

2021 State of Open at the University of Colorado Boulder

*Special Report on Open Access Article Processing Charges Based on Data
from 2020*

October 25, 2021

*Prepared for the Data and Scholarly Communication Services Section, Center for Research Data
and Digital Scholarship, University Libraries, University of Colorado Boulder*

Melissa H. Cantrell, *Scholarly Communication Librarian*
Andrew Johnson, *Lead, Data and Scholarly Communication Services Section*
Jordan Wrigley, *Data Librarian*



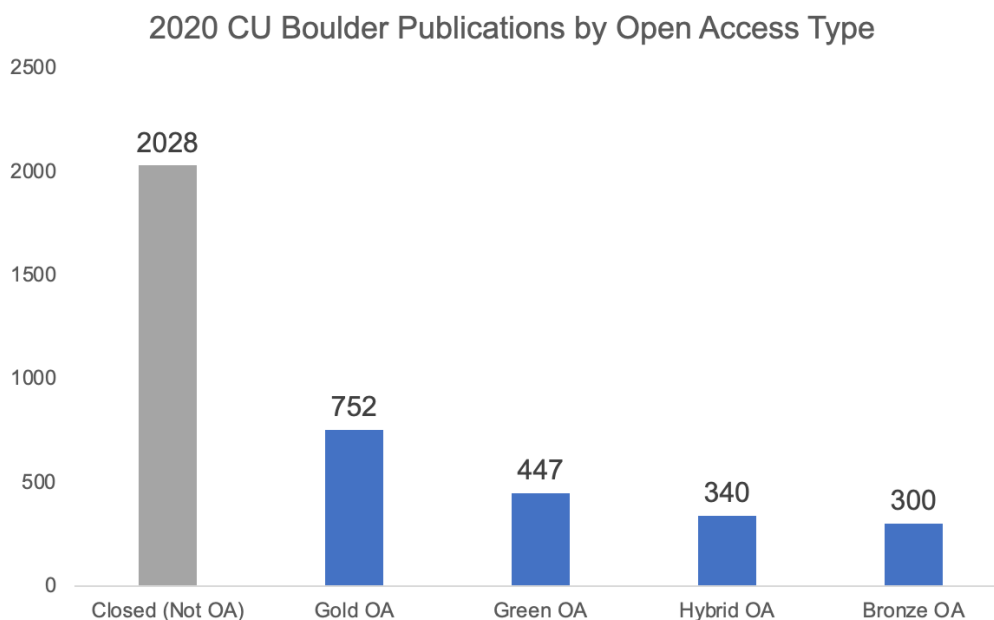
University Libraries

UNIVERSITY OF COLORADO **BOULDER**

Introduction

As a complementary effort to the annual “2021 State of Open at the University of Colorado Boulder” report,¹ this special report provides a deeper look at article processing charges (APCs) for open access (OA) articles published by authors at the University of Colorado Boulder (CU Boulder). This analysis is not intended to be updated regularly, which is why it is being presented separately from the larger report. This special report utilizes Dimensions² as a data source for OA articles published by CU Boulder authors in 2020.³ When cross-referenced with journal-level APC data from the Directory of Open Access Journals (DOAJ),⁴ the Dimensions data can be used to estimate total costs of APCs for applicable CU Boulder articles from 2020 as well as the estimated percentage of APCs covered by the CU Boulder Libraries OA Fund.⁵

Figure 1



¹ Caillet, R., Cantrell, M., Johnson, A., Ranganath, A., & Wrigley, J. (2021). “2021 State of Open at the University of Colorado Boulder: An Update on Open Access Practices Based on Data from 2020”: <https://doi.org/10.25810/3TMP-K869>

² CU Boulder Dimensions: <https://www.colorado.edu/fis/dimensions>. Dimensions is an innovative grants and funder database, citation index, and research analysis tool that provides insights into research activities from multiple perspectives allowing CU Boulder stakeholders to analyze and understand the research landscape across the U.S. and around the globe.

³ To replicate the dataset used to generate the findings for this special report in Dimensions, log in to <https://www.colorado.edu/fis/dimensions> using your CU Boulder credentials. Research organization is University of Colorado Boulder; publication year is 2020; publication type is “Article” or “Proceeding.”

⁴ Directory of Open Access Journals: <https://doaj.org/>

⁵ CU Boulder Libraries Open Access Fund: <https://www.colorado.edu/libraries/research-assistance/open-access/open-access-fund>

Figure 1 illustrates the 2020 number of closed (not OA) articles by CU Boulder authors compared with the counts for each type of OA article tracked by Dimensions.⁶ A total of 1,839 articles published by CU Boulder authors in 2020 were available via at least one type of OA, representing 47.5% of the total CU Boulder articles included in Dimensions for 2020. These 1,839 articles serve as the basis for the in-depth analysis of APCs provided in this special report.

APCs at CU Boulder

APCs may be paid by the author, the Libraries OA Fund, grant funding, departmental funding, other authors' institutions, or any number of other sources. While we cannot determine the exact source of an APC payment unless it was paid through the Libraries OA Fund, we can cross-reference journal title information from Dimensions with APC data provided by DOAJ in order to estimate total APC costs. APCs are required for publication in some Gold OA journals and all Hybrid OA journals. Articles categorized by Dimensions as Green OA, which are articles posted by authors in subject or institutional repositories without any associated fee, can be assumed not to have corresponding publications in Hybrid OA or Gold OA journals since the data set always returns the "best OA version," which would be the version of record (i.e., Gold OA or Hybrid OA version) if available. Bronze OA articles, without affiliated open licenses, do not have a determinate status as OA although they are freely available, and thus should not have any APC associated with them.

