Meeting Synopsis

1. Call to order
2. Review of the minutes from October 10, 2018
3. Discussion and vote on restricted research list under FCR purview
4. Class c resolution for lab safety
   Guest: David Anderson, Executive Director, Health Sciences Administration
5. Open science by design – Ben Marwick
6. UW shared research resources task force
7. Discussion and vote on contract waiver request
8. Good of the order
9. Adjourn

1. Call to order

The meeting was called to order at 9:00 a.m.

2. Review of the minutes from October 10, 2018

The minutes from October 10, 2018 were approved as written.

3. Discussion and vote on restricted research list under FCR purview

Carol Rhodes, Director of the Office of Sponsored Programs, attended the previous FCR meeting and presented a draft document for publication restriction categories (Exhibit 1).

A motion was made to approve the proposed categories. The motion was approved.

Frevert, the chair, mentioned that the council would further discuss clinical research at a future meeting.

4. Class c resolution for lab safety
   Guest: David Anderson, Executive Director, Health Sciences Administration

The chair presented a proposed Class C resolution regarding laboratory safety (Exhibit 2).

David Anderson, Executive Director of Health Sciences Administration, provided additional context for the Class C resolution. At this time, Environmental Health & Safety (EH&S) has established lab safety standards, but does not have authority to shut down labs that fall below the standard. EH&S does make recommendations for improvement to these labs, but it is ultimately the Principal Investigator’s (PI) responsibility and choice to make any changes. Furthermore, EH&S can only suspend a lab if the lab if there is a significant health threat.
A member asked if there are any provisions in place for staff and/or students to report safety concerns. Anderson responded that there are provisions, but again EH&S cannot do anything unless there is a significant health threat.

A member asked if there was a cost to University if labs were required to meet EH&S standards. Anderson responded that EH&S is writing a cost assessment for the Provost now. Anderson also noted that lab safety is a top liability for the University though.

The chair will circulate the resolution for edits (including Mary Lidstrom, John Slattery, and Faculty Senate leadership). There was some discussion around whether to include the third point about laboratory safety performance ratings as criteria used for faculty evaluations. The council agreed to weigh in on this point specifically.

The council will vote electronically by the end of the month.

5. **Open science by design – Ben Marwick**

Ben Marwick shared a recent publication from National Academies of Sciences, Engineering and Medicine, entitled Open Science by Design (Exhibit 3).

A member commented that this is important to discuss but creating more open data may increase risk and decrease reproducibility. The chair asked the council to provide feedback via email.

6. **UW shared research resources task force**

The chair presented an overview of the UW shared research task force using a PowerPoint presentation (Exhibit 4)

Council members expressed concern that social and behavioral sciences were not included on the task force. The chair asked for recommendations from the council via email.

7. **Discussion and vote on contract waiver request**

The council discussed three restricted contract waivers. Discussion and vote of the proposals are detailed below:

- **Applied Physics Laboratory; classified contract from Cortana with is a company funded by the Naval Air Systems Command (NAVAIR).**
  - The council approved the contract.
- **Title: USAID ATLAST: Shifting malaria burdens in Malawi and Madagascar. PI: Kristie Ebi.**
  - The council approved the contract.
- **Title: Orchid Pollination by Mosquitoes. PI: Jeffrey A. Riffle.** The council discussed the potential infringement on intellectual property. Marwick will reach out to his National Geographic contacts to see if they places copyright on photographs. The chair will reach out to OSP for additional guidance.
  - The council will vote on this contract electronically.

8. **Good of the order**

Nothing was stated.
9. Adjourn

The meeting was adjourned at 10:30 a.m.

Minutes by Lauren Hatchett, lehatch@uw.edu, council analyst

Present:  
**Faculty**: Chuck Frevert (chair), Benjamin Marwick, Michael Rosenfeld, Paul Fishman, Nicole Gibran, Francis Kim  
**Ex-officio reps**: Ann Glusker, Larry Pierce  
**President’s designee**: N/A  
**Guests**: Lynette Arias, Susan Camber, David Anderson

Absent:  
**Faculty**: Donald Chi, Sara Kover, Erika Harnett  
**Ex-officio reps**: JoAnn Taricani, Stewart Tolnay  
**President’s designee**: Mary Lidstrom

