

# Open Access Policy and Funding in Cyprus University of Technology a Case Study

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**Abstract.** Today an increasing number of researchers and scientists follow Open Access. Open Access is a movement that offers researchers and the academic community the opportunity to share and access academic information freely and immediately. The Library and Information Services at the Cyprus University of Technology (CUT) has defined Open Access as one of its main strategies. An author fund has been established since 2013, with the financial support of a pharmaceutical company, in order to promote and support Open Access. Statistics of this Fund have shown that funding covers publications mainly in health sciences. These findings have allowed us to implement a new policy for the financing of Open Access publications from our university's budget, which falls within the framework of its social responsibility. However, considering the "hybrid model" and the "double dipping" which favors 'big' publishers, we will examine the different possibilities and present our reflections and decision for the new policy. Finally we will describe the policy implemented.

**Keywords.** Open Access, author fund, author fund policies, hybrid model

## 1. Introduction

Open Access is the free, immediate, and online availability of research articles coupled with the rights to use these articles fully in the digital environment [1]. According to Peter Suber [2], Open Access removes price barriers such as subscription fees and permission barriers such as licensing restrictions, in order for authors to publish their work without expectation of payment and with minimal use restrictions.

There are about 28.000 peer reviewed journals which publish about 2.5 million articles per year [3]. As we understand, there is a huge number of peer-reviewed journals to which a library or even a consortium is unable to subscribe.

Today an increasing number of researchers and scientists follow Open Access (OA). Libraries, especially academic libraries, and promote Open Access by providing their resources to their users and implementing institutional repositories.

Furthermore, the Cyprus University of Technology (CUT) Library has defined Open Access as one of its main strategic goals and is the first academic research institution in Cyprus, which has implemented a Research Fund to promote Open Access and support scientific publications in Open Access journals.

The two basic Open Access models are referred to as "Gold road" and "Green road". In the first model, "Gold road", the authors make their work openly accessible through Open Access journals. The Open Access journals often charge processing fees

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which need to be covered by the authors. In the second model the “Green road”, the authors submit their work to an institutional repository [4].

The CUT Library after studying different policies, applied by SPARC members, decided to apply a restricted policy. Articles, to be eligible for funding, must be published without any access restrictions in a peer-reviewed electronic Open Access journal which is a member of the Directory of Open Access Journals.

The Senate of CUT approved the creation of the CUT Open Access Author Fund. Within the framework of its Corporate Social Responsibility, a local pharmaceutical company has undertaken the financing of the Fund, with a maximum funding amount.

Research carried out under the European program PASTEUR [5] showed that many institutions enhance the Open Access fund from their own fund or allowed APCs to be paid from a research grant.

Recently, the Cyprus government approved of the Cyprus National Open Access Policy which complies with the current provision and best practices of the European funding program Horizon 2020 and the policy for Open Access to scientific publications [6].

The Cyprus Research Council has not yet managed to provide coverage for OA fees. Therefore, the CUT Library Committee suggested to the CUT Research Committee to enhance the Open Access APCs which was approved by the senate at the beginning of 2017. Furthermore, the Library committee is going to decide on the policy for the new fund.

In this paper, we are going to analyze the policies for financing Open Access publications. In addition, we will investigate the results of the Open Access Author Fund initiative and provide numbers and figures about the applications for funding and publication production. Furthermore, we will investigate the Open Access Author Fund policies worldwide and we will describe the policy we will implement in the case of funding Open Access by the University budget. Also, we will discuss recent CUT enhancements and the implementation of ORCID in order to encourage our researchers at the beginning of their careers to establish a persistent researcher identifier. The upgrade of our Institutional Repository with CRIS functionalities will be discussed in order to give more value and become more attractive, because it is our belief that when users use institutional repositories, they will better understand the benefits of Open Access.

## **2. The Journey of the Library towards Open Access**

As already mentioned, the CUT Library has set Open Access as one of its Strategic goals. In order to achieve the aforementioned, the Library and Information Services of CUT implemented a strategic plan and followed specific steps.

In 2007, the Cyprus University of Technology decided that the academic staff must deposit their scientific publications to the Library. Then, in 2008 the deposit of the undergraduate and postgraduate theses to the Library was made mandatory.

Moreover, the Library developed the institutional repository Ktisis with the use of the open source software DSpace. Also, since its operation, Ktisis provides the author who deposit its work the possibility to apply one of the available Creative Commons licenses.

