

DOCTORAL EDUCATION Bulletin



ON THE CUTTING EDGE OF RESEARCH: THE OPEN ACCESS CHALLENGE

OPEN ACCESS FOR RESEARCH PUBLICATIONS AND DATA

CHALLENGES AND DILEMMAS FOR EARLY-STAGE RESEARCHERS

STRATEGIC INSIGHTS FOR SENIOR MANAGEMENT

EDITORIAL

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In recent years, Europe has become an active promoter of innovation. The creation of proper ecosystems and platforms is a priority to enhance the circulation of required dynamic knowledge to face the current challenges. The 2016 Global Innovation Index¹ shows that eight of the top ten of the world's most innovative economies are European, with Switzerland having held the number one position for the last six years.

New models for innovation have been widely discussed in Europe. It is of particular interest to observe the latest trends whereby innovation is basically oriented to benefit from the potential of scientific researchers and their work. The main questions here are: how is it possible to involve them in the creation of innovation ecosystems and what is required to support this?

At the level of the European Union, the Directorate General for Research and Innovation released its vision for Europe as the "Three Os": Open Innovation, Open Science, Open to the world.² In this scenario it is important that as Open Access (OA) and Open Science help increase innovation ventures, scientific knowledge and research results are transferred into tangible benefits for society.

The need for researchers to be prepared for the transition to Open Science at all levels is clear: from their work at universities and research institutes, the way they report and share their outcomes, the establishment of international collaborations to improve competitiveness and the follow-up to their findings to identify potential opportunities for creating innovative products and services.

During this transition, a key element is how to face the challenges derived from OA. Researchers are nowadays encouraged to publish their results and data with the aim to be accessible to the society

at large. This brings into focus the clear technological challenge for data storage and data safety. The digital cloud also comes with a series of important issues that have a direct impact on researchers at all levels, for instance, intellectual property and reliability of scientific results, among others.

In this special issue of the *Doctoral Education Bulletin*, we present a series of four articles. These contributions offer the reader a collection of expert opinions. It includes a discussion on the challenges and benefits of OA in order to understand the key elements of this topic. Additionally, practical advice on OA is provided, with a particular focus on research data. Moreover, the future and consolidation of OA is put into perspective.

EUA has been actively working on supporting universities to smooth their transition to Open Science. In this issue of the Bulletin we present an overview of the activities of the EUA's Expert Group on Science 2.0/Open Science. We also take the opportunity to thank Thomas Jørgensen for his eight years as Head of the EUA-CDE, inviting him to share with us his opinion on the mid-term review of Horizon 2020 with a special focus on the relevance for doctoral education. We wish Thomas success in his new role as Senior Policy Coordinator at EUA.

This issue also provides a report on last year's EUA-CDE Annual Meeting, a look ahead to the next Annual Meeting in 2017 and a welcome to the new faces of the EUA-CDE Steering Committee and EUA-CDE Secretariat, including the newly appointed EUA-CDE Steering Committee Chair, Luke Georghiou, Vice-President for Research and Innovation of the University of Manchester, United Kingdom.

Finally, we would like to highlight that this special issue is freely available on the website of EUA and EUA-CDE. We wish you an informative and enjoyable reading.

¹ The Global Innovation Index is produced by the World Intellectual Property Organization (WIPO), Cornell University and INSEAD: <https://www.weforum.org/agenda/2016/08/these-are-the-world-s-most-innovative-economies/>

² European Commission. DG for Research and Innovation. Publication released in May 2016: <https://ec.europa.eu/research/openinnovation/index.cfm>

CHALLENGES AND POTENTIAL BENEFITS OF OPEN ACCESS PUBLICATIONS FOR EARLY-STAGE RESEARCHERS

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Academics interested in the potential benefits of publishing their research in Open Access (OA) journals are often confronted with many challenges. For example, they regularly receive spam emails from “predatory” journals pretending to be serious scholarly outlets, and promising

immediate publication against the payment of fee. Due to the rapid emergence of such “predatory” publishers in recent years, together with their bad press, the essentially healthy phenomenon of OA has undeservedly acquired a slightly tainted image. In this article, I try to give a short overview of what Open Access publishing is all about and conclude by providing advice to early-stage researchers navigating between its benefits and challenges.

THE STATE OF PLAY FOR OA PUBLISHING

The internet has revolutionised scientific publishing, notably enabling fundamental changes in the revenue and business models for scholarly publishing. One such change is commonly known as the OA paradigm, which started to emerge in the early 1990s as individuals and groups of academics realised the potential of the web.

There are a number of definitions of OA but the basic idea is very simple; to make scientific publications freely available on the web for anybody with internet access. OA as a concept applies equally well to all sorts of scientific material: monographs, conference papers, theses, and not least importantly, data. This article is however concerned primarily with scientific peer-reviewed journal literature and specific circumstances surrounding it.

In this regard, the main distinction made in literature is between Gold OA, namely articles published as OA by the publisher, and Green OA, meaning manuscript copies of published articles, which have been self-archived by the authors or third parties.

There are two flavours of OA, *gratis* and *libre*. *Gratis* means that there are no access or price barriers to read an article. *Libre* also removes most permission barriers for reusing the text, text mining, etc. This is usually accomplished by publishing an OA article using a Creative Commons licence,³ which retains the copyright with the author but grants extensive rights, provided the source is attributed. It is important to note that green manuscript copies usually only provide free access, not *libre* access, since the copyright usually still resides with the publisher of the official versions.

There are also other aspects of open accessibility, in particular the time limit between the original publication and the OA availability. An important group of around 500 high-quality subscription journals make the electronic version available within a limit of one year and many repository copies are made available with a limit, either due to the authors or embargo periods imposed by publishers. While delayed OA is not as valuable as immediate OA, it is clearly much better than restricted access behind pay walls.

The first OA journals had small or non-existent budgets and were published by volunteers on self-made software platforms, mostly hosted on the editors’ university servers. In parallel, scientists in some areas with long traditions of disseminating working papers and preprints of manuscripts, set up repositories where authors could upload manuscript copies. Such repositories were particularly popular in physics (arXiv) and economics (Repec). Repository-based OA is usually called green OA. The major vehicles for posting manuscript versions are nowadays the institutional repositories that almost all major universities host, and in biomedicine the US government portal PMC.

Among full OA journals three distinct groups can be seen. Firstly, there are journals that charge neither authors nor readers. These journals are electronic only and are often found in the social sciences and humanities. The majority have been founded by OA enthusiasts.

The second category consists of predominantly society or university published journals that often have a long history of paper publishing and which when they started to also publish a parallel electronic version, decided to make it OA. Such journals are very common outside the main Anglo-Saxon countries, often subsidised by research funding organisations and supported by nationally funded portals such as Scielo in Latin America.

The third category consists of OA journals published by commercial or, in some cases, non-commercial (i.e. PLoS) or society publishers that charge so-called article processing fees (APCs). Unfortunately, this category also includes spam producing journals published by presumed predatory journals. The high-quality journals (often indexed by ISI) typically charge APCs in the range of 1 000-3 000 USD, and predatory journals usually charge much less.

The danger of predatory publishers has perhaps been overstated. Although almost 10 000 journals from such

³ <https://creativecommons.org/>



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publishers might produce close to half a million articles per year, barely any of these journals are indexed in the Web of Science and few in the index of OA journals, DOAJ. Also they are usually not included in national indexes of quality ranked scholarly journals, such as may exist, for instance in Finland and Norway. Most authors in such journals come from developing countries, in particular Africa and Asia.