Exhibits

Exhibit 1 – 1. Publication Restriction List.xlsx  
Exhibit 2 – 2. Class C Resolution for Lab Safety draft 1-9-18  
Exhibit 4 – FCR Update_11.14.18.pptx
<table>
<thead>
<tr>
<th>Category</th>
<th>Publication Restriction Type</th>
<th>Description</th>
<th>Examples</th>
<th>FCR?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joint Publications or By Committee</td>
<td>Collaboration in which joint publication is envisioned; UW can independently publish</td>
<td>The parties (sponsor and UW) are collaborators and both have right to publish. UW has the ability to independently publish results.</td>
<td>Collaboration agreement</td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td>Collaboration in which joint publication is envisioned; however, UW cannot independently publish until a waiting period is over.</td>
<td>The parties are collaborators and intend to jointly publish. UW does not have the ability to independently publish results of the collaboration effort until after a waiting period NTE 18 months after completion of study.</td>
<td>Multi-site clinical trial or study in which a multi-center publication is envisioned</td>
<td>NO, unless waiting period exceeds 18 months or UW not able to independently publish at all</td>
</tr>
<tr>
<td></td>
<td>Publication decisions by committee; UW may independently publish</td>
<td>Consortia or committee makes publication decisions for multi-site or consortia publications; however, UW may publish independently for only its site.</td>
<td>Consortia agreements</td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td>Publication decisions by committee; no ability for UW to independently publish</td>
<td>Consortia or committee makes publication decisions; no ability to independently publish.</td>
<td>Consortia agreements</td>
<td>YES</td>
</tr>
<tr>
<td>Restriction related to Federal Regulatory Requirements, or Business Proprietary</td>
<td>Prevents publication of information related to cultural or heritage of sponsor or individuals involved in research</td>
<td>Studies including Native American, tribal, or other native groups</td>
<td>Native population studies related to health outcomes</td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td>Prevents publication of information restricted by privacy regulations</td>
<td>The purpose of the publication restriction is to prevent PHI, PI or other personal, student, or other privacy information protected by statute/regulation from being shared.</td>
<td>Clinical Study involving patient data</td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td>Prevents publication of information restricted by export control regulations</td>
<td>The purpose of the publication restriction is to prevent export-controlled information from being shared; if removed from publication, can publish without restriction (e.g. fundamental research results)</td>
<td>Applied Research Agreement, Federal or Federal-flow through</td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td>Prevents publication of information considered controlled Unclassified Information (CUI)</td>
<td>The purpose of the publication restriction is to prevent CUI from being shared; if removed from publication, can publish without restriction</td>
<td>Federal contracts</td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td>Prevents publication of classified work</td>
<td>The purpose of the publication restriction is to prevent classified information from being distributed outside the intended clearance limitations.</td>
<td>Classified programs (with DD Form 254)</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>Prevents publication of information considered by sponsor to be business confidential or proprietary</td>
<td>The purpose of the publication restriction is to prevent a sponsor or third party's proprietary information from being included in publication. Restriction is limited to proprietary information that is defined in contract; no overreaching terms that include all research results or UW owned information as belonging to sponsor</td>
<td>Industry agreements</td>
<td>NO, unless sponsor requires broad definition of &quot;proprietary&quot; or is trying to control the publication for its own commercial advantage</td>
</tr>
<tr>
<td></td>
<td>Extended period of restriction for sponsor review</td>
<td>The publication restriction is to allow sponsor to review the intended manuscript/publication draft for possible patent protection or to strike its confidential/proprietary information from the publication, and this restriction exceeds 90 days, from time of disclosure.</td>
<td>Industry agreements</td>
<td>NO, unless exceeds 90 days.</td>
</tr>
<tr>
<td></td>
<td>Sponsor approves all publications</td>
<td>Sponsor has the final approval over all publications or other dissemination of the research results</td>
<td>e.g. DFARS 252.204-7000</td>
<td>YES, unless Task Order/Delivery Order under ONR Basic Agreement, then may accept</td>
</tr>
<tr>
<td>Non-Research</td>
<td>Work-for-hire</td>
<td>Sponsor owns the results; therefore we do not have right to publish/disseminate results (typical in services or other procurement agreement, not typically handled by OSP but rather under the auspices of APS 59.3)</td>
<td>Service agreements</td>
<td>NO, OSP to use UW IP Disposition Memo to get PI acknowledgement of terms</td>
</tr>
</tbody>
</table>
Class C Resolution – Support for the Continuation of the Lab Safety Initiative and for Granting of Legal Enforcement Authority for Environmental Health & Safety

Whereas, there are more than 1,000 laboratories at the UW and laboratory safety is a major financial risk to the University.

