Meeting Synopsis:

1. Call to order
2. Review of the minutes from October 14, 2020
3. Libraries' budget – Denise Pan
4. Faculty Council on Research Class C Resolution – Ben Marwick
5. Good of the order
6. Adjourn

1. Call to order

The meeting was called to order at

2. Review of the minutes from October 14, 2020

The minutes from October 14, 2020 were

3. Libraries’ Budget – Denise Pan

Denise Pan shared a presentation with the council regarding the Libraries budget and subscription review timeline (Exhibit 1).

There was discussion amongst members regarding equity and inclusion in subscription review and databases. It was noted there has been a real dollar increase in the cost of journals. UW has not had a major serial review and cancellation since 2010. This becomes an issue with determining how to cover the costs received from lump sum increases to the materials budget. UWL will need to determine if there are redundant resources. A member noted that some materials have multiple database platforms and asked if removing some databases save money. Pan mentioned databases vendors can freely add or drop titles from their service. If UWL wants a specific title, publisher packages must have confirmed use.

A member questioned where UW would find their identified user communities. Users are usually UW students/faculty/staff and the broader community (worldwide). Resources are licensed for current quarters and are often behind a pay wall. Pan highlighted the fact that open access is not free; participating in open access is not affordable due to the publication costs.

Pan noted that open scholarship commons has launched virtually. It will be an amplifier for the work on open access advocacy and host data/digital scholarship/electronic theses. It demonstrates the importance of the libraries influence in all types of open content access.

A council member noted their students reviewed the accessibility of UW’s online database resources and offered that information to Pan.
This conversation will continue at the next FCUL meeting.

4. **Faculty Council on Research Class C Resolution – Ben Marwick**

   Chair of FCR Ben Marwick joined the council to receive feedback on their Class C resolution (Exhibit 2). They noted two reports from national committees inspired the council to create this resolution on transparency and reproducibility in research at UW. They would like to raise awareness to the community and introduce the concepts.

   A member asked if there has been discussion on IT or the provost office on maintaining infrastructure for datasets. Plans include engaging with the expertise of the UW Libraries on keeping research and datasets. There have been conversations with UWIT regarding data storage, but they have not collaborated to address this.

   A member asked if this resolution might be a burden on the libraries to refine research works. It was noted that there has been no funding for open access or research works. Staff were redirected in the libraries to work on reviewing and will calculate the cost and timeline.

   Pan noted this push for open access and data storage needs to be expanded to the entirety of UW. If universities do not determine how to store data, commercial companies will heavily monetize the data they buy.

   A member suggested discussing this topic with SCPB.

5. **Good of the Order**

   Nothing was stated.

6. **Adjourn**

   The meeting adjourned at 3:45 p.m.

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*Minutes by Alexandra Portillo, xanport@uw.edu, council analyst*

**Present:**

*Faculty Code Section 21-61 A:* Trent Hill, Michael Kucher, Douglas MacLachlan, Khalfani Mwamba, Julie Nicoletta (chair), Randolph Otto, Juliet Shields, Helene Williams, Sundar Balakrishnan  
*Faculty Code Section 21-61 B:* Betty Lanman, Gordon Aamot, Kate O’Neil, Jacob Lackner  
*President's designee:* Betsy Wilson  
*Guests:* Ben Marwick, Lauren Pressley, Denise Pan, Jennifer Muilenburg

**Absent:**

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*Exhibits*

Exhibit 1 - FCUL 2020-12-09 Subscription Review
Exhibit 2 - Draft of a resolution Concerning the importance of reproducibility, openness, and transparency in research at UW
Faculty Council on University Libraries

December 9, 2020

UNIVERSITY LIBRARIES
Contents

- Libraries’ budget for collections
- Timeline
- Principles for subscription review
- Communication pathways
FY21 Budget - October Recap

UW Administration

Implemented “Phase 1” Reduction and Realignment of GOF budgets. Additional reduction/realignment cycles could be initiated due to

- fall student census numbers,
- state budget action such as a special session in 2020 or regular session in January 2021, or
- other unforeseen circumstances.