The CUT Library supports the two basic Open Access models. The first one is the “Gold road”, where the authors make their work openly accessible through Open

Access journals. The Open Access journals often charge processing fees which need to be covered by the authors. In this case, the CUT Library covers the APC fees according to the CUT Open Access Author Fund requirements.

The second model is the “Green road”, where the authors submit their work to an institutional repository. The CUT Library has designed and developed the first institutional repository in Cyprus named Ktisis. The deposit of the undergraduate and postgraduate thesis in Ktisis was made mandatory. Also, the CUT Library developed management policies which were approved by the academic senate for the undergraduate and postgraduate theses, and the scholarly publications.

Furthermore in 2011, the Cyprus University of Technology signed the Berlin Declaration on Open Access.

Moreover, the same year the CUT Library conducted a study to find out what the academic community and PhD students thought about Open Access, difficulties they faced and also to examine the degree of familiarity with the Open Access publishing model [8]. From the research, we concluded that the use of Open Access is at a good level, but more promotion is needed.

Since 2012 the CUT Library participated in Open Access Week and organized events in order to promote Open Access and inform the scientific community.

Another important action was the approval, by the senate, of the establishment and the creation of the Cyprus University of Technology Open Access Author Fund in 2013. A local pharmaceutical company has undertaken the financing of the Fund, within the frame of its Corporate Social Responsibility.

Furthermore, in September 2013, the CUT Library upgraded its open source software DSpace for the purposes of compatibility with the European project Open Infrastructure for Research in Europe.

The CUT Library, in 2015, managed to renew the funding for another two years until 2017.

Recently, the senate approved the funding of Open Access publications by the university budget.

In 2016, the Cyprus government approved the Cyprus National Open Access Policy which complies with the current provision and best practices of the European funding program Horizon 2020 and policy for Open Access to scientific publications. The National policy provides guidelines and support for the implementation of Open Access to research outputs that are funded locally, is aligned with the European policies and is based on the already established infrastructure at the European level [9].

The Cyprus Research Council has not yet managed to provide coverage for OA fees. Therefore the CUT Library Committee suggested to the CUT Research Committee to enhance the Open Access APCs which was approved by the senate at the beginning of 2017. Furthermore, the Library committee is going to decide on the policy for the new fund.

The latest action was the implementation of ORCID. Researchers can create a research profile portal where they can obtain an ORCID or connect to an existing one. Through the CUT’s system, they have access to authenticate, read, update, add and synchronize research outputs with the new version of the Ktisis repository which runs on DSpace CRIS.

DSpace CRIS enhances and extends the institutional repositories and is an important software component in making them better able to cover all research activities, projects and to better support the people of an organization/institution with their research. Additional important operations in the research world that need

descriptions and tracking, are “grants”, “patents”, “organization units” and “researcher profiles (people)” [7].

Integrating and organizing all these operations in combination with publications adds value in terms of “visibility, discovery and the understanding of the complexity of the research domain” [7].

All objects such as publications, projects, supervised theses and patents are linked to the researcher profile. At the same time, all researchers belong to the organization’s units, i.e. Departments and Faculties.

### **3. Open Access Publishing Funds**

A growing number of universities and research organizations worldwide require from their researchers to provide Open Access to their peer-reviewed research articles, using the “Green” or “Gold” models. Furthermore, many universities have established separate funds for covering Article Processing Charges (APCs) regarding the Open Access publications.

The CUT Library conducted a report to examine the different Open Access funding policies around the world. The purpose of this report was to evaluate the different policies used by other universities and then to adapt them in order establish the Cyprus University of Technology Open Access Author Fund.

The CUT Library report covered the requirements for a university to become eligible for Open Access funding and analyzed approximately ninety OA policies from different universities from Australia, Austria, Canada, Germany, Netherland, Norway, Spain, Sweden, Switzerland, USA and United Kingdom. The results of the CUT Library report of the various policies used for financing Open Access publications will follow.

According to the report, the first to be examined was the case of the UK universities. It showed that academic institutions in the UK are adopting the Research Council UK [10] policy that supports both “Gold” and “Green” roads to Open Access. Funding covers both OA and hybrid journals.

Also, the Research Councils UK established an agreement with Elsevier where RCUK-funded authors can choose to comply with RCUK policy by either gold or green Open Access.

