Your Thesis/Dissertation: Copyright, Research Data, Supplementary Materials, and Formatting

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Characterization of the stability of Pseudomonas aeruginosa ribosomal proteins under stress conditions

In this study, I aimed to standardize western blot probing large and small ribosomal subunits of Ps aeruginosa grown under different environmental conditions to characterize the stability of ribosomal proteins to bring heterogeneous composition of the population, which is hindered as one mechanism for antibiotic tolerance. Long-term maintenance with Paenaginosa PAO1 showed that mRNA transcriptome, RNF and HPF, are highly abundant at the biofilm interface of the thick Paenaginosa biofilms. Also, it was shown by Perez et al. and Williamson et al. (Perez-Osorio et al., 2010; Williamson et al., 2012) that the cells located at the limited interphase of the biofilm were metabolically inactive. Akiyama et al. (Akiyama et al., 2007) and Willis (Williamson et al., 2012) found that HPF is a critical mechanism for resistance to antimicrobial agents, and overall ribosomal RNA is prolonged stress exposure (Akiyama et al., 2017; Willis, 2012). In light of this information, Akiyama et al. (Akiyama et al., 2017) showed that in the absence of the HPF protein, the ribosome cannot restrain its integrity and cannot resume dormancy after the environmental stressors are gone. (Perez-Osorio et al., 2010) showed that Paenaginosa heterogeneity in physiology and it is possible that some of the biofilm are located at the bottom of the biofilm, unaffected by antibiotic exposure and therefore can repopulate (Williamson et al., 2012). Localization of ribosomal RNA expression in the structure of the biofilm is critical for the survival and growth.

RESPONSE AND RESILIENCE OF RIVERS TO HISTORICAL RESOURCE USE IN THE GREATER YELLOWSTONE ECOSYSTEM: A REPEAT PHOTOGRAPHY ANALYSIS

by
Heidi Martin Clark

A thesis submitted in partial fulfillment of the requirements for the degree of
Master of Science
in
Land Rehabilitation
Dear Leila Sterman,

While searching for dissertations and theses from e-libraries, I became aware of the paper you submitted to the Montana State University as part of your graduate degree, entitled "Institutional Repositories: An Analysis of Trends and a Proposed Collaborative Future". LAP LAMBERT Academic Publishing is an international publisher specializing since 2006 in the publication of high-quality dissertations and postdoctoral theses from renowned institutions worldwide.

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Emma Jones
Acquisition Editor

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Some grad students choose to publish their research data alongside their thesis, and we want to tell you a little more about it.
Some examples of research data

- Spreadsheets, text documents
- Lab notebooks, field notebooks
- Audiotapes, videotapes
- Photographs, films
- Protein or genetic sequences
- Survey responses
- Database contents (video, audio, text, images)
- Models, algorithms, scripts
- Methodologies and workflows

https://library.uoregon.edu/datamanagement/datadefined.html
Reasons to publish research data

- Good practice for your career
  - Federal data archiving mandates
  - Journal data archiving policies
  - Open Data movement
- Help people understand your research
- Facilitate reuse of your data
- Get more citations

If you start managing and sharing your data now, you’ll be learning important skills as an academic, scientist, or researcher. Wherever you end up, having experience documenting and publishing your data will likely be important.

**Federal mandates:** Many funding agencies (including NSF and NIH) require that grant proposals include a plan for how research data will be managed and shared. As of last year, non-classified data produced with federal money must be made public within twelve months of the associated article’s publication.

**Open data movement:** Sharing data facilitates scientific discourse and discovery. Archived Hubble telescope data is a great example -- astronomers have used this data to make new discoveries without spending time and money on new observations.

**Increase the impact of your research.** Studies have shown that open data can lead to increased citations of associated articles.
Here is an example of an article where the authors have published their associated research data. It's an article in PLOS, which has a policy that requires data publishing. It’s an article about White Sands Lizards.
So I scroll down and see that there's a "Data Availability" statement—the data is published in Dryad, a data repository.
Here's a screenshot of the data in Dryad. It's a spreadsheet with all of their measurements of White Sands Lizards. And as you can see, the spreadsheet has clear headings that help a reader understand the data.
It also has a readme file to help us understand the data—with a date, an overview of the file, explanations of each of the types of data that were collected, explanations of the abbreviations used, and the author's contact information in case we have questions. If you end up publishing your thesis data, our data librarian can help you create a readme file like this. There’s also a template on the Data Services website.
Our website provides more information about data services at MSU, including a data management planning toolkit and information about repositories where you can publish your data to promote discovery.
For general data, we generally recommend a few repositories, including Zenodo and Dryad. For ETD data, we often recommend Zenodo, since it is free to upload, and it is run by a reputable organization called CERN, the European Organization for Nuclear Research. Each of our recommended repositories allow easy and quick upload, and they'll provide a DOI that can be published in your thesis.
We also provide lists of disciplinary repositories, compiled by PLOS, Scientific Data, and NIH.

[lib.montana.edu/services/data/publication](lib.montana.edu/services/data/publication)
Quantitative trait loci associated with lodging, stem strength, yield, and other important agronomic traits in dry field peas

In pea, lodging changes canopy structure, increases disease pressure, reduces yield, and reduces harvest efficiency. In order to discover the quantitative trait loci (QTLs) influencing lodging resistance and other important agronomic traits in pea, a recombinant inbred line (RIL) population was created from a relatively wide cross between the commercial variety Delta and an unnamed pea variety. The RIL population was grown for 6 site-years in Bozeman and Moccasin, MT, USA, and phenotypic data was collected for 22 quantitative morphological traits and seven categorical traits which were thought to be associated with lodging resistance. Genotypic data was derived from genotype by sequencing, microsatellite markers, and cleaved amplified sequence tagged sites. QTL analysis identified a total of 135 putative QTLs for the 22 traits examined in the study. There were 12 specific regions where 115 QTLs co-located, indicating that as few as 12 genes may be responsible for multiple pleiotropic effects. Ten QTLs were found for lodging resistance. Due to the large amount of phenotypic data...
To wrap up, I wanted to show you an example from MSU. This grad student published his data in Zenodo and his thesis is in ScholarWorks.
If you want more information, contact Sara, our data librarian!
Formatting

www.montana.edu/etd

ETD Formatting Specialist: Megan Maier
gradformatting@montana.edu

Next ETD Approval Deadline: Spring 2019 (April 16, 2019)
ETD Submission Process

1. Download a template
2. Submit draft or chapter
3. Receive comments, make edits
   a. Submit another draft
4. Defend thesis or dissertation
   a. Submit another draft
5. Submit final document as a PDF
6. Submit signed Certificate of Approval (COA)
   a. PhD/EDD students: complete survey
7. Receive confirmation of approval
   a. Check Degreeworks
## 1. Review the Guidelines
- Formatting Advisor
- Formatting Guidelines
  - Standard Option
  - Manuscript Option
- Sample Pages
- ETD Templates
  - MS Word
  - LaTeX
- Typist/Editor List
  - Typist/Editor Guidelines

## 2. Submit Your ETD
- Submission Procedure
  - Master Students
  - DNP Students
  - Doctoral Students
- Formatting Checklist
- Required Paperwork

## 3. Get Approved
- Deadlines
- Approval
- Publication
Thank you!

Feedback form:

bit.ly/fall2018etd