UW Libraries Seattle Campus

For FY21, UW Office of Planning & Budget (OPB) has reduced the permanent GOF budget on average by $1.47M or 4.6% for the University Libraries on the Seattle campus for

- UW Press
- Hourly (student workers)
- Resources (collections)
FY21 Budget - October Recap

• Cancellation target of $125,000 in database and e-journal subscriptions for FY21.
• Planning for a comprehensive subscription review for Spring 2021 for FY22.
FY21 Budget - December Update

• We do not anticipate that UW Office of Budget and Planning (OPB) will move forward with Phase II budget reductions currently.

• The Seattle Campus will allocate $250k of the Main Resources Budget to Seattle Fund Groups, and retain the remaining unallocated balance of ~$750k.

• A subsequent budget contraction exercise will depend upon actual results from the upcoming 2021 Legislative Session, which begins in January.
# FY22 Subscription Review Timeline 2021

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
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<tbody>
<tr>
<td>January 13, 2021</td>
<td>FCUL discussion: draft rubrics for cancellation</td>
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<tr>
<td>February 10, 2021</td>
<td>FCUL discussion: potential cancellation target amount</td>
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<tr>
<td>April 7, 2021</td>
<td>FCUL discussion: initial lists of proposed cancellations</td>
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<tr>
<td>April 9 to August 11, 2021</td>
<td>Posted on Libraries website: Initial list of proposed cancellations</td>
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<tr>
<td>May 12, 2021</td>
<td>FCUL discussion: FY21 fiscal close and FY22 fiscal open</td>
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<tr>
<td>August 12, 2021</td>
<td>Libraries Acquisitions dept begins submitting <em>renewals</em> to vendors/publishers.</td>
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<tr>
<td>August 12 to October 11, 2021</td>
<td>Posted on Libraries website: Second iteration of cancellation list</td>
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<tr>
<td>October 12, 2021</td>
<td>Last day for public comments on cancellation lists.</td>
</tr>
<tr>
<td>October 19, 2021</td>
<td>Libraries Acquisitions dept begins submitting <em>cancellations</em> to vendors/publishers.</td>
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Principles for Subscription Review

About the document

Goals

• Greater transparency and clarity about our intentions
• Create a framework for decision-making
• Alignment with the Libraries Mission, Vision, and Values

Details

• To be posted publicly on Libraries website
• 2-Part structure: 1) Preamble; 2) Actions aligned to values
Principles for Subscription Review
Part 1: Preamble (DRAFT)

We share our Subscription Review Principles with the intention of being more transparent. However, true transparency is more than presenting data and outcomes. Our goal is to provide more context and clarity about past practices, current allocations and expenditures, and future trends. Moreover our principles should illuminate the implications and trade offs in the context of fiscal realities. As stewards of the Libraries collections and University funding, our hope is to move away from binary and zero-sum perspectives about allocations and expenditures. Instead, our intention is to engage in substantive and collaborative discussions that result in making the best possible decisions on acquiring, retaining, and cancelling subscriptions and given current resources and long-term implications on teaching and research at the University of Washington.
Principles for Subscription Review
Part 2: Actions aligned to values (DRAFT) 1 of 2

• To be sustainable…
  • Aligning our resources and decisions with values, strategic priorities, user needs and institutional mission and goals

• To be equitable…
  • All subject disciplines and subscriptions (including big journal packages) are under review
  • Proposed cancellation candidates and decisions will incorporate quantitative and qualitative factors
Principles for Subscription Review
Part 2: Actions aligned to values (DRAFT) 2 of 2

• **To be transparent…**
  • Listening and communicating openly and effectively with each other and our user communities

• **To be collaborative…**
  • Leveraging expertise and knowledge from campus partnerships across the three campuses and between Libraries’ staff and UW faculty
  • Subject Librarians working with academic departments & programs
Discussion Prompts

• Are the *Principles for Subscription Review* helpful?
• Do they provide an initial framework for collaborative discussions?
• Do they capture our shared values?
• What is missing?
Current Communication Pathways

Online

• News Announcements, e.g.
  • 2020-2021 Subscription review: An update...