In Australia, there are numerous universities and research funds that provide authors with the financial support to cover OA publishing charges both for Open Access and hybrid journals. Since 2013, any publications arising from the NHMRC [11] and the ARC [12] are required to be deposited into an Open Access institutional repository freely accessible to the public within a 12 month period from the date of publication. Both the ARC and the NHMRC allow for up to 10% of the project budget (direct costs) to be allocated for the payment of article processing fees.

In Austria, two universities that established an Open Access funding were examined. The eligibility requirements for funding are that the journals must be listed in the Directory of Open Access Journals (DOAJ). There is also the flexibility which allows for one of the two universities to cover publication fees and in the case that the journal is not listed in the DOAJ, the publisher must be a member of the Open Access Scholarly Publishers Association (OASPA).

From an analysis of fourteen universities in Canada, it is shown that funded publications must be published in full Open Access journals. Articles that are published

in hybrid journals or journals with embargoes (limiting Open Access to content after publication) are not eligible for funding.

The CUT Library report also examined thirteen universities in Germany which showed that Open Access funds do not support the hybrid model. Regarding the eligible journals, it is stated that journals must be listed in the Directory of Open Access journals but this is not mandatory for the funded publications.

In contrast with the German universities, five universities in Norway established an Open Access fund that covers only the journals which are listed in the Directory of Open Access Journals (DOAJ).

In the Netherlands, two institutions were recorded that support Open Access funding. Both institutions encourage the option to cover magazines listed in the Directory of Open Access journals but only one of the institutions defines that the hybrid model is not eligible for funding.

In Spain, it was recorded that the University of Barcelona [13] had established a funding program. The requirements that apply to journals are, that the journals must be listed in the Directory of Open Access Journals. Also, publishers must be members of the Open Access Scholarly Publishers Association (OASPA) or adhere to its Code of Conduct. Articles in hybrid journals are not eligible for funding. Additionally, the University of Barcelona in 2016 established an agreement with the Multidisciplinary Digital Publishing Institute (MDPI), offering to researchers a discount of 25% on the standard fee they charge to publish accepted articles in any of their journals.

Finally, Open Access funding policies that are adopted in the United States were examined. Forty-seven universities have established Open Access funding, of which only seven cover the hybrid model. Hybrid journals are not eligible for funding according to twenty-two out of the forty-seven universities in the United States. Also, twenty-two universities define that eligible publications for funding must be listed in the Directory of Open Access Journals (DOAJ) and in some cases the publisher must be a member of the Open Access Scholarly Publishers Association (OASPA) or demonstrate its adherence to the Code of Conduct.

The findings of the CUT Library report indicate that the basic eligibility requirements for funding publications that are adopted by many universities around the world, require that the journals must be fully Open Access and listed in the Directory of Open Access Journals (DOAJ). Also the publisher must be a member of the Open Access Scholarly Publishers Association (OASPA).

#### **4. Existing Cyprus University of Technology Open Access Author Fund**

The Library of Cyprus University of Technology established the “Cyprus University of Technology Open Access Author Fund”[14] for the promotion of Open Access and the support of academics and researchers in the publication of their research in peer reviewed OA journals and books, where the author bears the publication costs. The CUT is the first academic research institution in Cyprus to implement the creation of a Financing Fund to support scientific publications in Open Access sources.

The creation of the fund was approved by the Senate in September 2013, aiming to fund academic publications in journals and Open Access books. The pharmaceutical company Remedica has undertaken the financing of the Fund, with a maximum funding amount of €14000 per year.

The CUT Open Access Fund is available to all the members of the academic staff, and to post-graduate students. The total requested funding amount per faculty member must not exceed € 3.000 and must be spent within the period of one academic year. Each faculty member, according to their discretion and prioritization needs, is required to not exceed the amount distributed and provided that the expenditure is eligible.

The basic criteria for eligible publications are:

- The article should be published in an Open Access journal without any access restrictions.
- Open Access journals must be a member of the Directory of Open Access Journals.
- The publisher must be a member of the Open Access Scholarly Publishers Association and adhere to the Code of Conduct (OASPA Code of Conduct).

Eligible Costs for funding:

- The «CUT Open Access Author Fund» covers only the costs and fees associated with Open Access publishing activity (Open Access publication fees).
- If there is more than one author in a publication, the funding covers the percentage corresponding to each author who is a member of the University and applying for funding.

