute BD².

- a. The following language must be included in the acknowledgments section of the publication:
 - i. “This research was funded in whole or in part by BD²: Breakthrough Discoveries for thriving with Bipolar Disorder. For the purpose of open access, the author has applied a CC BY [replace with CC0 if appropriate] public copyright license to all Author Accepted Manuscripts arising from this submission.”
- b. The grant must also be acknowledged in research outputs, such as datasets, software, resources, or protocols, as follows:
 - i. For outputs published on platforms that include an annotation field for the funder, such as protocols.io and Zenodo, BD² is to be included as a listed funder of the output.
 - ii. For other platforms that do not have a designated field to list funders, the language above in section 3.a.i must be included in the acknowledgments. If there is not a specified place for Acknowledgements, the notes or detail area of the record can be used.
- c. To ensure that the public can track BD² funded grantees BD² must be included in author affiliations.

- i. In addition to an investigator's home institution, a BD²-specific affiliation should be designated with the following: "BD²: Breakthrough Discoveries for thriving with Bipolar Disorder, Santa Monica, CA"
- ii. This affiliation should be used for any current or former member of a BD²-funded team who is an author on a BD²-funded paper. Team members include anyone who is or has previously been an activate participant on research efforts associated with the team's BD² project; these individuals should be listed on the team's roster on the BD² Hub.
- iii. All BD²-affiliated authors must include their ORCID (Open Researcher and Contributor Identifier).

Research Outputs and Inputs

Research inputs are pre-existing resources used in research experiments. Research outputs are resources newly generated by experiments described in a publication.

All research outputs must be deposited in a publicly accessible repository and include:

- Data, including both primary data and metadata but excluding protected health information
- Software/Code
- Protocols and Standard Operating Procedures
- Lab Materials, such as cell lines, animal lines, antibodies, viruses, plasmids, reagents, equipment, and other tools developed for experimental use

These research outputs and all research inputs must be properly identified and cited.

The following guidelines pertain to the requirements for the sharing and citing of all research outputs and inputs that are used under or developed with BD² funding:

- 1) **Datasets:** Datasets must be posted in a public data repository. Data repositories used must:
 - a. Enable immediate open access to data upon preprint posting and manuscript submission,
 - b. Allow reuse with licensing,
 - c. Assign a unique and persistent identifier to the dataset, such as a digital object identifier (DOI) or accession number that allows linking and citation,
 - d. Include metadata necessary to understand, assess, and replicate the reported study findings, while ensuring that all human data are deidentified and protected health information is adequately protected,
 - e. Provide long-term preservation and storage of data, which meet the ISO's trustworthy digital repository standards.
- 2) **Protocols and Standard Operating Procedures (SOP):** Detailed protocols and SOPs must be made publicly available and updated through a protocol sharing service such as protocols.io.
- 3) **Tools and Reagents:** Tools and reagents whose use or development is funded by BD² must be citable and shareable to allow for reproducibility. This includes cell lines, transgenic models, plasmids, clones, and monoclonal antibodies.
 - a. For Research Inputs, authors must cite permanent identifiers for the resources in preprints, manuscripts, protocols, and any other published descriptions of their use. Permanent identifiers include RRIDs and CAS numbers but not supplier catalog numbers. For assistance with citing lab materials, BD² recommends the Resource Identification Portal [<https://rrid.site/>], which aggregates information from multiple repositories and provides identifiers for citation in publications.
 - b. Research Outputs developed with BD² support must be available to the scientific community and citable to support reproducibility and enable further research. Such resources should be posted in an appropriate repository for the specific tool or reagent. If an investigator is unsure on the best practices and/or options for sharing resources, they should contact the BD² Program Team.

- 4) **Code-based Research:** Software, algorithms, scripts and other code-based research outputs must be made available through code repositories like GitHub and be assigned a DOI. Zenodo can also be used to assign a DOI. Note that any amount of code written to clean, analyze, or visualize data must be made publicly available. Include annotations and user notes to any code-based research to allow for re-use.
- 5) **Virtual Grantee Platform:** Researchers funded by BD² will use a custom-built Research Outputs Management System to track and develop a catalog of research outputs to enhance access to these resources within the network. **Use of this platform will be a factor for future follow-on funding decisions.**

Additional Endorsements

There are several organizations, guidelines, and efforts to improve open access among the research community. BD² 's endorses the following organizations and efforts:

- 1) **cOAlition S** - This coalition of organizations endorses Plan S, an initiative that promotes open access publication of research funded by public grants.
- 2) **FAIR Principles** - These guidelines promote research data to be findable, accessible, interoperable, and reusable.
- 3) **Panton Principles** - These principles promote open access to research data to allow for the analysis, processing, and sharing without financial, legal, and technical barriers.
- 4) **SfDORA** - The Declaration on Research Assessment promotes eliminating journal-based metrics, assessing merit-based research and not journal reputation and improving publication requirements for the betterment of research.