

University of Washington
Faculty Council on Teaching and Learning

January 14, 2021

10:30 a.m. – 12:00 p.m.

Zoom

Meeting synopsis:

1. Call to order
 2. Review of the minutes from December 10, 2020
 3. Announcements/Updates
 4. Faculty Council on Research Class C resolution for reproducibility, openness, and transparency in research at UW – Ben Marwick
 5. FCTL Merit Subcommittee Class C Draft Review
 6. FCTL Academic Integrity Subcommittee update
 7. Faculty Peer Evaluations & Course Evaluations: discussion
 8. Good of the order
 9. Adjourn
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1. Call to order

The meeting was called to order at 10:30 a.m.

2. Review of the minutes from December 10, 2020

The minutes from December 10, 2020 were approved as written.

3. Announcements/Updates

A guest noted the unit level and college level campus climate survey results will be posted online in the next week. Questions on the survey related to teaching and learning may be of interest to FCTL.

4. Faculty Council on Research Class C resolution for reproducibility, openness, and transparency in research at UW – Ben Marwick

Chair of the Faculty Council on Research, Ben Marwick, shared a draft Class C resolution (Exhibit 1) with the council for their support.

A member noted faculty have usually rebuffed consideration of reproducibility as an important feature of research. Chair Marwick mentioned that research may be more valuable when shared.

Another member noted this resolution may not be important for researchers who do not conduct empirical work but would be for those who integrate empirical research in their humanities work. Those in the Arts may not find this as applicable.

Council members discussed the need for consequences for research misconduct and putting a spotlight on the mechanism itself. They suggested continuing conversations related to merit and promotion, and how the university will recognize research that adheres to this resolution. Members noted finding space to connect promotion and merit to conversations related to community engaged research, as openness to research often aligns with larger initiatives.

The council voted to support FCR on this resolution.

5. FCTL Merit Subcommittee Class C Draft Review

The subcommittee shared a draft of their Class C resolution (Exhibit 2). Chair Halverson will share the document with other councils for support and eventually send to the SEC.

It was noted that this resolution needs to be shared with the faculty senate by the April meeting in consideration of the other items being asked for this year. The class c recommends temporary fixes for 2021 but members noted this could be replicated for future global catastrophes. Solutions would likely revert to a regular merit system after a period.

A member suggested the actual decision to reconceptualize should be at the unit level. Merit evaluations could be separated from salary considerations and included in the resolution as a permanent change. Members of the subcommittee noted the narrowed scope is a result in which the speed this item needs to be enacted by the faculty. Departments could consider this as a larger and ongoing reconceptualization.

6. FCTL Academic Integrity Subcommittee update

The subcommittee was tasked with reviewing data related to Proctorio. They noted very minimal use of Proctorio at UW. The Proctorio contract is expiring at the end of June 2021. Due to that minimal use, the Proctorio contract is unlikely to be renewed. The subcommittee observed various resources developed by the tri-campus remote teaching and academic integrity subcommittee has done much of the work the FCTL subcommittee planned to do.

7. Faculty Peer Evaluations & Course Evaluations: discussion

Chair Halverson suggested the academic integrity subcommittee consider focusing on Faculty Peer Evaluations, which have been a topic of interest on the UWT campus. They will consider a class c resolution that would call for a suspension or alteration of evaluations during extraordinary circumstances, such as a global pandemic.

A member noted the Center for Teaching and Learning (CTL) was focused on course evaluations as of Summer 2019 and suggested determining which organizations have worked on the issue. The UW teaching evaluation taskforce committee has been stalled due to COVID-19 but is working on the topic.

Another member noted that while the code only requires one course evaluation per year, the expectation has been for all classes each quarter. They suggested making these course or peer evaluations as optional and empower faculty with the ability to decide if they need evaluations.

Chair Halverson suspended the work on the Academic Integrity Subcommittee and shifted their focus to support a notion of reconceptualizing peer evaluations.

8. Good of the order

The reasonable accommodation subcommittee would like to distribute their survey to a sample of faculty. A member noted the survey should ask faculty if they have had a reason to find the current reasonable accommodation system inequitable or difficult. Another member mentioned any sampling should be representative of the campus. Chair Halverson will confer with the faculty senate regarding survey distribution to all faculty.

It was noted that UWIT is no longer interested in continuing the use of Piazza, a common course discussion tool used by faculty, as the platform is considering the use ads. UWIT is working with another provider (edSTEM) and is looking for faculty to pilot the program rollout.

