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3D: DOIs, Data Files, and Digital Commons

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<https://digitalcommons.fiu.edu/glworks/80>

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3D: DOIs, Data Files, and Digital Commons

FIU

Digital
Collections
Center

Rebecca Bakker & Kelley Rowan

Florida International University

FIU

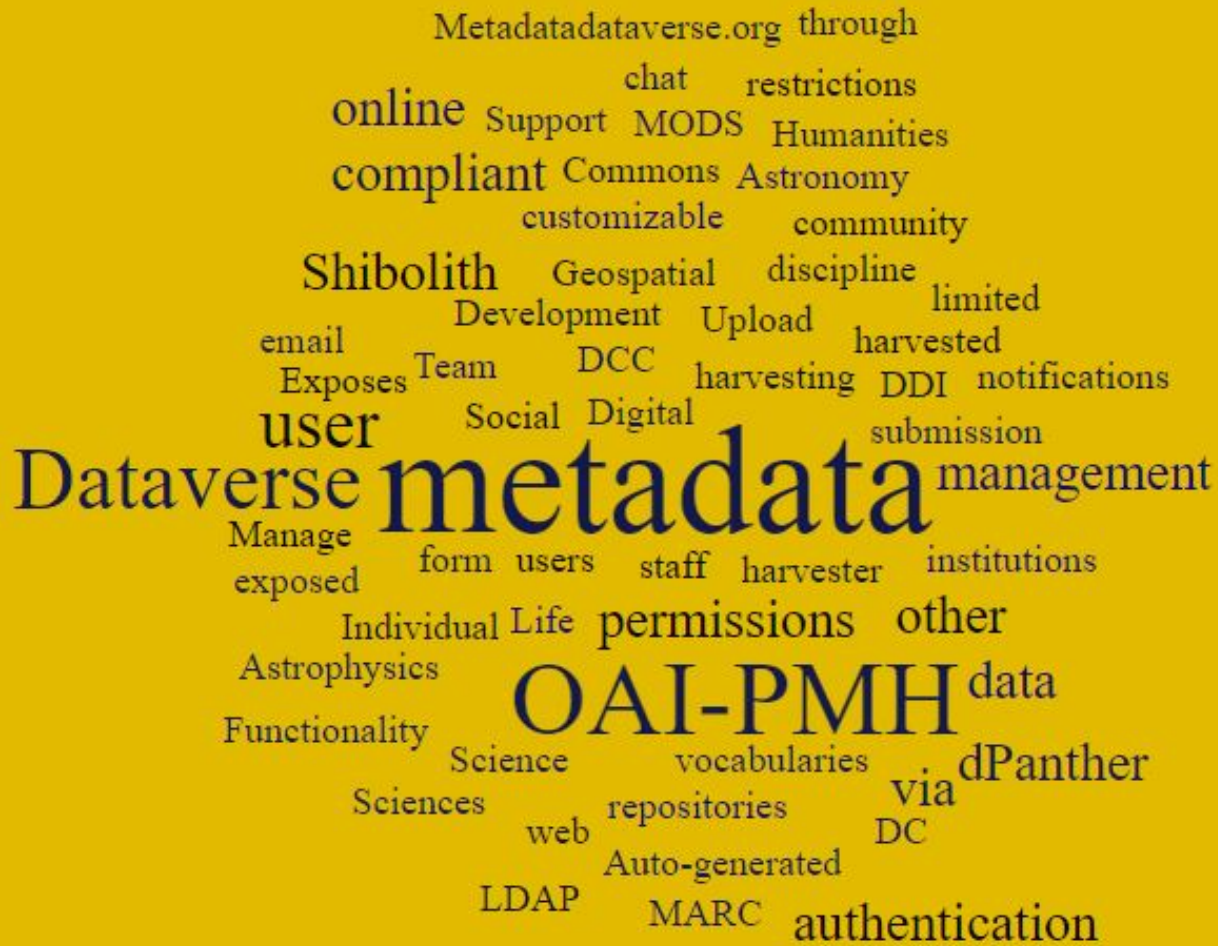
Digital
Collections
Center

- Data
 - Getting started with data
 - Review & survey
 - Workshop documentation
 - Digital Commons, Dataverse, dPanther
 - Dataverse workflow
 - LibGuides
 - Pilot program implementation

- DOIs
 - DOI implementation
 - Crossref & DataCite
 - Metadata
 - Degree disciplines
 - DOI Workflow

Who is this workshop for?