Whereas, Environmental Health & Safety (EH&S) is responsible for ensuring compliance with good laboratory safety practices in all laboratories at the UW with limited resources and personnel and without the authority to legally enforce laboratory compliance.

Whereas, while there has been a gradual increase in the laboratory safety performance ratings of all laboratories at the UW, there has not been an acceptable level of improvement especially in high risk laboratories.

Whereas, EH&S has successfully piloted in 90 higher risk laboratories at the UW a 2 year Laboratory Safety Initiative to identify and overcome barriers to safety in the UW’s most complex research laboratories with funding from the Provost. Funding for the Laboratory Safety Initiative ends in June 2018.

Whereas, the EH&S Laboratory Safety Initiative has successfully increased the laboratory safety performance rating from 53% to 75% in these 90 high risk laboratories.

Be it resolved that the UW Faculty Senate applauds the successful efforts of EH&S in improving laboratory safety at the UW and requests the following:

1. That the Provost continue to fund the EH&S Laboratory Safety Initiative for 3 more years in order to apply the successful methods of the Initiative for improving laboratory safety in all laboratories at the UW.

2. That the Washington State Attorney General’s office determine how EH&S can be granted legal authority to enforce compliance with best laboratory safety practices in all laboratories at the UW.

3. That laboratory safety performance ratings be included in the list of criteria used for faculty evaluations.

4. EO55 identified chain of responsibility for safety.
OPEN SCIENCE BY DESIGN
Realizing a Vision for 21st Century Research

Openness and sharing of information are fundamental to the progress of science and to the effective functioning of the research enterprise. The advent of scientific journals in the 17th century helped power the Scientific Revolution by allowing researchers to communicate across time and space, using the technologies of that era to generate reliable knowledge more quickly and efficiently. Harnessing today's stunning, ongoing advances in information technologies, the global research enterprise and its stakeholders are moving toward a new open science ecosystem. Open science aims to ensure the free availability and usability of scholarly publications, the data that result from research, and the methodologies, including code or algorithms, that were used to generate those data.

This report provides guidance to the research enterprise and its stakeholders as they work to achieve open science.

BENEFITS AND MOTIVATION
The research enterprise has already made significant progress toward open science and is realizing a number of benefits:

• **Rigor and reliability.** New standards for data and code sharing in fields such as biomedical research and psychology are making it easier for researchers to reproduce and replicate reported work.

• **Ability to address new questions.** Open science allows researchers to bring data and perspectives from multiple fields to bear on their work, opening up new areas of inquiry and expanding the opportunities for interdisciplinary collaboration.

• **Faster and more inclusive dissemination of knowledge.** The proportion of scientific articles that are openly available is increasing, which accelerates the process of disseminating research and building on results. Open publication also allows broader, more inclusive participation in research and expands the possibilities of productive research collaboration within the United States and around the world.

• **Broader participation in research.** Large-scale projects in fields such as astronomy and ecology are utilizing open data and expanding opportunities for citizen scientists to contribute to scientific advances.

• **Effective use of resources.** Reuse of data in fields such as clinical research is facilitating the aggregation of multiple studies for meta-analysis and allows for more effective testing of new hypotheses.

• **Improved performance of research tasks.** New tools such as electronic lab notebooks enable more accurate recording of research work streams and automate various data curation tasks.
• **Open publication for public benefit.** The belief that the broader public should have access to publicly-funded research and its benefits provides an additional strong rationale for open science. In the case of publicly-funded research, the ultimate sponsor is the taxpayer. The public benefits from open science as new knowledge is utilized more rapidly to improve health, protect environmental quality, and deliver new products and services.

A number of public and private research funders have introduced policies and support systems to ensure that the results of the research they sponsor are open.

**BARRIERS AND CHALLENGES**

Despite the significant progress made in recent years toward creating an open science ecosystem, science today is not completely open. Several barriers and challenges remain:

• **Costs and infrastructure.** There are significant remaining cost barriers to widespread implementation of open publication and open data. New technological and institutional infrastructure within specific disciplines and across disciplines needs to be developed.