Eligible costs for funding do not include:

- Costs for reprints, graphics and other charges. Such costs are covered primarily by the budget of the Research Activities.
- Published articles in electronic journals or books that charge an annual fee, including the magazines or books using the model of delayed Open Access, or provide an Open Access only option.
- Published articles or books that are the result of research funded by other External Research Projects covering expenses of publication/issue. This applies in cases where they are fully financed from external sources, mainly from the European Commission, the Research Promotion Foundation and other organizations/institutions.

## **5. The CUT Library Hybrid Institutional Repository**

The CUT Library institutional repository is a hybrid repository. This is defined by our research articles published in different scientific journals. This is not something that we control, it depends on the Publisher's policy.

When an article is deposited in KTISIS we verify, through the SHERPA/RoMEO database, the Publisher copyright policies and self-archiving.

In the case where there are no restrictions of access we attach the pdf file to the article entry in KTISIS. Otherwise, we enter the DOI of the article. Access to the article depends on if your institution subscribes to this journal.

## 6. The New Complementary Cyprus University of Technology Open Access Author Fund

After a new Library initiative at the beginning of 2017, the Senate approved the suggestion of CUT Library Committee for the creation of an Open Access fund to enhance the Open Access APCs. The main purpose of the CUT funding is to offer flexible publishing options for university researchers to make their research available in OA journals that cover a wide variety of subject areas.

The eligible criteria that we propose for the new Fund are the following:

1. Funded publications must be peer reviewed in order to be eligible for funding.
2. Publications should be published in an Open Access journal without any access restrictions using the Creative Commons Attribution (CC BY) or (CC-BY-SA) license. The Creative Commons Attribution licenses are also being used by the FP7 post-grant Open Access publishing Funds pilot [15] and the Research Councils UK. The (CC BY) license gives the opportunity for the re-use of the publication and the dissemination the research.
3. Open Access journals must be a member of the Directory of Open Access Journals.

Non-eligible journals:

1. The fund does not cover hybrid journals.
2. Journals with embargoes limiting Open Access content are not covered by funding. However, the authors can publish the post-print of their paper at the institutional repository of the university.

## 7. Cyprus University of Technology Open Access Author Fund Results and Discussion

Table 1 presents the total amount spent by the CUT Open Access Author Fund for the years 2013-2016. The total spent on APCs per year 2013 -2016 was € 45422. According to the given data there was a rise from 3 applications made in 2013 to 19, where an amount of € 24110,68 APC payments was recorded in 2016.

**Table 1.** Total applications and cost of APCs per year 2013 – 2016

Year	Application	Approved	Rejected	Amount (Euro)
2016	19	17	2	24110
2015	11	9	2	12058
2014	7	7	-	8386
2013	3	1	2	866
Total	40	34	6	45422

The pie chart in Figure1 illustrates the top Publishers based on the number of APC payments of the Open Access Author Fund between 2013 and 2016. Looking at the chart, we can see that BioMed Central captures a substantial part with 47%, Frontiers

12%, Hindawi 11%, Copernicus Publications and Public library of Science (PLoS) 9%, MDPI AG 6% and Dove Medical Press and BMJ 3% of the total APCs payments.