• Web pages, e.g.
  • Database Subscription Review Research Guide
  • Collections Update: cancellations

• Social Media
  • Facebook | Instagram | Twitter

In-Person

• Board of Deans & Chancellors
  • Current members of the board

• Faculty Council on University Libraries
  • Current members

• Subject Librarians
  • Librarians with subject expertise
Discussion

How can the Libraries improve communication with your department and colleagues?

• What is working?
• What could be improved?
• How could you help the UW and Libraries?
Thank you!

Let us know if you have questions or comments

Denise Pan, Associate Dean for Collections & Content
Email: dpan@uw.edu | Phone: 206.543.4786

Lizabeth (Betsy) Wilson, Vice Provost and Dean of University Libraries
Email: betsyw@uw.edu | Phone: 206.543.1763
Draft of a resolution Concerning the importance of reproducibility, openness, and transparency in research at UW

WHEREAS, the primary mission of the University of Washington is the advancement, dissemination and preservation of knowledge; and

WHEREAS, there is growing evidence that nearly every field is affected by the problem of studies that are difficult or impossible to replicate or reproduce. This slows progress in research and diminishes public trust in science.

WHEREAS, many institutions and research communities are recommending or requiring practices that improve the reproducibility, transparency and openness of research that:

● Ensures the reliability of knowledge and facilitates the reproducibility of results
● Improves the efficiency and creativity of knowledge creation
● Expands access to knowledge and to the research enterprise

WHEREAS, the reports by the National Academies of Sciences, Engineering, and Medicine ‘Reproducibility and Replicability in Science’ (2019) and ‘Open Science by Design’ (2018) recommend:

● To help ensure the reproducibility of computational results, researchers should convey clear, specific, and complete information about any computational methods and data products that support their published results in order to enable other researchers to repeat the analysis, unless such information is restricted by nonpublic data policies.
● Educational institutions should educate and train students and faculty about computational methods and tools to improve the quality of data and code and to produce reproducible research, and create a culture that actively supports open science by design.

WHEREAS, many public and private funders have introduced mandates to ensure that the data and methods underlying articles are available

WHEREAS, the University of Washington Libraries has established an online, freely accessible and searchable data repository, ResearchWorks at the University of Washington (ResearchWorks), for the dissemination and preservation of scholarly works published by members of the University community;
therefore,

BE IT RESOLVED, that the Faculty Senate requests that:

1. UW researchers include brief statements in their published work that attest to the reproducibility, transparency and openness of their research whenever possible, and in a manner consistent with the best practices of their research community.

2. UW instructors draw on best practices in their communities to teach students integrity in empirical research by informing students of the principles, methods, and tools that will enhance the reproducibility, transparency and openness of work produced by future generations of researchers. Instructors are recommended to consult with the UW Center for Teaching and Learning for guidance on specific challenges in teaching concepts and skills of reproducible, transparent and open research.

3. UW researchers and instructors consult the UW Libraries’ resource page on reproducibility to learn more about improving the computational reproducibility of their research, and consult with Data Scientists at the UW eScience Institute for guidance on specific challenges in making their computational work reproducible.

4. The Provost’s Office provides resources to the University of Washington Libraries to support the UW’s ResearchWorks to support the reproducibility, transparency and openness of UW research, according to their previous assessments.
FAQ

Q: What is the evidence that nearly every field is affected by studies that are difficult or impossible to replicate or reproduce?

A:

- **Economics**: Reinhart and Rogoff, two respected Harvard economists, reported in a 2010 paper that growth slows when a country’s debt rises to more than 90% of GDP. Austerity backers in the UK and elsewhere invoked this many times. A postgrad failed to replicate the result, and Reinhart and Rogoff sent him their Excel file. They had unwittingly failed to select the entire list of countries as input to one of their formulas. Fixing this diminished the reported effect, and using a variant of the original method yielded the opposite result than that used to justify billions of dollars’ worth of national budget decisions. A systematic study of economics found that only about 55% of studies could be reproduced, and that’s only counting studies for which the raw data were available (Vilhuber, 2018)

- **Cancer biology**: The Reproducibility Project: Cancer Biology found that for 0% of 51 papers could a full replication protocol be designed with no input from the authors (Errington, 2019). Not sharing data or analysis code is common. Ioannidis and colleagues (2009) could only reproduce about 2 out of 18 microarray-based gene-expression studies, mostly due to lack of complete data sharing.