Hybrid OA journals are an interesting new development. These are traditional subscription journals which offer authors the possibility to open up their individual articles against payment of usually 3 000 USD. That may sound very expensive, but the most recent development is that large research funders (i.e. the Wellcome Trust and RCUK in the UK) will pay the charges from earmarked funds. In addition, some publishers, notably Springer, are starting to offer deals for countries which combine subscription access with automatic hybrid OA for corresponding authors. Such deals are already in operation in the Netherlands, UK, Austria and Sweden.

THE POTENTIAL BENEFITS OF OA PUBLISHING

What are the benefits of OA? The obvious one is increased readership and impact. Clearly the level of increase depends greatly on the topic and type of article. The undersigned has, for example, published articles on OA publishing in top medical OA journals which received over 10 000 downloads in the first week alone. This would be totally unheard of in classical subscription journals in information science, which topic-wise would have been more suitable. Another benefit is the speed from submission to publishing. Most OA journals do not produce regular issues but publish articles directly once they have been accepted and copy-edited. For my mostly highly-cited OA articles it has usually only taken around three months from submission to publishing. In comparison with some traditional journals, I have had articles that have taken up to three years before being published.

The important thing to note is nevertheless that authors no longer face an “either/or” choice between a traditional journal of higher prestige and an OA journal. They can continue

publishing in the journals that are best for them academically, but they can obtain some of the benefits from OA via posting a green OA copy or via the hybrid route.

ADVICE TO EARLY-STAGE RESEARCHERS ON CHALLENGES TO OA PUBLISHING

For a PhD student or young postdoc trying to decide where to publish their manuscript here is some advice. Publish in the good journals in your domain, but also journals where you have a reasonable chance of acceptance. Your supervisors or older colleagues can provide good advice. Only after you have more or less decided on a journal check out your OA options. In a few cases and in some areas, OA journals are actually in the shortlist of good and prestigious journals. If the journal of your choice is a subscription journal there are nevertheless several ways in which you can enjoy the benefits of OA. Firstly, the journal can offer delayed OA. Secondly, around 10 000 journals from major publishers offer the costly hybrid OA option. But in many cases your research funder or your national library consortium might already be paying for this.

If you cannot get the original published version in OA, then upload the manuscript version which was accepted for publishing (before copy editing) to a suitable repository. For biomedicine, this would be primarily PMC and for other fields your university’s repository. You might not be able to do that before an embargo period which, for most publishers and journals, tends to be 12 months (the website, SHERPA Romeo,⁴ can be checked out for this). Many researchers also post copies in academic social networks such as ResearchGate but often this is illegal.

Do not submit to predatory journals. If you receive an email from a journal asking you to submit a manuscript, do not consider it, and especially if the journal is called something along the lines of “International Journal of Basic and Applied Science”. It is extremely rare for serious academic journals to solicit papers by bulk email, perhaps with the exception of special issues, and even then they would only be sent to members of closed email lists.

⁴ <http://www.sherpa.ac.uk/>

STRATEGIC CHALLENGES AND POTENTIAL BENEFITS OF OPEN ACCESS PUBLISHING – LESSONS FOR SENIOR MANAGEMENT

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The objective of the Open Science movement is to allow everyone to access freely the results of all (fully or partly) publicly-funded research in all disciplines, country and year, including raw and processed data.

These results are currently published in peer-reviewed journals owned by publishing houses, just as they have been for over three centuries. Researchers and their institutions must buy, at ever increasing prices, the scientific literature they contribute to produce, often depending again on public funding. From a global perspective, public funds are seen as being used twice for each publication.

The current system makes less and less sense with the development of the internet. Many researchers are willing to recover control of their articles and their research data and to make them available freely. It should also be stressed that researchers review their peers' papers on a voluntary basis. With this in mind, new technical and economic models are being designed that will prevail sooner or later.

The first and currently most advanced innovation of Open Science is Open Access (OA), which consists ideally of an immediate access for everyone to publications, free of financial and technical barriers (for a recent review on the money-saving aspects of OA.⁵

There are several ways for researchers to achieve OA, among which the most common are:

- The **"Gold Road"** when a publication is online immediately and at no cost, neither for the author nor for the reader, regardless of the publishing procedure; it should be considered as "pure Gold OA"
- The **"Green Road"** when, in a traditional publication format, the author makes his/her "paper" available online in manuscript form, immediately after the publisher's acceptance of the article for publication.

Other mechanisms have also been proposed, all of them being variations on the 'Gold OA' theme.

- The **"APC-Gold OA"** model (APC referring to article processing charges) was developed by publishers when they realised that they could not resist the OA movement much longer. The idea was that if publishers were to prevent researchers from communicating freely among themselves, they first had to adapt to OA with a profitable option. This meant proposing their support in the dissemination of their work, which scientists sometimes and strangely consider as a chore, and therefore tempting the researcher into profiting from the journal's prestige and pretending that the publisher alone could guarantee the quality of the peer review process. In this perspective, they require the author to pay APCs, which are usually proportional to the length of the article. Since APCs are now steadily increasing in value according to the prestige of the journal (evaluated by their impact, i.e. the average number of citations per article during the previous two years), there is a growing demand by universities to respect a rule of "Fair Gold", in other words "reasonable" APC rates.
- The **"Hybrid OA"** model is an intermediary scheme developed by some publishers to present OA as a "choice": the publication is processed in the traditional way but, if the author so wishes,



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⁵ <https://mpr.ub.uni-muenchen.de/74970/>

it can be made available immediately online at the author's expense. Thus the same article benefits the publisher twice, a scheme often referred to as "double dipping".

Is "Pure Gold OA" utopic?

Although the economic model appears to be unrealistic at first glance (unless the whole process is operated by researchers as part of their job), several publishers have developed it successfully. They have built business models based either on funding organisations or on a "freemium" model where free Gold OA is offered but premium options are available such as reviews, commentaries, news, etc. The latter solution is definitely less profitable but it provides a real service, with no one being forced to buy it and gain access to the original publications. The freemium model appears today as the most promising strategy for new initiatives and for publishers' reconversion.

HOW SHOULD UNIVERSITY MANAGEMENT BE PREPARED TO FACE THE CHALLENGES OF OA?

The first and most important investment for universities is in the setting-up of an Institutional Repository (IR). If it were not for OA, the IR would still be an indispensable tool for university managers providing them with full information on their institution's research production, needed for good management practice.

The IR is also, at the best of its technological development, a very efficient tool to promote the university's researchers worldwide. It increases their visibility, as confirmed by the number of visits, downloads and, most significantly, citations which do increase by 20% to 100% according to several studies.

However, setting up an IR is barely useful if it does not include all the institutional production.

Recent European statistics⁶ demonstrate that an IR, where depositing is not mandatory contains on average, 7% of the institutional production. If a mandate makes the deposit obligatory it reaches 17%. However, when the mandate is enforced by an internal rule stating that only the articles in the IR are eligible for evaluation (grants, promotions or any other institutional support), it may climb up to an average of 87%.