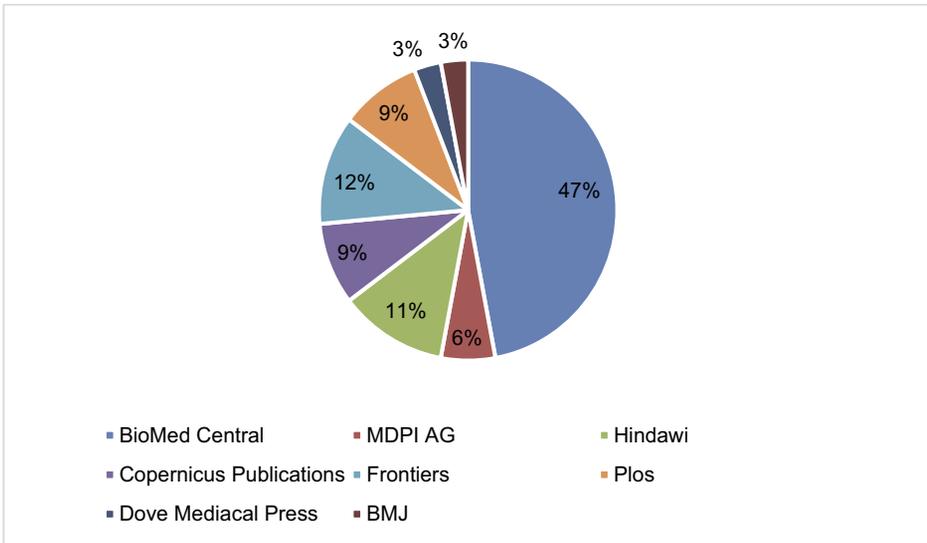


Figure 1. Top Publishers per year, 2013-2016

We can see clearly in figure 2 that the medical sciences have a higher publication number of OA journals. An important outcome is that the funding concerns are mainly health sciences departments with more than 70% of the total articles supported. As Teplitzky and Phillips said, “Nariani and Fernandez surveyed researchers at York University whose author-processing charges had been subsidized by institutional memberships in BMC, PLoS and Hindawi [16].

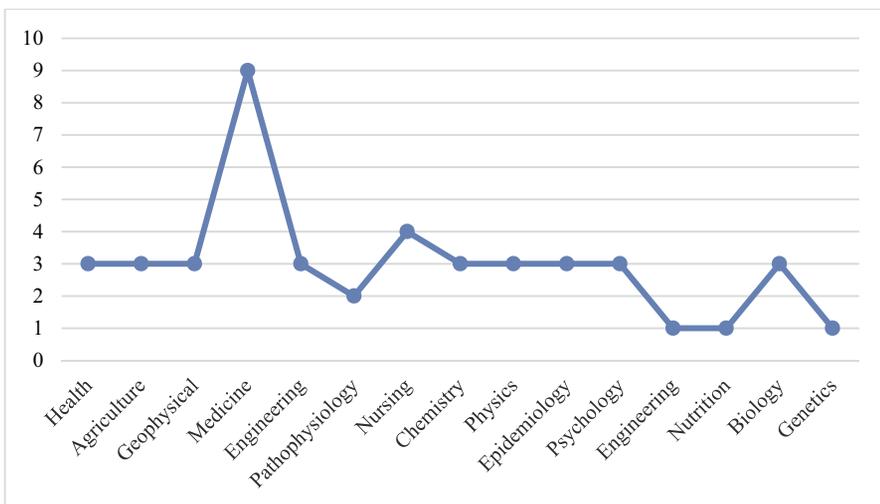


Figure 2. Publications in different subject areas

Table 2 gives information about the impact factor of Open Access journals. We can see that some OA journals have a high impact factor compared to subscription based journals. According to Bjork and Solomon's [17] research, the OA journals that fund publishing with article processing charges (APCs) are on average cited more than other OA journals. In medicine and health, OA journals funded in the last ten years receive about as many citations as subscription journals launched during the same period.

**Table 2.** Open Access journal impact factor

<b>Journal</b>	<b>Impact Factor</b>
Atmospheric Chemistry and Physics	5.114
BMC Plant Biology	4.085
BMC Public Health	2.264
Remote Sensing	3.036
BMC Infectious Diseases	2.825
BMC Psychiatry	2.891
Evidence Based Complementary and Alternative Medicine	1.931

## 8. The APC Model

Fully OA Publishers, such as Biomed Central (BMC) and PLoS, have been using APCs as their Prime Business model since 2002 [18]. In our case, BMC capture a substantial part with 50%, Hindawi 12.5%, Frontiers 9.5% and Public Library of Science (PLoS) 6.5% of the total APCs. Another important outcome is that the funding concerns mainly health sciences departments with more than 70% of the total articles supported. As Teplitzky and Phillips said, "Nariani and Fernandez surveyed researchers at York University whose author-processing charges had been subsidized by institutional memberships in BMC, PLoS and Hindawi [19, 20]. Their qualitative study showed that author funding can provide an incentive for researchers to publish in OA journals, but their cohort and selection of journals was limited". These findings have led us to think that we need to find another way to support OA which must be more flexible and cover more journals in various research areas" where a publisher offers an "author-pays" model for Open Access and simultaneously sells the end product to libraries with a subscription. Stephen Pinfield wrote, "commercial publishers such as Elsevier and Wiley, which dominate the subscription market, are now also capturing a substantial part of the OA APC market" [21]. We are troubled by this and we are not sure if the hybrid model is the right way for OA, especially if we take into consideration Björk and Solomon's findings that APC costs for "hybrid OA" journals are significantly more and provide further evidence to support their argument that the "hybrid market" may not be operating effectively in terms of price sensitivity [22].