- **Artificial intelligence**: (machine learning) A survey of reinforcement learning papers found only about 50% included code, and in a study of publications associated with neural net recommender systems, only 40% were found to be reproducible (Barber, 2019).

- **Wet-lab biology**: Researchers at Amgen reported shock when they were only able to replicate 11% of 53 landmark studies in oncology and hematology (Begley and Ellis, 2012). A Bayer team reported that ~25% of published preclinical studies could be validated to the point at which projects could continue (Prinz et al., 2011). Due to poor computational reproducibility and methods sharing, the most careful effort so far (Errington, 2013), of 50 high-impact cancer biology studies, decided only 18 could be fully attempted, and has finished only 14, of which 9 are partial or full successes.

- **Social sciences**: 62% of 21 social science experiments published in Science and Nature between 2010 and 2015 replicated, using samples on average five times bigger than the original studies to increase statistical power (Camerer et al., 2018). 61% of 18 laboratory economics experiments successfully replicated (Camerer et al., 2016). 39% of 100 experimental and correlational psychology studies replicated (Nosek et al., 2015). 53% of 51 other psychology studies (Klein et al., 2018; Ebersole et al., 2016; Klein et al., 2014).

- **Medicine Trials**: Data for >50% never made available, ~50% of outcomes not reported, author-held data lost at ~7%/year (Devito et al., 2020)

Q: What are examples of practices that many institutions and research communities are recommending or requiring to improve the reproducibility of research?
A:

- Over 1,100 scholarly journals have implemented the ‘Transparency and Openness Promotion Guidelines’ of the Center for Open Science: [https://www.cos.io/top](https://www.cos.io/top). These allow a journal to clearly communicate its standards for transparency, openness, and reproducibility.

- UK Research and Innovation requires funded researchers to include a statement in their journal articles which provides information on how third parties can access any underpinning research data.

- The UK Reproducibility Network is ten universities working to align their staff with open-science initiatives — reproducibility sections in grant applications and reporting checklists in article submissions, for example. They are also cooperating to consider larger changes, from training to hiring and promotion practices. [https://www.nature.com/articles/d41586-019-03750-7](https://www.nature.com/articles/d41586-019-03750-7)

- The University College London Office of the Vice-Provost (Research) has a [UCL Statement on Transparency in Research](#) that recommends their researchers:
  - make their research methods, software, outputs and data open, and available at the earliest possible point, according to statements such as the [Berlin Declaration](#)
  - describe their data according to [FAIR Data Principles](#), ensuring that it is Findable, Accessible, Interoperable and Reusable
  - deposit their publication, data and software outputs in open access repositories

- The University of Bristol has a [Research data management and open data policy](#) that encouraging researchers to publish data in an appropriate digital format (i.e. non-proprietary) wherever possible, in order to facilitate data re-use:
  - [https://zenodo.org/record/4049968#.X3DITGllCNw](https://zenodo.org/record/4049968#.X3DITGllCNw)

- The high-energy physics community have adopted policies and practices to facilitate data sharing at large scales to enable reproducible research: [https://www.nature.com/articles/s41567-018-0342-2](https://www.nature.com/articles/s41567-018-0342-2)

- The [American Journal of Political Science](#) (AJPS) has a Replication & Verification Policy that requires scholars to incorporate reproducibility and data-sharing into the academic publication process. Acceptance of a manuscript for publication in the AJPS is contingent on successful replication of any empirical analyses reported in the article: [https://ajps.org/ajps-verification-policy/](https://ajps.org/ajps-verification-policy/)

- [Nature Communications](#) requires authors to supply for publication the source data underlying any graphs and charts, and uncropped, unprocessed scans of any blots or gels: [https://www.nature.com/articles/s41467-018-06012-8](https://www.nature.com/articles/s41467-018-06012-8)

Q: What are some examples of public and private funders that have introduced mandates to ensure that the data and methods underlying articles are available
A: The Sherpa Juliet database indicates that 12 public and private funding agencies in the US mandate data archiving as a condition of receiving funds: https://v2.sherpa.ac.uk/view/funder_by_data_req/requires.country.html

The White House's Office of Science and Technology Policy issued a memo in 2013 directing all federal agencies that provide $100 million or more in research funding to come up with plans requiring grant recipients to share the results of their research with the public. Sixteen federal agencies the give research grants have adopted policies such as Data must be openly available at the time of acceptance of research manuscript’ https://guides.library.unr.edu/openaccess/mandates

Q: What does reproducibility, openness, and transparency mean, and how do they relate to similar concepts?