Such a strong mandate is generally referred to internationally as "the Liège Model", named after the Belgian university where it was pioneered but very few institutions already use it to the full extent.⁷

Visibility is an outstanding goal and it may suffice, but it is easy to understand that on a global scale, in order to free universities from the heavy burden of the publication costs, it is of utmost importance for the progress of science that all scholarly production becomes ultimately accessible without financial or technical restrictions.

Green OA is by far the easiest and surest way to reach this goal. Mandates at the national governmental level are very helpful to

support institutional resolutions towards researchers from the inside and publishers on the outside, and these should be suggested or encouraged. University authorities should also press their governments to modify laws in order to prevent scholars from abandoning their author and property rights obtained with the support of public funding to private publishers.

Publicly-run repositories should always be preferred to private ones, which promise sustainable preservation but which at times have proven unreliable or fragile in the face of commercial acquisitions. There are public repositories at regional, national, thematic or disciplinary levels and scholars should also be able to deposit there if they wish, although not at the expense of their own IR. Depositing in different places is perfectly acceptable and does no harm: repetitiveness is beneficial for visibility and has a positive effect on citations. However, multiple deposits should not add to the workload of the researcher who should file only once. Therefore, interoperability between repositories should be designed. This requires reinforcement of data exchange standards⁸ between repositories to facilitate collection of data. Large search engines such as BASE,⁹ developed by the University of Bielefeld should make data mining possible.

To facilitate all electronic handling of bibliographies, researchers should be encouraged to apply for a unique ORCID identification.¹⁰ This would definitively avoid confusion among homonymous authors.

According to the "stick and carrot" principle, mandate should not be the sole incentive for scholars to deposit their manuscripts in the IR: a user-friendly interface must be developed which provides customised and permanently updated lists of publications, easy imports from external databases, full legal and technical online help, a call centre for permanent support, a convivial deposit form with contextual help, regular training and information sessions, statistics of visits, downloads and citations (cleaned for spiders and bots) and a permanent surveillance of the referencing by external search engines with an active policy of improved referencing. All this contributes to a considerable professional evolution of the librarians' competencies, skills and training.

In spite of all these constraints, the cost of setting up a performing IR remains low compared to the subscription prices or the future APC Gold prices. Green OA is definitely a transitional solution but nowadays it contributes to the coming evolution of OA while retaining characteristics required by scholars since they can still publish in their preferred journals. In the long run, Green OA will bring the traditional publishing model to an end while Gold OA is being built up as an alternative for publishers. University authorities should ensure new financial drift based on prestige is not encouraged. As long as evaluation remains linked to publishers' prestige, there is indeed little hope that the whole system will evolve towards a more objective and fair reward mechanism. Meanwhile, Green OA fills the gap.

Investment in highly-skilled librarians also prepares our universities to what science communication will definitely become in the future: it should be considered as providing safe and careful advice.

⁶ Swan, A., Gargouri, Y., Hunt, M., & Harnad, S. (2015). *Working Together to Promote Open Access Policy Alignment in Europe. Work Package 3 report: Open Access Policies. PASTEUR4OA*. Retrieved from: <http://pasteur4oa.eu/sites/pasteur4oa/files/deliverables/PASTEUR4OA%20Work%20Package%203%20Report%20final%2010%20March%202015.pdf>

⁷ OECD (2015). *Making Open Science a Reality. OECD Science, Technology and Industry Policy Papers*, No. 25, OECD Publishing, Paris, p. 76. Retrieved from: <http://dx.doi.org/10.1787/5jrs2f963zs1-en>

⁸ Such as OAI-PMH: <https://www.openarchives.org/OAI/openarchivesprotocol.html>

⁹ <http://mobile.base-search.net/?l=fr>

¹⁰ <http://orcid.org/>

DILEMMAS OF OPEN ACCESS TO RESEARCH DATA

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The breathtaking developments in science, economy and society that are ongoing or yet to come under the broad label of digitisation, will change the way in which research and education are institutionally

structured, operationally organised, and simply done by individual scientists or teams of scientists in a more than disruptive way. What we can already see today is most likely just the beginning and keeping pace will become increasingly difficult. Many issues have been emerging, for example – new kinds of educational institutions popping up such as Massive Open Online Courses (MOOCs), Small Private Online Courses (SPOCs), and other technology-driven teaching formats questioning the established pathways of university education; research going from data-based via data-driven towards data-dominated in many disciplines; research integrity and good scientific practice suffering from new threats while at the same time benefiting from new tools; the publication ecosystem with its traditional publishing houses and their subscription and payment schemes being reshaped, the Open Access (OA) debate being one prominent example; individuals as well as institutions being frequently overcharged in transactions related to these new trends and technologies. This article outlines three unresolved dilemmas confronting researchers who are interested in the potential benefits of OA to research data.

The broad enthusiasm for the idea of “Open Science” has turned OA into a real movement, a philosophy, with many national and European governmental strategies as well as the appearance of non-governmental initiatives. The term OA comprises several different aspects. There is OA to (published) research results, but there is also the free accessibility of the underlying research data, both raw and already processed, which is the core focus of this contribution. And there is “Green OA” (via repositories) vs. “Gold OA” (via journals) which is actually a classification different from the above. Currently, besides a plenitude of technical, organisational, or legal details yet to be clarified (and typically addressed in white papers, surveys, or reports), some unsolved dilemmas for the individual researcher show the complexity of the situation, which is unsatisfactory for many scientists.

Firstly, funding agencies at the European and national levels have introduced more or less mandatory regulations on the reproducibility of research and research

results as well as the (long term) accessibility of the underlying research data – but without pointing to or even providing – appropriate e-infrastructures. Efforts are being made everywhere, but easy-to-use solutions are just not generally available today.

Secondly, as mentioned above, there is an increasing political and societal will for establishing and ensuring OA, while on the other hand many contracts between institutions involved in research collaboration have more and more complex issues as the different partner institutions (including universities) try to secure intellectual property, i.e. more openness is requested from one side, and less openness is being implemented on the other side.

Thirdly, and especially, early access to scientists’ own research results being granted disconcerts researchers at times when this early access is frequently crucial for marking a point in scientific competition, particularly against the background of a number of such points acquired individually being perhaps crucial for obtaining a PhD or a research grant or, for example, for continuing on to the next career step.

While outlining the state of play, we will now examine in detail three dilemmas for OA to research data, focusing on the challenges they bring to academic researchers interested in the potential benefits.

DILEMMA 1 – REQUIREMENTS VS. AVAILABLE SOLUTIONS

When considering the e-infrastructure landscape in Europe, and specifically in Germany (Germany is the example used because the author is most familiar with this country), rather big differences can be detected. While some e-infrastructures are established and rather sophisticated in terms of hardware, software, services, support and acceptance – such as research and educational networks (cf. *GEANT* in Europe and *DFN* in Germany) or high-performance computing

(cf. *PRACE* in Europe and the *Gauss Centre for Supercomputing* as well as the *Gauss Alliance* in Germany) – others are far less developed. This is the case in particular for research data, where comparable structures are basically still missing. Some scientific communities or larger research institutions have introduced their own



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domain-specific or institution-specific solutions, whereas most of the others are way behind, in particular at the so-called “long tail”.