UWIT will have discussion in Spring 2021 regarding support in the transition from all online to in-person instruction. Members asked if Discord was a viable option, but it has no contract, no FERPA, and no privacy.

The Course evaluation catalog holds public information and is a widely used resource for students during course registration. UWIT would like input from FCTL on plans to integrate this data to a more updated platform. It was also stated that the remote learning mid-quarter evaluation would be an integrated item for future use.

Chair Halverson asked members to review the Merit subcommittee Class C resolution and send revisions to them.

9. Adjourn

The meeting was adjourned at 11:59 a.m.

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

Present: **Faculty Code Section 21-61 A:** Fred Bookstein, Kristin Gustafson, Kathleen Peterson, Timea Tihanyi, Lynn Dietrich, Rania Hussein, Ruben Casas
Faculty Code Section 21-61 B: Kat Eli, Deepa Banerjee, Clara Coyote
President's designee: LeeAnn Jones Wiles
Guests: Sean Gehrke, Ben Marwick, Tom Lewis, Katie Malcolm

Absent: **Faculty Code Section 21-61 A:** Jody Early, Kimberlee Gillis-Bridges

Exhibits

Exhibit 1 - Draft of a resolution Concerning the importance of reproducibility, openness, and transparency in research at UW

Exhibit 2 - Draft of Class C Legislation on Reconceptualizing Merit

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>. 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>
- 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#.X3DITGIICNw>
- 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>
- 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/>
- *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>

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 practise 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>.

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>

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 -----

Draft of Class C Legislation on Reconceptualizing Merit
FCTL Meeting, January 14, 2021

Merit Subcommittee Members: Fred Bookstein, Lynn Dietrich, Kimberlee Gillis-Bridges, Kristin Gustafson, and Timea Tihanyi

WHEREAS the current pandemic, political unrest, and ongoing protests of systemic racism and violence against BIPOC people have haphazardly, sometimes tragically, affected the capacity of university faculty to contribute to the multiple missions of their various units and have precipitated drastic changes in workload; in the conditions and demands for teaching, research, and service; and in work circumstances, including those related to the use of technology.

WHEREAS BIPOC and female faculty have been disproportionately impacted by these contexts and resulting demands.

WHEREAS the shift to online instruction has required going beyond the usual demands and procedures of direct classroom instruction, creating additional need for preparation, course development, and implementation of appropriate instructional methodologies.

WHEREAS travel restrictions, social distancing requirements, building closures, and cancellation of professional-society conferences has limited faculty members' ability to conduct and present research and other scholarship.

WHEREAS ongoing problems with full access to the infrastructure and technology required to learn online, sustained personal trauma associated with the pandemic and political events, and the effect of both on students' mental and physical health has created additional need for student mentoring and support on the part of faculty.

WHEREAS other uncontrollable, durational situations such as natural catastrophes and social or biological emergencies may trigger similar exigencies and impacts in the future.

WHEREAS merit is categorized and assessed differently across departments, units, and schools, and the faculty's ability to nimbly respond to the pandemic situation has already created more expansive definitions of research, teaching, and service in some departments, units, and schools, definitions that present viable evaluation mechanisms to be considered in similar times of duress.

THEREFORE, the Senate recommends that departments, units, and schools review existing merit evaluation procedures for 2020–2021, with the goal of considering the following changes:

1. The merit evaluation system contains a generous way of understanding people's capacities during extended times of social and health stressors, especially with considerations for work/life balance.
2. The merit evaluation system takes an expansive view of the categories in which faculty can demonstrate merit and/or an expansive view of the various forms research, teaching, and service excellence can take, especially as applied to faculty in different positions (tenure-line, teaching, research, artist-in-residence). In particular, faculty members' ability to adapt to quickly changing teaching, research, and mentoring demands should be recognized as meritorious. Those in charge of assessing merit may

look to existing examples of merit criteria from units that consider wide-ranging merit categories and meritorious activities and Center for Teaching and Learning resources on best practices for evaluating teaching.

3. The department, unit, or school has robust mentorship support around merit, especially for vulnerable faculty positions such as pre-tenure and teaching lines and faculty who take on unrecognized mentoring and other support of underrepresented student populations.
4. The merit evaluation process represents an occasion to collectively recognize and celebrate faculty efforts and contributions to departmental and institutional missions.