A: Is important to be aware that the definitions of some of these terms vary from one research community to another. For example, the definition of ‘reproducibility’ and ‘replicability’ have opposite meanings in some disciplines, see chapter six of the NASEM report for more discussion of this: https://www.nap.edu/read/25303/chapter/6

Transparency: Research is transparent if the methods, analysis and data are reported and disseminated openly, clearly and comprehensively.

Reproducibility: The findings of a research study are reproducible if they can be obtained in an independent study using the same methods and data as those used in the original study. cf. https://arxiv.org/abs/1802.03311

Openness: The sharing of resources and ideas, with emphasis on making these publicly and freely available for future use. cf. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5066505/

Integrity: Research has integrity if it has been conducted, analysed, reported and disseminated honestly and to a high standard, ensuring that the research and its findings can be trusted.

Replicability: A research study is replicable if its results can be obtained in an independent study using the same methods as those in the original study, but using different data or a new context.

Robustness: Research findings are robust if they can be consistently produced a) across a range of tests within a research study, and/or b) across different research studies that involve variations in assumptions, variables or procedures.

Computational reproducibility: the ability to take the raw data from a study and re-analyze it using only a computer to reproduce the final results, including the statistics. cf. https://doi.org/10.1126/science.aah6168
**Empirical reproducibility**: when detailed information is provided about non-computational empirical scientific experiments and observations. In practice this is enabled by making data freely available, as well as details of how the data was collected and analysed, such as laboratory protocols, reagents, organisms, etc.

Q. What are some data repositories that are currently used by researchers that we can use right now?

A: Here is a spreadsheet listing data repositories (currently 108) that are recommended by the journal *Scientific Data* (Springer Nature) as being suitable for hosting data associated with peer-reviewed articles in any journal: [http://dx.doi.org/10.6084/m9.figshare.1434640](http://dx.doi.org/10.6084/m9.figshare.1434640).

The Registry of Research Data Repositories is a global registry of research data repositories funded by the German Research Foundation (DFG). It covers research data repositories from different academic disciplines. It presents repositories for the permanent storage and access of data sets to researchers, funding bodies, publishers and scholarly institutions, and can be searched here: [http://service.re3data.org/search](http://service.re3data.org/search).

Here are links to lists of data repositories recommended by *Scientific Data*, organised by research area:

- **Biological sciences**: Nucleic acid sequence; Protein sequence; Molecular & supramolecular structure; Neuroscience; Omics; Taxonomy & species diversity; Mathematical & modelling resources; Cytometry and Immunology; Imaging; Organism-focused resources
- **Health sciences**
- **Chemistry and Chemical biology**
- **Earth, Environmental and Space sciences**: Broad scope Earth & environmental sciences; Astronomy & planetary sciences; Biogeochemistry and Geochemistry; Climate sciences; Ecology; Geomagnetism & Palaeomagnetism; Ocean sciences; Solid Earth sciences
- **Physics**
- **Materials science**
- **Social sciences**
- **Generalist repositories**
- **Other repositories**

Q. How do these recommendations compare to current requirements from NIH and NSF?
The current NIH policy on research data sharing is that “Data should be made as widely and freely available as possible while safeguarding the privacy of participants, and protecting confidential and proprietary data. To facilitate data sharing, investigators submitting a research application requesting $500,000 or more of direct costs in any single year to NIH on or after October 1, 2003 are expected to include a plan for sharing final research data for research purposes, or state why data sharing is not possible.”

This resolution goes beyond the NIH data sharing requirements by asking researchers to:

- Share data from projects requesting less than $500,000 from the NIH
- Share data via a trustworthy research repository, not ‘under the auspices of the PI’ or ‘available from the corresponding author on reasonable request’. Exceptions include restricted datasets, which should be shared according to best practices in the field.
- Include in publications a statement about data sharing that includes a DOI to the data discussed in the paper or a note about restrictions to data access.