The European Commission has addressed this deficit, for example by installing a *High-Level Expert Group Open Science Cloud*, whose report identifies main challenges such as the complexity of data and data analytics across domains, the fragmentation having led to repetitive and isolated solutions, or the need for decentralised processing capacities to support critically federated and distributed meta-analyses. Similar initiatives can be observed in several European countries. The main idea of a *European Open Science Cloud* comprises three layers: a data layer for the technical infrastructure (storage, etc.), a service layer offering generic services for the management of research data, and a governance layer for defining and implementing domain-specific requirements (e.g. data protection) and functionalities. If OA is to be done seriously, homework must also be done at all three layers.

Looking ahead and assuming this would be accomplished, European and national data policies, together with their requirements concerning reproducibility, accessibility, safety, security, or privacy would be much easier for researchers to fulfil, and a better quality of multi-disciplinary research would become possible, with results based on cross-linking data from completely different disciplines.

Despite the lack of national or European e-infrastructures to store and access research data, there are of course a great deal of activities, but, as mentioned above, primarily domain- or institution-specific. Other developments worth considering are *EUDAT*, a pan-European infrastructure offering services, training, and consultancy in the context of research data, or the *Research Data Alliance (RDA)*, an association of currently more than 3 000 researchers from more than 100 countries aiming at the developing research data infrastructures and fostering their acceptance. On a more technical level, the DFG-funded research project *GeRDI (Generic Research Data Infrastructure)* that has just been launched aims at providing a concept for a research data infrastructure that is as generic as possible, but as open for fulfilling domain-specific requirements as necessary.

For the time being, however, this means that many of the requirements to be fulfilled with respect to data accessibility and so on are the full responsibility of individual researchers, that is to say both supervisors and PhD candidates. They have to check the availability of local services (institutional data repositories and archives) or community-wide services, to use them if available or, if not, find some suitable alternative. That may not be convenient, but it is definitely not the first time that a technological revolution leads to consequences such as the need for new skills for the complete science landscape.

DILEMMA 2 – PROVIDING OPEN ACCESS VS. PROTECTING IP

The OA idea has received much political support, which has resulted in various policies that require, for example, providing

free access to research results and data as part of funding contracts. On the other hand, research institutions and, in particular, universities, have developed institutional strategies with an increasingly entrepreneurial flavour, which often entail a far more protective philosophy on research data and output than applied before: going for patents and protecting intellectual property from their members’ research and the contributions of those to research collaborations. Sending a PhD candidate abroad for up to three months for a research internship (one of the assets of TUM Graduate School) becomes complicated and time-consuming, when the receiving university insists on a research collaboration contract and the legal departments start negotiating on the rights concerning data; “open” sounds different. As PhD candidates, especially from STEM fields, are frequently funded via third-party projects involving the funding party as an additional player, conflicts of interest for supervisors and PhD candidates can often hardly be avoided. It certainly is a task for university boards to develop strategies that are consistent with a generally implemented OA spirit.

DILEMMA 3 – PROVIDING EARLY ACCESS IN A COMPETITION-BASED SYSTEM

While the dilemma described above emerges more from an institutional agenda, conflicts due to an OA philosophy can also arise at the level of the individual researcher and in particular, but by no means limited, to doctoral researchers. An example of this is as our research system becomes more and more competitive, PhD regulations frequently require a number of peer-reviewed high-quality publications prior to the degree being conferred. Following that, such high-quality publications are one of the main necessary conditions for academic promotion, access to competitive public research funds or lucrative research contracts, or for prestigious prizes, and these publications are frequently data-based. Hence, first-level access to relevant data is a kind of key to a pole position for publishing.

This “advantage in competition” is one main (economic) motivation for countries to invest in their universities; for universities to invest in costly equipment; for senior researchers to go to places where such investments are possible; and for graduates to join labs for a PhD with access to state-of-the-art machinery and to the data that machinery can produce as output. It is easy to imagine that there is a great amount of reluctance from this side towards a “too open” OA, since OA appears as a serious threat for that “advantage in competition”. And it is also easy to imagine that this may lead to protective behavioural patterns, such as not providing access to the complete data, or not depicting the complete research story in the papers in order to make it more complicated, which are of course all clear violations of research integrity and good scientific practice. It is the responsibility of all parties to reduce reservations concerning early access to research data and to emphasise that the opportunities outweigh the risks.

On the other hand, OA also requires that researchers who obtain access to data conform to ethical guidelines, such as using data of other groups for an individual's own research, but only as a starting point for the next step, and properly quoting both the source and the meta-data. Data poaching may appear as harvesting low-hanging fruits but it is, nevertheless, unethical behaviour that cannot be accepted. Dealing with research data in OA must be accompanied by an extended training in, discussion of, and commitment to research integrity and good scientific practice, including incidentally, a very basic understanding of the technological framework. It also shows the need for regulatory frameworks at all levels – universities, scientific communities, funding agencies, and legislation.

CONCLUSION

The three dilemmas described above must not be misunderstood as counter-arguments against OA. Rather, they show that signing declarations, introducing regulations, and shouting “hurray” is not enough. Of course, there is no alternative to OA, there is no science but an open one. OA has huge potential and fits much better in the digital era than the traditional models. The science ecosystem must be transformed at all levels, including scientists' own behavioural patterns. Only then the roadblocks will disappear – for researchers in all stages of their career.

WHAT ARE THE CHALLENGES OF CONSOLIDATING OPEN ACCESS?

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THE DRIVING FORCE BEHIND OPEN ACCESS

Fifteen years after the first public statements in favour of Open Access in Budapest,¹¹ this movement to transform scientific communication has convinced the academic community and society of its many advantages. It is now consolidated in quantitative terms and is forcing commercial publishers to adapt their business models to Open Access (OA) publication. Several studies have tried to estimate quantitatively the presence of this business model in academic journals. Björk et al.¹² situated the total proportion of open access at 20.4%. Using a similar method, Chen¹³ placed the figure at 37.8% and Eric Archambault et al.¹⁴ at around 50%. They also showed that OA is increasing more quickly in journals than in repositories.

The European Commission is one of the institutions that has most clearly grasped the importance of OA for the development of research and innovation and has promoted the movement with the greatest energy, bringing on board universities, research centres and government bodies in general. Proof of this is the OA Pilot programme that was implemented in FP7¹⁵ (in seven knowledge areas) and consolidated in the Horizon 2020 Programme, when it became a requirement in all areas.

The European University Association (EUA) has also played an active role in this field, and has published various explanations and recommendations on OA for member universities.¹⁶ More recently, EUA presented a document entitled “EUA Roadmap on Open Access to Research Publications”,¹⁷ which describes the Association's views on OA, its goals for the next three years, and the resulting actions.

After open publications, the demand for openness extended to research data. The League of European Research Universities was at the forefront of the open research data movement,¹⁸ and in the Horizon 2020 Programme a new pilot plan was started to open underlying data in research studies.

Finally, we can see how involved the institutions are with these principles in the declaration by the Netherlands Presidency of the Council of the European Union,¹⁹ in which the year 2020 was set as the deadline for making all European scientific publications available in OA, and a very clear commitment was made to open research data.

A multi-actor approach was formulated to reach two important pan-European goals for 2020:

Full OA for all scientific publications. This requires leadership and can be accelerated through new publishing models and compliance with set standards.

¹¹ Available here: <http://www.budapestopenaccessinitiative.org/>

¹² Björk, B-C et al. (2010). Open access to the scientific journal literature: situation 2009. *PLoS ONE*, 5, 6.