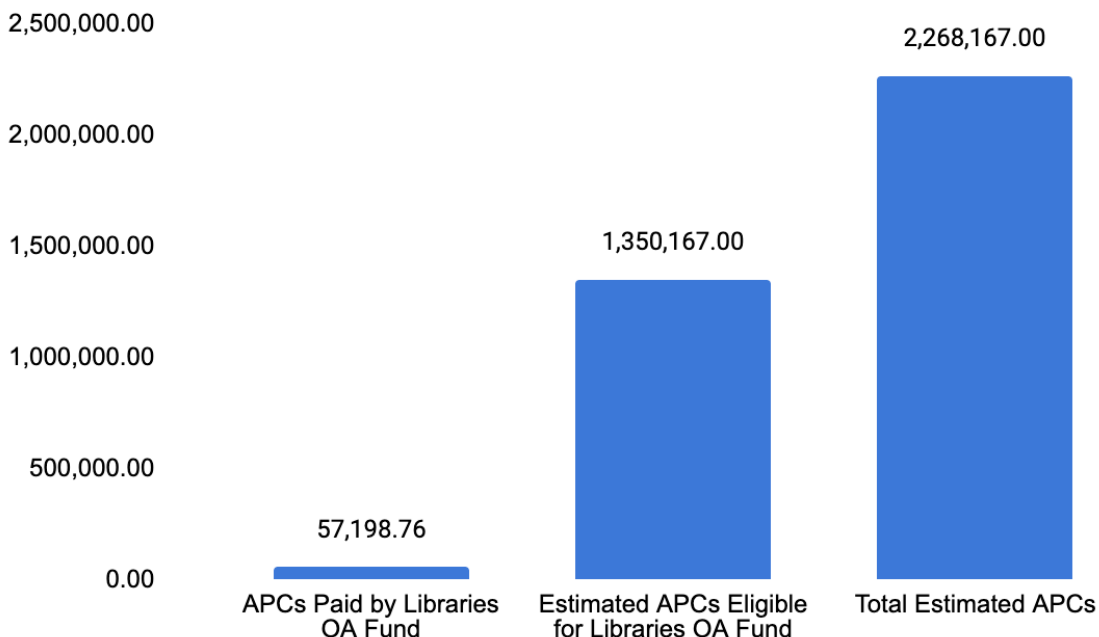
Of the 1,092 CU Boulder articles published in Gold OA or Hybrid OA journals in 2020, 726 were determined to be eligible for the Libraries OA Fund.⁷ Of those 726, 114 articles were published in journals that do not charge APCs, and an APC amount could not be determined for another 14 articles. This left 598 articles for which an estimated APC cost could be determined.

⁶ For an explanation of different OA types, please see the 2021 State of Open report: <https://doi.org/10.25810/3TMP-K869>

⁷ Hybrid journals are never eligible for funding through the CU Boulder Libraries Open Access Fund

Figure 2

2020 Total APC Estimates and Actual Libraries OA Fund Payments (\$)



Cross-referencing the journal titles for the 598 articles for which an APC cost could be determined with the APC data in DOAJ results in an estimated total APC cost of \$1,350,167.00 for all Libraries OA Fund eligible articles in 2020. As reported in the “2021 State of Open at the University of Colorado Boulder” report, the Libraries OA Fund accounted for \$57,198.76 in APCs paid for in 2020, which represents approximately 4.2% of the total cost of APCs for eligible articles (see Figure 2). Additionally, the average APC amount for all Gold OA articles authored at CU Boulder in 2020 was \$2,262, which is notable because it is above the cap of \$2,000 that can be requested from the Libraries OA Fund in accordance with its policies.

Hybrid OA journals also charge APCs only if an author chooses to make their article available as OA. It is difficult to get an accurate estimate of title-by-title APC costs for Hybrid OA journals since these are not tracked in any source comparable to what the DOAJ provides for Gold OA journals, but an OpenAIRE study from 2018 estimated the average cost of Hybrid OA journal APCs to be \$2,700 per article.⁸ Applying this estimated average APC cost to all 340 Hybrid OA articles published in 2020 by CU Boulder authors results in a total of \$918,000 spent on Hybrid OA APCs. These APCs represent costs that are not eligible for funding from the Libraries OA Fund and that must be paid directly by authors, grants, or other sources. Taken together, APCs for all

⁸ OpenAIRE (2018). “The worst of both worlds: Hybrid Open Access”: <https://www.openaire.eu/blogs/the-worst-of-both-worlds-hybrid-open-access>

relevant Gold OA and Hybrid OA articles totalled an estimated \$2,268,167.00 of which the Libraries OA Fund only covered approximately 2.5% in 2020 (see Figure 2).

Conclusion

For any future analyses, it will be critical to investigate the actual sources of APC payments not covered by the Libraries OA Fund, which represent an overwhelming majority of the estimated APC costs from 2020 (97.5%). Many articles have one or more co-authors at other institutions, and those institutions could serve as possible external sources of funding for some of the APCs associated with CU Boulder, but it is still reasonable to assume that CU Boulder authors are shouldering a significant portion of the total APC costs through grants, department funds, and even out-of-pocket payments. While this special report provides a fuller picture of the total annual cost of APCs for CU Boulder authors than previous analyses, we hope it will serve as just one important step toward understanding the complete picture of how and by whom OA is paid for at CU Boulder.