The current NIH policy on reproducibility is that grant applications are expected to show 1) the scientific premise forming the basis of the proposed research, 2) rigorous experimental design for robust and unbiased results, 3) consideration of relevant biological variables, and 4) authentication of key biological and/or chemical resources. In brief, the policy is aimed specifically at rigor and transparency, and focused on good experimental design and reporting. It emphasises empirical reproducibility and has only limited guidance on statistical and computational reproducibility.

This resolution goes beyond the NIH reproducibility requirements by asking researchers to make a statement in NIH-funded publications about how the statistical and computational parts of their data analysis and visualisations can be inspected and reproduced by others. One example of how this may be accomplished is to include in the text of the article a DOI linking to a trustworthy repository that contains the Python or R code used to produce the results reported in the paper.

The NSF data sharing policy that states “Investigators are expected to share with other researchers, at no more than incremental cost and within a reasonable time, the primary data, samples, physical collections and other supporting materials created or gathered in the course of work under NSF grants. Grantees are expected to encourage and facilitate such sharing. … Proposals must include a supplementary document of no more than two pages labeled "Data Management Plan". Individual directorates and divisions provide more detailed guidance on preparation of data management plans.

This resolution goes beyond the NSF data sharing requirements by asking researchers to:

- Share digital data files via a trustworthy research repository, not ‘under the auspices of the PI’ or ‘available from the corresponding author on reasonable request’. Exceptions include restricted datasets, which should be shared according to best practices in the field.
- Include in publications a statement about data sharing that includes a DOI to the data discussed in the paper or a note about restrictions to data access.

The NSF has not yet introduced standards and guidance directly aimed at enhancing reproducibility, openness, and transparency in its application process, as NIH has. Several of NSF’s directorates have also issued “dear colleague letters” in recent years that encourage submission of proposals addressing certain aspects of reproducibility and replicability, including the [Directorate for Social, Behavioral and Economic Sciences](#), the Directorate for Computer and Information Science and Engineering, and the [Geosciences Directorate](#).

------------------------------- END OF THE CLASS C RESOLUTION DRAFT -----------------------------
Notes on the drafting process

Faculty Council on Research item on ‘Open Science by Design’


Motivations
- Ensuring the Reliability of Knowledge and Facilitating the Reproducibility of Results
- Faster, More Creative, and More Efficient Knowledge Creation
- Expanding Access to Knowledge and to the Research Enterprise

Recommendations:

1. Research institutions should work to create a culture that actively supports Open Science by Design by better rewarding and supporting researchers engaged in open science practices. Research funders should provide explicit and consistent support for practices and approaches that facilitate this shift in culture and incentives.
2. Research institutions and professional societies should train students and other researchers to implement open science practices effectively and should support the development of educational programs that foster Open Science by Design.
3. Research funders and research institutions should develop the policies and procedures to identify the data, code, specimens, and other research products that should be preserved for long-term public availability, and they should provide the resources necessary for the long-term preservation and stewardship of those research products.
4. Funders that support the development of research archives should work to ensure that these are designed and implemented according to the FAIR data principles. Researchers should seek to ensure that their research products are made available according to the FAIR principles and state with specificity any exceptions based on legal and ethical considerations.

Plan:

1. Discuss report within FCR and FC Libraries, FC Faculty Affairs, FC Teaching and Learning, and consider process that we used for the Open Access policy: https://www.washington.edu/faculty/councils/
2. Draft a Class C resolution for the faculty senate to raise awareness of the recommendations http://www.washington.edu/admin/rules/policies/FCG/FCCH22.html#2268
3. Draft a Class B resolution to require campus-based research funding to include policy for long-term availability of research products, e.g., to include some language in the call for proposals that supports Open Science by Design.

Discussions (with presentation: xxx )

**FCR meeting 14 Nov 2018**

Each field will be quite different in how they deal, need to discuss how to do it, might not always increase reproducibility, some also want to share code, with things, some fields require open availability, how does the university deal with intellectual property and open science? What about researchers that might attract bad actors, Pandora’s box is opened, we need to pay attention, huge topic that needs to be addressed.