¹³ Chen, X. (2014). Open access in 2013: reaching the 50% milestone. *Serials Review*, 40:1, 21-27.

¹⁴ Archambault, Eric, Amyot, D., Deschamps, P., Nicol, A., Rebout, L., Roberge, G. (2013). *Proportion of open access peer-reviewed papers at the European and world levels–2004-2011*. Brussels: European Commission, 2013. Retrieved from: http://www.science-metrix.com/pdf/SM_EC_OA_Availability_2004-2011.pdf

¹⁵ http://ec.europa.eu/research/science-society/document_library/pdf_06/open-access-pilot_en.pdf

¹⁶ EUA (2015). *EUA open access checklist for universities*. Retrieved from: http://www.eua.be/Libraries/publications-homepage-list/Open_access_report_v3

¹⁷ EUA (2016). *EUA roadmap on open access to research publications*. Retrieved from: <http://www.eua.be/Libraries/publications-homepage-list/eua-roadmap-on-open-access-to-research-publications.pdf?sfvrsn=8>

¹⁸ LERU (2013). *LERU roadmap for research data*, advice paper, n. 14. Retrieved from: http://www.leru.org/files/publications/AP14_LERU_Roadmap_for_Research_data_final.pdf

¹⁹ <https://english.eu2016.nl/documents/reports/2016/04/04/amsterdam-call-for-action-on-open-science>

A fundamentally new approach towards optimal reuse of research data. Data sharing and stewardship is the default approach for all publicly-funded research. This requires definitions, standards and infrastructures.²⁰

The overall framework that includes both publications and research data is called Open Science. In this framework, the principles of openness and maximum dissemination are applied to all stages and processes of research.

WHICH POLICY SHOULD BE PROMOTED?

To reach a point where all publications are available in free and OA, the Budapest Declaration established two paths: the Gold Road (publication in OA journals) and the Green Road (archiving documents in repositories). It was clear that both ways were complementary whilst not all journals were OA.

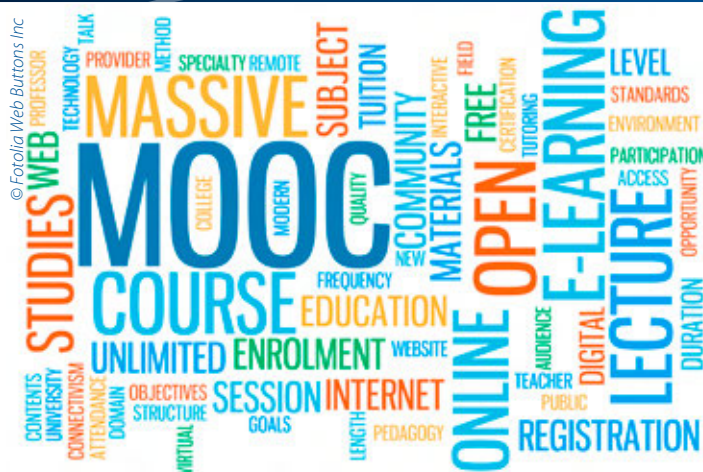
Since the publication of the Finch Report,²¹ the United Kingdom has developed a policy that prioritises the golden road. This may be because the country has a very strong publishing industry that facilitates its restructuring. However, the approach has been criticised because authors are obliged to cover the costs of publication (and do not always have the research funds available for this), and because it does not take into account the function that repositories still have or academic documents that are not strictly papers.

Therefore, prioritisation of the golden road (cost for payment of articles) is not a suitable policy in countries or areas of knowledge (particularly the humanities and the social sciences) that have few economic resources for research. Consequently, most international institutions like, for example, UNESCO-COAR,²² and the main European research programmes, and EUA support the maintenance of both pathways.

SOME AREAS OF ACTION

Now that the general framework and policies have been defined, we can move on to consider and analyse everyday problems relating to the introduction of OA that are encountered by authors, university managers and research funding agencies. We refer to three issues in particular.

Lack of support and advice for authors. Recent author surveys by EUA²³ and others²⁴ revealed concerns about the maintenance of



authors' rights when papers are archived in repositories. Authors also stated that they lacked time to describe and add their publications or research data in repositories.

Currently, academic libraries are a crucial element in the support of research and have helped to extend and consolidate the new model of publication and repositories.

Professionals in academic libraries have been trained to carry out these functions and could help to resolve the authors' problems.²⁵

Payment of article processing charges (APC). As mentioned above, many scientific journals require authors to pay publishing costs. This requirement could affect certain disciplines that have little research funding and certain countries (especially in central and southern Europe). Universities should establish methods of economic support for these subject areas and further strengthen the maintenance and use of repositories.

Monitoring compliance. Policies to promote OA have been introduced by funding agencies, universities and government bodies (the Science Act approved by the Spanish government in 2011 is one example). In many cases, provisions require that the results of research undertaken with public funds should be OA. But which mechanisms have been established to ensure that this is the case? Studies are beginning to analyse the degree of compliance in a country²⁶ or in a specific call for funding. However, there are still no general mechanisms that systematically review compliance with regulations. This is another of the weak points in the chain of support for OA.

FINAL CONSIDERATIONS

As we have seen, universities are highly committed to OA. The advantages of OA to knowledge dissemination and knowledge transfer are in full harmony with universities' initial objectives. However, despite the new model's positive quantitative results, there are a set of problems that must be tackled to achieve the maximum involvement of all researchers.

We should prioritise training on the OA model and open science habits for doctoral students – the researchers of the future. In my opinion, this is an area that should be considered as a general competence in their education.²⁷

²⁰ <https://english.eu2016.nl/documents/reports/2016/04/04/amsterdam-call-for-action-on-open-science>

²¹ <https://www.acu.ac.uk/research-information-network/finch-report>

²² UNESCO-COAR (2016). Joint COAR – UNESCO Statement on Open Access. Retrieved from: http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/news/coar_unesco_oa_statement.pdf

²³ http://www.eua.be/Libraries/publications-homepage-list/Open_access_report_v3

²⁴ <http://www.tandf.co.uk/journals/explore/open-access-survey-june2014.pdf>

²⁵ In the EUA survey, library professionals indicated that they had good knowledge of the right of use of scientific publication in 67.9% of cases (these figures stood at 25.5% in the case of institutional leaders or 9.4% in the case of researchers).

²⁶ Jubb, M. (2015). *Monitoring the Transition to Open Access: A report for the Universities UK Open Access Co-ordination Group*. Retrieved from: <https://www.acu.ac.uk/research-information-network/monitoring-transition-to-open-access>

²⁷ Further reading by the same author: Abadal, E. (2012). *Acceso abierto a la ciencia*. Barcelona: UOC. Retrieved from: <http://diposit.ub.edu/dspace/handle/2445/24542> and Abadal, E. (2013). Gold or green: the debate on Open Access policies. *International Microbiology*, 16, 3, pp. 199-203. Retrieved from: <http://revistes.iec.cat/index.php/IM/article/viewFile/74112/73866>

EUA'S EXPERT GROUP ON SCIENCE 2.0/OPEN SCIENCE IS SUPPORTING EUROPEAN UNIVERSITIES IN THE TRANSITION TO OPEN SCIENCE

Open Science is critically changing the way research is being conducted, accessed and utilised both by scientists and society at large. The rapid development of Open Science facilitated through IT development is generating new and alternative ways for scientists to perform, publish and disseminate their research. Moreover, Open Science looks set to change the whole research landscape, and its implications are indubitably becoming more tangible for researchers, university leaders and administration, research funders, learned societies, scientific publishers and policy makers at national, European and global levels.



researchers across Europe. The first of these initiatives was the publication of the EUA OA Roadmap for Research Publications³⁴ in February 2016, which was intended as a contribution to facilitate universities' transition towards an innovative, fair and sustainable publishing system.