• **Structure of scholarly communications.** Most publications are still only available on a subscription basis, and some potential pathways to open publication may disrupt the current scholarly communications ecosystem, including scientific society publishers, or may disadvantage early career researchers, researchers working in the developing world, or those in institutions with fewer resources.

• **Lack of supportive culture, incentives and training.** Open practices such as preparing datasets and code for sharing and making preprints available are not generally rewarded and may even be discouraged by current incentive and reward systems. This may have the unintended consequence of causing a disadvantage to early career researchers.

• **Privacy, security, and proprietary barriers to sharing.** Sharing data, code, and other research products is becoming more common, but barriers related to ensuring patient confidentiality and the protection of national security information exist in some domains. Proprietary research also presents barriers. Ultimately, some parts of the research enterprise may not be open.

• **Disciplinary differences.** The nature of research and practices surrounding treatment of data and code differ by discipline and even within a discipline. The size of datasets and the nature of some data may prevent immediate, complete sharing. Safeguards to prevent misuse or misrepresentation of data will be needed.

Open science stands at an important inflection point. A new generation of information technology tools and services holds the potential of further revolutionizing scientific practice. The ability to automate the process of searching and analyzing linked articles and data can reveal patterns that would escape human perception, making the process of generating and testing hypotheses faster and more efficient. These tools and services will have maximum impact when used within an open science ecosystem that spans institutional, national, and disciplinary boundaries.

**OPEN SCIENCE BY DESIGN**

In order to frame the issues and possible actions, the committee developed the concept of open science by design, defined as a set of principles and practices that fosters openness throughout the entire research life cycle (see Figure 1).

The researcher is at the center of the concept of open science by design. At each stage of the research process, the researcher both contributes to open science and takes advantage of the open science practices of other members of the research community:

• **Provocation:** explore or mine open research resources and use open tools to network with colleagues.

• **Ideation:** develop and revise research plans and prepare to share research results and tools under FAIR (Findable-Accessible-Interoperable-Reusable) principles.

• **Knowledge generation:** collect data, conduct research using tools compatible with open sharing, and use automated workflow tools to ensure accessibility of research outputs.

• **Validation:** prepare data and tools for reproducibility and reuse and participate in replication studies.
Dissemination: use appropriate licenses for sharing research outputs and report all results and supporting information (data, code, articles, etc.).

Preservation: deposit research outputs in FAIR archives and ensure long-term access to research results.

The overarching principle of open science by design is that research conducted openly and transparently leads to better science. The vision of open science by design suggests that all phases of the research process provide opportunities for assessing and improving the reliability and efficacy of scientific research.

FIGURE 1 Phases of Open Science by Design in the research life cycle.
SOURCE: Committee generated.

ACCELERATING PROGRESS

Achieving open science will require persistent, coordinated actions on the part of research enterprise stakeholders. The committee’s key findings, recommendations, and implementation actions are listed below.

Building a Supportive Culture

FINDING: Continued effort by stakeholders, working internationally and across disciplinary boundaries, is needed to change evaluation practices and introduce other incentives so that the cultural environment of research better supports and rewards open practices.

RECOMMENDATION ONE: 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.

Training for Open Science by Design

FINDING: There is little formal training and education in the principles and practices of open science. The emergence of data science as a recognized interdisciplinary field has highlighted the need for new educational content and approaches related to data.

RECOMMENDATION TWO: 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.
Ensuring Long-term Preservation and Stewardship

**FINDING:** Developing and sustaining the infrastructure required for long-term stewardship of research products will present a continuing challenge.

**RECOMMENDATION THREE:** 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.

Facilitating Data Discovery, Reuse, and Reproducibility

**FINDING:** As progress toward opens science by design continues, it is important that the community adhere to the ultimate goal of achieving the availability of research products under open principles.

**RECOMMENDATION FOUR:** 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.

Developing New Approaches to Fostering Open Science by Design

**FINDING:** Public and private funders have made significant contributions to fostering open science to this point. They should continue to support initiatives that accelerate progress, and evaluate and revise their policies as needed.

**RECOMMENDATION FIVE:** The research community should work together to realize Open Science by Design to advance science and help science better serve the needs of society.