However, the CUT Library aims to adopt "offsetting" agreements with hybrid publishers for fair prices in hybrid journals, so that the phenomenon of double dipping is avoided. Double dipping is the term used to describe a publisher gaining from two

income streams, APCs and subscriptions, in a way that its overall income from the same customer rises [20]. Publishers have also recognized the need to review their subscription prices. Several publishers have given general “offsetting” undertakings of this sort [23]. Elsevier and Dutch universities have agreed on a new subscription deal which will begin transitions to Open Access publishing. The Association of Universities in the Netherlands (VSNU) has also made the unprecedented demand that Elsevier and other publishers must allow their academics to make their papers Open Access at no extra charge [24].

The following chart (Figure 3) presents a research carried out under the European program PASTEUR, which shows that many institutions enhance the Open Access fund from their own fund or allow APCs to be paid from a research grant.

APC funding provision

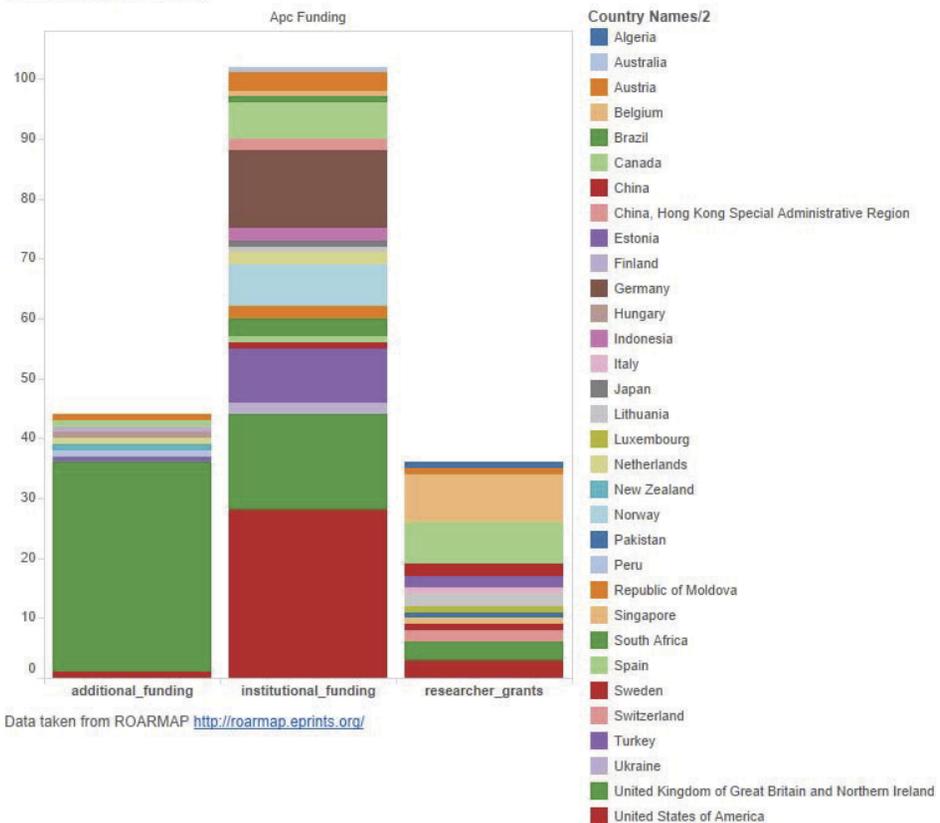


Figure 3. APC funding provisions (taken from: ROARMAP <http://roarmap.eprints.org/>)

On the other hand, the Research Councils UK’s (RCUK) Open Access policy does not allow cost for Open Access publication fees in research applications, and funding for Open Access is raised by the RCUK through a block grant awarded directly to research organizations.

## 9. Conclusions

The CUT Library will continue to play a dynamic role in the development of the Open Access framework by supporting researchers, Open Access journals and publishers that provide full Open Access. Moreover, the CUT Library aims to make agreements with publishers, in order to motivate authors to publish their work on an Open Access basis. The agreements with different Open Access publishers are essential to the CUT Library for increasing Open Access publications of the university in wide research areas. More and more stakeholders, like the European Union, state that research organizations and universities support Open Access. The new funding supported by the university budget will be available for financing research output published in full Open Access journals, even if the publishers are not members of OASPA. Furthermore, research institutions must negotiate with publishers and find a solution to avoid double dipping.

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