In line with its OA Roadmap, EUA is convinced that universities and scientists should have adequate and cost-effective platforms for collaborating, disseminating and using scientific publications openly, especially in the framework of publicly-funded research. With

EUA has been following up on the developments in the area of Open Science from an institutional perspective since 2007. In early 2015, with a view to increasing the support for institutions across the wide range of issues related to the EU Digital Agenda,²⁸ the EUA Council set up the Expert Group on "Science 2.0/Open Science"²⁹ in order to develop actions in the framework of the 2015 EUA Antwerp Declaration,³⁰ which underlined the importance for universities of pursuing the opportunities offered by rapid technological change in both research and teaching, based on the principles of scholarly sharing and academic collaboration.

The work of the Expert Group is grounded in EUA's previous activities, namely the recommendations on Open Access (OA) (2008),³¹ and the Task Force on OA (2012-2015) which worked towards the briefing paper on OA to research publications (2014),³² EUA's OA checklist for universities (2015)³³ and the annual Institutional OA survey (since 2014). The Expert Group works in close collaboration with EUA's national rectors' conferences (NRCs) and university members. Its main objective is to support the European university sector in moving smoothly towards Open Science. The group focuses on a broad range of issues related to Open Science, such as OA to research publications and data; research assessment and career development; quality of publications and new publishing models; text and data mining (TDM), copyright and data protection.

The activities of EUA and its Expert Group revolve around issuing recommendations and guidelines, supporting institutions in negotiation processes with scientific publishers and making efforts to accelerate the shift towards a more open scientific system. In doing so, the progress of the transition will be closely monitored in order to ensure that its benefits extend to all institutions and

the developments in Open Science and particularly in OA, new ways of producing, accessing, collecting, disseminating, and using research outcomes are constantly emerging. These trends call for changes in traditional publishing systems which can lead to improved scholarly communication systems.

Regarding research publications, EUA aims to contribute to move towards a publishing system that is simultaneously fair and transparent for all parties involved. EUA is committed to working towards a system that seeks to achieve a balance of realistic costs and benefits shared between all stakeholders, considering that scientists simultaneously have the critical roles of content providers and peer reviewers of research publications. The support of governments and funding agencies is crucial in this context. As the movement of Open Science is gaining momentum globally at political, institutional and scientific levels, it is now time to move towards a more open and sustainable scientific ecosystem.

With its unique views on the university community, EUA has supported a number of important initiatives relative to Open Science and OA, namely the Max Planck Digital Library Expression of Interest³⁵ on "Large-scale implementation of OA to Scholarly Journals", the San Francisco Declaration on Research Assessment (DORA) and the Amsterdam Call for Action³⁶ on Open Science promoted by the EU Dutch Presidency.

Being an active and by far the largest stakeholder for universities and NRCs in Europe for more than a decade, EUA considers Open Science to be of utmost importance to further enhance the competitiveness and attractiveness of the European university sector. EUA and its Expert Group look forward to helping its membership in the transition towards Open Science and to continuing the dialogue with all relevant stakeholders, policy makers and politicians.

²⁸ <https://ec.europa.eu/digital-single-market/>

²⁹ <http://www.eua.be/policy-representation/research-innovation-policy/science-2-0-open-science>

³⁰ http://eua.be/Libraries/research/antwerp-declaration-21-05-2015_final.pdf

³¹ http://www.eua.be/Libraries/research/Recommendations_Open_Access_adopted_by_the_EUA_Council_on_26th_of_March_2008_final_1.pdf?sfvrsn=0

³² http://www.eua.be/Libraries/publication/OA_Briefing_Paper_Final.pdf?sfvrsn=2

³³ http://www.eua.be/Libraries/publications-homepage-list/Open_access_report_v3.pdf?sfvrsn=4

³⁴ <http://eua.be/Libraries/publications-homepage-list/eua-roadmap-on-open-access-to-research-publications.pdf>

³⁵ <http://http://www.eua.be/Libraries/press/press-release-eua-endorses-large-scale-implementation-of-open-access-to-scholarly-journals.pdf?sfvrsn=8>

³⁶ <http://http://www.eua.be/Libraries/press/eua-endorses-amsterdam-call-for-action-on-open-science.pdf?sfvrsn=4>

REVIEWING HORIZON 2020 AND THE RELEVANCE FOR DOCTORAL EDUCATION



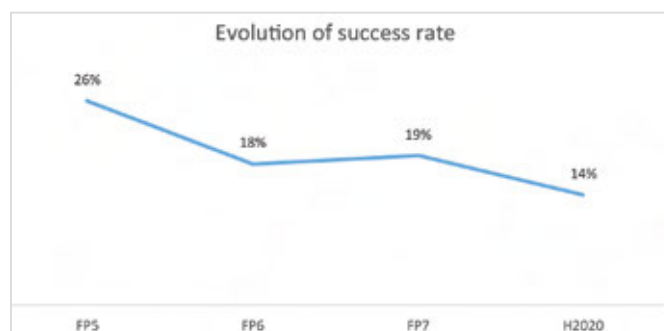
Thomas Jørgensen
 Senior Policy Coordinator
 at the European University Association

Every seven years, roughly halfway through the Multiannual Financial Framework for the EU budget, the EU conducts the mid-term review of its spending. In 2017, there will be extensive consultations about how money is spent and what could be done better. Research funding is very much part of this, and includes European funding for doctoral candidates. The mid-term review is, to a large extent, a rather technical affair about the administration of different programmes. There is little possibility to actually move large sums of money around in the budget, as the framework is more or less fixed for the next four years. Although the technical details can be interesting for those managing European projects on a daily basis, the political stakes are high: the input to the mid-term review can very well be decisive for the way the EU spends its money in the next budget for 2021-2028.

What does this mean directly for doctoral education? There is very little data showing how many doctoral candidates are supported by EU funding. EUA carried out a survey among its members in 2013 that showed that only about 6% of all doctoral candidates are funded through the EU.³⁷ Given the relatively small part of the overall research spending that takes place through the EU's programmes, this is hardly surprising. These programmes do not fund a large number of doctorates, but they set a benchmark for good practice for others.

EUA has already begun its work on the review and on the next Framework Programme (known as FP9 in the Brussels corridors). There has been an extensive consultation resulting in a substantial report and a number of recommendations, "EUA member consultation: A contribution to the Horizon 2020 mid-term review".³⁸ One of the major issues identified in Horizon 2020 has been the low success rates. In FP7, success rates were 19%, which was already low, and they have now gone down to 14%. This is an important matter for many reasons: if projects with very high ratings are not funded, it gives the impression that submitting an application is mostly a lottery, where a good portion of luck is needed to be accepted. This in turn can make some of the best potential applicants turn their backs on the whole programme; they have other and better possibilities elsewhere. It also makes the whole process very inefficient; researchers have to submit a great deal of unsuccessful proposals before a project is accepted.