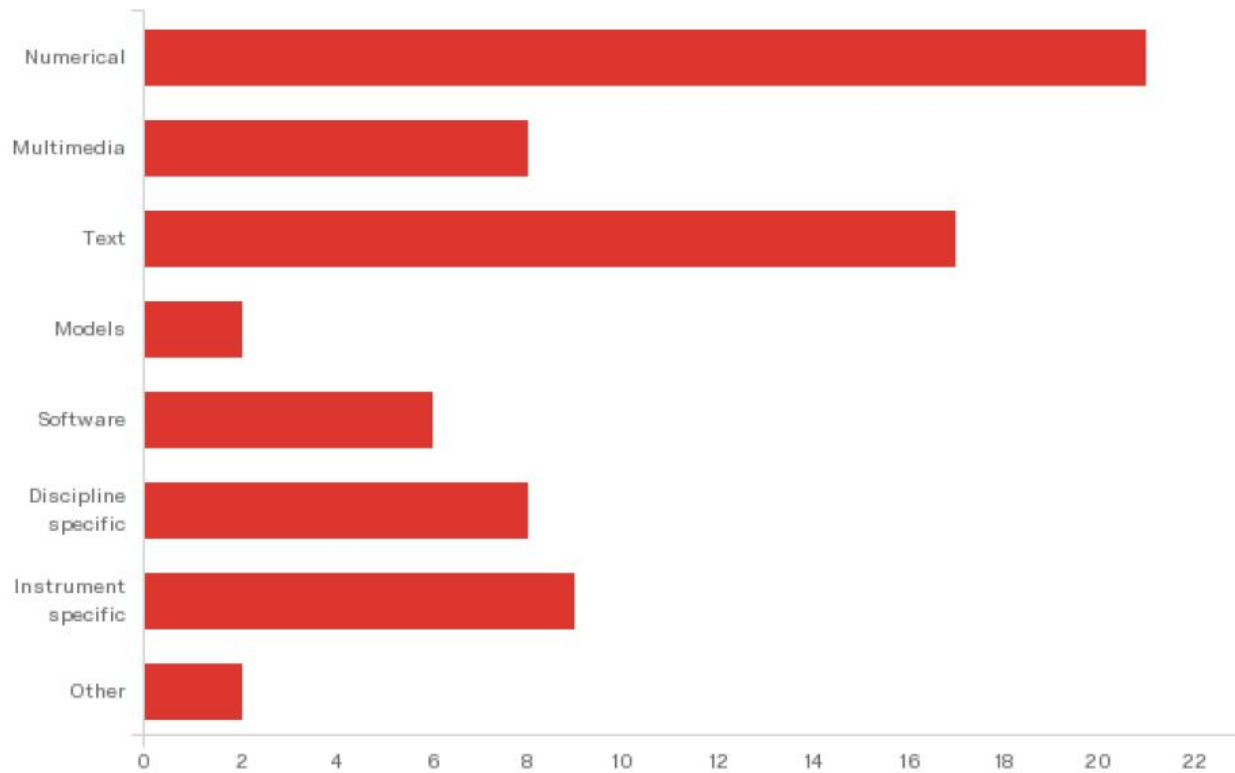
- People who are interested in:
 - implementing and/or maintaining a data and/or DOI initiative
 - sharing their experience and knowledge on data and DOIs
 - experts on either who can contribute to the conversation!



- Review of current data
 - ETD
 - Research data
 - RTD
 - Audio (fine arts)
 - Computer program
- Survey

Data Survey Questions

Q1 - What form(s) of data have you collected while completing your thesis or dissertation?



How much space does your data occupy?

1 GB

16g

10 MB

40GB

A lot

2 TB

I don't know

1MB

1gb

1 GB

1TB

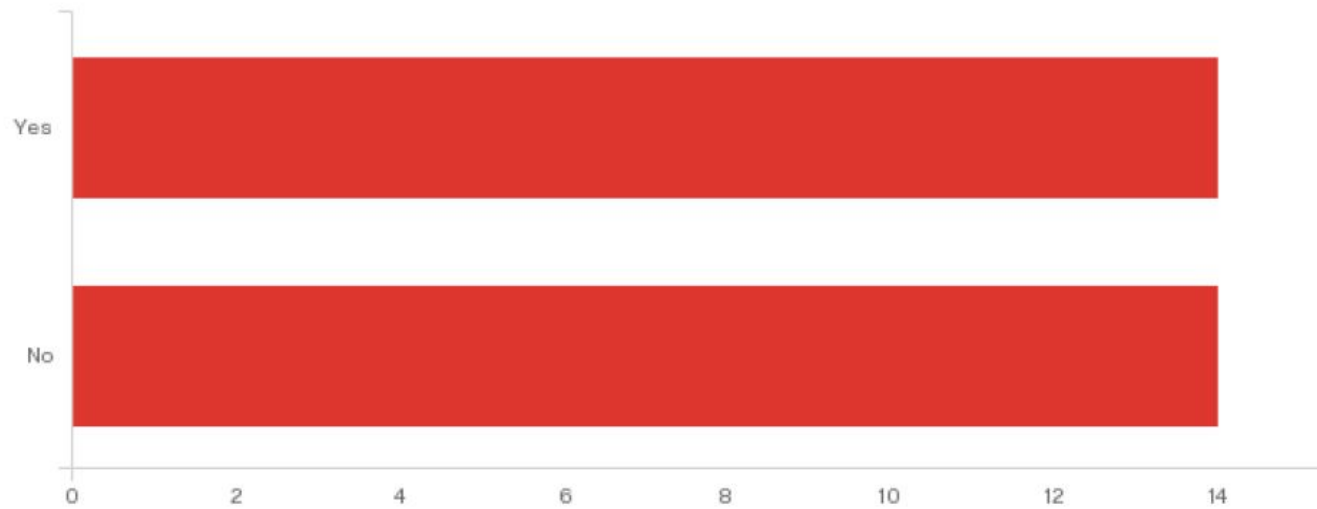
2 gbs

116 GB

300GB

300MB

Q4 - Would you consider including your data with your ETD submission?