**COMMITTEE ON TOWARD AN OPEN SCIENCE ENTERPRISE**

Alexa T. McCray (Chair), Harvard Medical School; Francine Berman, Rensselaer Polytechnic Institute; Michael Carroll, American University Washington College of Law; Donna Ginther, University of Kansas; Robert Miller, Lyrasis; Peter Schiffer, Yale University; Edward Seidel, University of Illinois at Urbana-Champaign; Alex Szalay, The Johns Hopkins University; Lisa Tauxe, University of California, San Diego; Heng Xu, The Pennsylvania State University. Staff: Tom Arrison, Program Director, Policy and Global Affairs Division (from November 2017); Emi Kameyama, Associate Program Officer, Board on Research Data and Information; George Strawn, Director, Board on Research Data and Information; Ester Sztein, Deputy Director, Board on Research Data and Information; Nicole Lehmer, Senior Program Assistant, Board on Research Data and Information; Alan Anderson, Consultant; and Christine Liu, Senior Program Officer (until October 2017).

For More Information . . . This Consensus Study Report Highlights was prepared by the Board on Research Data and Information based on the Consensus Study Report *Open Access by Design: Realizing a Vision for 21st Century Research* (2018). The study was sponsored by the Laura and John Arnold Foundation. Any opinions, findings, conclusions, or recommendations expressed in this publication do not necessarily reflect the views of any organization or agency that provided support for the project. Copies of the Consensus Study Report are available from the National Academies Press, (800) 624-6242; http://www.nap.edu or via the Board on Research Data and Information web page at http://www.nationalacademies.org/PGA/BRDI.
Update on Shared Research Resources Task Force

Charles W. Frevert, DVM, ScD
Professor
Department of Comparative Medicine
PCCSM/Department of Medicine
University of Washington School of Medicine
Importance of Shared Resources

1. Enhances the ability of UW investigators to conduct cutting-edge research
2. Increases the competitiveness of UW investigators for external research funding
3. Increases competitiveness for recruiting and retaining strong faculty members
4. Enhances scientific rigor and increases reproducibility
5. Increases efficiency and cost effectiveness
6. Serves as a resource that fosters new collaborations
7. A number of Universities and research institutes are taking significant steps to increase their investment in shared resources.

**Bottom Line:** How do we keep UW investigators competitive?
Charges of the Shared Research Resources Task Force (SRTF)

1. Meet two times during the summer quarter of 2017.
2. Develop a set of goals for shared research resources.
3. Formulate recommendations to Mary Lidstrom in a White Paper on UW Shared Research Resources with a list of proposed actions.
SHARED RESOURCES TASK FORCE

1. Charles W. Frevert, Chair, Professor
   Department of Comparative Medicine,

2. David Castner, Professor, Co-Chair
   Chemical Engineering and Bioengineering

3. Caroline Harwood, Professor, Microbiology
   Associate Vice Provost, University of Washington

4. Michael E Rosenfeld, Professor
   Environmental and Occupational Health Sciences

5. Rachel Wong, Professor
   Chair of Biological Structure (away July 27-18)

6. Michael T Khbeis, PhD
   Associate Director Microfabrication Facility

7. Barbara Wakimoto, Professor
   College of Arts and Sciences: Biology

8. David S. Ginger
   Professor, College of Arts and Sciences: Chemistry
SHORT TERM GOALS

1. Develop a second SRTF of limited duration (Fall and Winter Quarters) composed of six members (two members from FCR, two from the Office of Research and two at large members).

2. Charges of the SRTF
   i. Define what constitutes a UW Shared Research Resource
   ii. Work with the Faculty Senate to define how to develop a joint committee overseen by Faculty Council on Research (FCR) and the Office of Research (OR).
   iii. Determine the makeup and charge of the joint standing committee
   iv. Meet with the new UW Provost, Dr. Mark Richards, to discuss shared resources.

3. Review and comment on the inventory of UW Shared Research Resources that the OR has started.

4. Develop handouts that will be distributed to cores that can be used to increase the acknowledgement of UW Shared Research Resources. Use the FASEB resource: "Ensuring Proper Acknowledgement of Shared Resource Facilities and Instrumentation: Suggested Strategies and Best Practices".

5. Work with Michael Khbeis, PhD to investigate the use of UW Web-CORAL software by shared research resources.

6. Identify mechanisms to minimize red tape. (Winter Quarter 2018 through Fall 2019)