In order to participate in such a competitive programme, it is clearly good to have sufficient resources in the first place. According to EUA data, those countries that have good national funding are also the ones doing relatively well in Horizon 2020. The idea that researchers can go to the EU to obtain the funds that have been cut at home does not work. If there is not enough money in the national systems, it seems that there is only a limited basis for



competitive applications for Horizon 2020. In order to be successful, it is necessary to look at all the levels of funding, national and European.

When considering doctoral education, this problem has been known to us since before Horizon 2020, when the Marie Skłodowska Curie Initial Training Networks (ITNs) were heavily oversubscribed. The ITNs have received more funding in Horizon 2020. However, funding has decreased at the national level in many countries,³⁹ and this is where the largest part of financing for doctoral candidates comes from. Success rates could well have become worse in many places.

Another recommendation that could be interesting for doctoral education is the call for better synergies between different types of EU funding. According to the 2013 EUA survey, structural funds seem to be the largest source of EU money for doctoral education. Doctoral education was also one of the areas where the European Commission tried to make specific initiatives through the COFUND action, which was among the first that combined the two types of funding.⁴⁰ However, the EUA Report on Horizon 2020 shows that although many universities are aware of the Smart Specialisation Strategies for structural funds, they are often not part of defining these strategies, and they are rarely active in the implementation.⁴¹ Knowing how doctoral programmes contribute to the knowledge economy, and the importance of structural funds in a number of countries, it could be useful for universities to work towards giving this area priority.

Lastly, European funding is well-known for being difficult to manage, and simplification has been a key word for many years. It would seem that some progress has been made in terms of the participant portal and the time to grant, but there is still some way to go when looking, for example, at the possibility of using the institutional accounting methods.

For anyone interested in the fine details, it is recommended to look at the report produced on the basis of the EUA survey. Due to the size of EUA's membership, this is likely to be the broadest and most robust evidence available on Horizon 2020 from a university perspective.

³⁷ EUA ERA Survey 2013, unpublished data

³⁸ <http://www.eua.be/libraries/publications-homepage-list/eua-membership-consultation-2016-a-contribution-to-the-horizon-2020-mid-term-review>

³⁹ See EUA's Public Funding Observatory <http://www.eua.be/activities-services/projects/eua-online-tools/public-funding-observatory-tool.aspx>

⁴⁰ <http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/msca-cofund-2016.html>

⁴¹ See footnote ³⁸ for a link to the publication (Chapter 2.7)

REPORT OF THE NINTH EUA-CDE ANNUAL MEETING ON “DOCTORAL EDUCATION: A DILEMMA OF QUALITY AND QUANTITY?”



Alexandra Bitusikova
 EUA-CDE
 Senior Adviser



Bregt Saenen
 EUA-CDE Policy
 and
 Project Officer

What constitutes “good” doctoral education and research training and what is its purpose in modern society? Focusing on this key question for all stakeholders, from European to national authorities, senior university management to research departments, EUA-CDE held its Ninth Annual Meeting at the Universitat Rovira i Virgili in Tarragona, Spain on 16 and 17 June 2016.⁴² The event brought together 230 participants from 29 countries, offering not only inspirational presentations and discussions, but also excellent opportunities for networking and further collaborations.

As the number of doctoral candidates has continued its steep rise over the past decade and, moreover, doctorate holders find themselves entering increasingly complex societies, there is a clear need to provide adequate doctoral education and research training. While advanced degrees become increasingly relevant

in Europe’s knowledge-based economy, the challenge is to ensure graduates are well prepared for the diverse careers, opportunities and challenges that await them.

The Annual Meeting specifically focused on how European universities are currently investing in improving the quality and societal relevance of doctoral education, while also looking forward to what will be needed in the future. The plenary sessions reflected trends from the perspective of national governments as well as universities. They confirmed the importance of strong institutional structures and their roles in developing doctoral candidates’ skills and competences for employability. Parallel sessions focused on case studies from a number of universities. Two specific sessions were devoted to the “beginners” – professionals who are new to doctoral education management. A master class on “How to set up a doctoral school” attracted the attention of those who are soon to establish a new institutional structure.

At its Annual Meeting, the EUA-CDE report “Doctoral Education – Taking Salzburg Forward. Implementation and new challenges”⁴³ (2016) was launched, with the intention of supporting members in improving the quality and societal relevance of their doctoral education and research training. The document provides guidelines on deepening the implementation of the Salzburg Principles (2005) and Recommendations (2010), which have been central to doctoral education reform as part of the Bologna Process.



The guidelines found in “Taking Salzburg Forward” are the outcomes of “The Shape of Things to Come” consultation initiative, in which EUA-CDE closely collaborated with universities across Europe to identify the main challenges for doctoral education in the coming years. The initiative brought together relevant stakeholders and encouraged them to exchange their views on what is waiting just beyond the horizon, notably articulating the main challenges that doctoral education is facing. As a result, “Taking Salzburg Forward” contains guidelines on developing an ethos of research integrity, the digital challenge and the global vision.

⁴² <http://www.eua.be/activities-services/events/event/2016/06/16/default-calendar/9th-eua-cde-annual-meeting>

⁴³ http://www.eua.be/Libraries/publications-homepage-list/Doctoral-Education_Taking-Salzburg-Forward



*Back row (left to right):
Hans-Joachim Bungartz, Timo Korkeamäki, David Oliva Uribe, Thomas Jørgensen,
Aleksandra Kanjuo-Mrcela, Flavio Canavero and Mossadek Talby*

*Front row (left to right):
Edwin Constable, Luke Georghiou, Martine Rahier, Lesley Wilson and Alexandra Bitusikova*

EUA-CDE WELCOMES NEW FACES

EUA-CDE had the pleasure of welcoming many new faces in the second half of 2016, both in the Steering Committee and in the EUA Secretariat.

Luke Georghiou (University of Manchester, United Kingdom) presided over his first meeting as the new Chair of the Steering Committee on 14 October 2016 in Zurich, Switzerland, welcoming four newly appointed members: Hans-Joachim Bungartz (Technische Universität München, Germany), Aleksandra Kanjuo Mrčela (Univerza v Ljubljani, Slovenia), Timo Korkeamäki (Hanken Svenska handelshögskolan, Finland) and Mossadek Talby (Aix-Marseille Université, France). EUA Vice-President Martine Rahier (Université de Neuchâtel, Switzerland) will also participate in the Steering Committee as an *ex-officio* board member.

Together with the existing members of the Steering Committee, Flavio Canavero (Politecnico di Torino, Italy), Edwin Constable (Universität Basel, Switzerland), Mary McNamara (Dublin Institute of Technology, Ireland) and Murat Özgören (Dokuz Eylül Üniversitesi, Turkey), reflect EUA-CDE's diverse membership in terms of geography and demonstrate Europe's strength in the area of doctoral education, as they come from institutions with a solid research base that have displayed good practices in training early stage researchers.

In addition to the new faces in the Steering Committee, the EUA Secretariat welcomed David Oliva Uribe as the new Head of EUA-CDE in September 2016 and Bregt Saenen as its new Policy and Project Officer in August 2016.



Luke Georghiou is Vice-President for Research and Innovation at the University of Manchester, United Kingdom and Professor of Science and Technology Policy and Management in the Manchester Institute of Innovation Research at the Alliance Manchester Business School. Since 2010 he has been responsible for the university's research strategy and its implementation, doctoral training, and for

business engagement and commercialisation activities, as well as general executive duties. He continues to be active in research and policy advice to governments and businesses with his current work on innovation management, public procurement and innovation and evaluation of the national demonstrator project for Internet of Things (CityVerve). In 2011 he was elected to the Academia Europaea.



Hans-Joachim Bungartz is a Full Professor of Informatics and Mathematics at the Technical University of Munich (TUM), Germany, where he holds the Scientific Computing chair in TUM's Informatics Department. From 2010 to 2013, Bungartz was Dean of Academic Affairs of his department, and since 2013, he has served as both Dean of Informatics and TUM Graduate Dean, heading the TUM Graduate School.

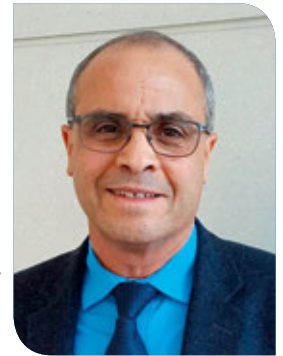


Aleksandra Kanjuo Mrčela is Head of the Doctoral School of the University of Ljubljana (UL), Slovenia since January 2015. She was vice-dean for postgraduate studies at the Faculty of Social Sciences, UL (2007-2011). Kanjuo Mrčela teaches sociology of work and economic sociology at the Faculty of Social Sciences, University of Ljubljana.

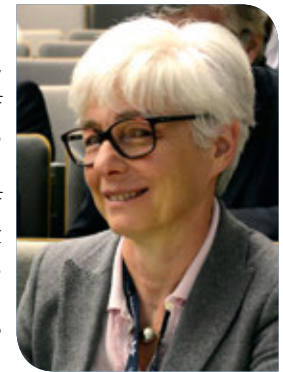


Timo Korkeamäki is Professor of Finance and Dean of Research at Hanken School of Economics in Helsinki, Finland. He received his PhD from the University of South Carolina in 2001. Prior to joining Hanken in 2008, he worked at Gonzaga University in the USA. His areas of expertise include corporate finance, financial markets and financial institutions. His research has been published in the *Journal of Finance*, *Journal of Corporate Finance*, and many other finance journals. Korkeamäki is the chairman

of the Graduate School of Finance, a consortium that organises doctoral courses and workshops for Finnish Business Schools, and he is also the vice chair of the Nordic Finance Network.



Mossadek Talby is Professor of Physics at Aix-Marseille University (AMU), France. Since September 2015 he is Director of the Doctoral College which federates the 12 AMU Doctoral Schools. He is strongly involved in the doctoral education at AMU and from 2012 to 2015 was Director of the Doctoral School of Physics. From 2013 to 2015, he was also "Chargé de mission" to the research Vice-President for relations with AMU research structures.



Martine Rahier was granted a professorship by the Swiss National Science Foundation in 1988 and became a Professor of Entomology and Animal Ecology at the University of Neuchâtel in 1994. She served as rector of the University of Neuchâtel from 2008 to 2016. She was a member of the Rectors' Conference of Swiss Universities (2008-2016) and president (2013-2015) of the "swissuniversities". She has been member of the German Accreditation Council since 2013, Vice-President of the European University Association since 2015 and a member of the Council of the Agency for Quality Assurance and Accreditation Austria since 2017.



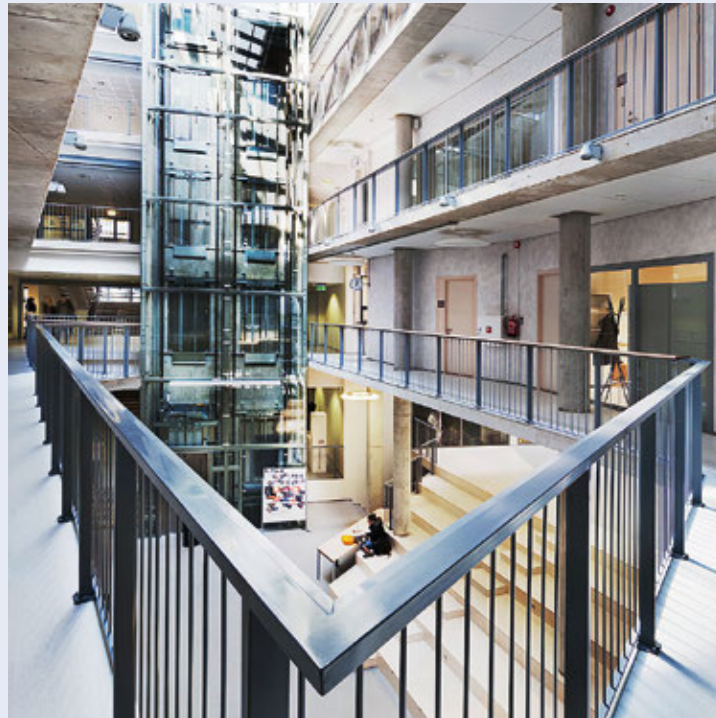
David Oliva Uribe is Head of EUA-CDE. His work focuses on global trends in doctoral education, doctoral programmes and researcher careers. Before joining EUA, David worked as scientific researcher and academic coordinator at the Vrije Universiteit Brussel (VUB). He worked on the development of intelligent surgical tools to improve the safety of brain tumour operations. Prior to that, he gained experience in R&D working in different university environments in Germany (University of Hannover and Heinz Nixdorf Institute at the University of Paderborn). From 2000-2005 he worked in Mexico at the Tecnológico of Monterrey as full-time docent in Mechanical Engineering and was appointed Director of the Academic Program of the Bachelor in Mechatronics.



Bregt Saenen works as Policy and Project Officer in the Institutional Development Unit, focusing on developing and coordinating the activities and events by the Council for Doctoral Education. Prior to joining EUA, Bregt worked for a number of Brussels-based policy organisations, including DG EMPL of the European Commission and the EU offices of SOLIDAR and the International Labour Organization. He also worked as a doctoral researcher at the Centre for EU Studies of Ghent University and spent time as a visiting researcher at the Center for Global Affairs of New York University. Bregt holds a doctoral degree in EU Studies from Ghent University in Belgium.

SAVE THE DATE:

EUA-CDE ANNUAL MEETING 15-16 JUNE 2017, TALLINN, ESTONIA



EUA-CDE is delighted to announce that its next Annual Meeting will be hosted by Tallinn University on 15 and 16 June 2017 in Tallinn, Estonia.⁴⁴ You are kindly invited to save the date.

The Annual Meeting will offer a diverse programme with European and global professionals and experts sharing their ideas and practices on three topics:

The Annual Meeting is the largest and most comprehensive gathering of professionals and experts working on doctoral education and research training in 35 European countries. It is an opportunity for EUA-CDE members to build new partnerships, explore the latest trends and exchange practices with European and national policy makers, funding organisations, quality assurance agencies, global partners and other relevant stakeholders.

- Strengthening doctoral education in the digital era
- Supporting and tracking different career paths for early-stage researchers
- Discussing the funding of doctoral education and research



TALLINN UNIVERSITY

⁴⁴ More information about the event will soon be available on the EUA website:
<http://www.eua.be/activities-services/events/event/cde-tallinn>