Answer	%	Count
Yes	50.00%	14
No	50.00%	14
Total	100%	28

ETD Data Pilot Program

Overview

In this pilot program, graduate students submitting Master's Theses and Doctoral Dissertations in the Fall 2016 and Spring 2017 will be provided with the opportunity to archive finalized research data sets associated with their published ETD. These data sets will be served in the Libraries [dPanther](#) system and virtually connected to the ETD in Digital Commons, the university's institutional repository. A collaboration between the FIU Libraries and the University Graduate School, this pilot program seeks to

1. Establish data submission guidelines
2. Develop strategies for educating graduate students on data archiving
3. Assess data storage capabilities and needs for long term storage and access to data.

1. Data Submission Guidelines

Good *documentation* and *metadata* along with archiving in a *preferred file format*, can help ensure continued long term access and re-usability of your data. When submitting data, students should submit the documentation, metadata and data as a compressed file in the supplemental field on their ETD submission form in Digital Commons.

Documentation

Good documentation of data can help ensure that data can be understood and interpreted by any user. Documentation should start at the beginning of a project and continue throughout the research.

When submitting data, students are required to include appropriate documentation in a readme.txt file. The documentation should include:

- How data was created
- What the data means
- The data's content and structure
- Any manipulations that may have taken place

Sample documentation:

Metadata

Metadata, is a subset of core data documentation. Though metadata standards vary across disciplines all metadata provides standardized structured information explaining the purpose, origin, time references, geographic locations, creator, access conditions and terms of use of data.

Along with the documentation of your project and data you must include a metadata.txt file that includes:

- Title: The name given to the data/dataset
- Title of Theses or Dissertation

- Creator: Who created the data?
- Subject: What is the data about? (usually expressed as keywords)
- Description: What is the resource about? Description may include but is not limited to: an abstract, table of contents, reference to a graphical representation of content or a free-text account of the content
- Date: When was the resource created?
- Format: What is the format of the data (PDF/A, Excel Spreadsheet, [etc](#))
- Source: Where did the data come from
- Language: What language is the data in?
- Coverage: Coverage will typically include spatial location (a place name or geographic co-ordinates), temporal period (a period label, date, or date range) or jurisdiction (such as a named administrative entity)
- Rights: Who owns the data?

Format

Choosing an appropriate format for the data is also an important aspect of long term access and usability. Below are basic guidelines when preparing data for submission:

- Non-proprietary
- Open, documented standards
- Commonly used by your community/discipline
- Standard character encoding (ASCII, UTF-8)
- Unencrypted

Below is a table that outlines acceptable data formats. Data not in these formats will only be accepted if deemed appropriate upon review.

Type of data	Acceptable formats for sharing, reuse and preservation	Other acceptable formats for data preservation
Quantitative tabular data with extensive metadata a dataset with variable labels, code labels, and defined missing values, in addition to the matrix of data	SPSS portable format (.por) delimited text and command ('setup') file (SPSS, Stata, SAS, etc.) containing metadata information some structured text or mark-up file containing metadata information, e.g. DDI XML file	proprietary formats of statistical packages e.g. SPSS (.sav), Stata (.dta) MS Access (.mdb/ .accdb)
Quantitative tabular data with minimal metadata a matrix of data with or without column headings or	comma-separated values (CSV) file (.csv) tab-delimited file (.tab) including delimited text of given character set with SQL	delimited text of given character set - only characters not present in the data should be used as delimiters (.txt) widely-used formats, e.g. MS Excel (.xls/ .xlsx), MS Access

- Digital Commons

- <https://digitalcommons.fiu.edu/etd/3505/>

- Dpanther

- <http://dpanther.fiu.edu/dPanther/home>

- Dataverse

- <https://dataverse.org/about>

Abstract

The Reciprocating Mechanism Driven Heat Loop (RMDHL) is a novel heat transfer device that utilizes reciprocating flow, either single-phase or two-phase flow, to enhance the thermal management in high tech inventions. The device attains a high heat transfer rate through a reciprocating flow of the working fluid inside the heat transfer device. Although the concept of the device has been tested and validated experimentally, analytical or numerical studies have not been undertaken to understand its working mechanism and provide guidance for the device design. The objectives of this study are to understand the underlying physical mechanisms of heat transfer in internal reciprocating flow, formulate corresponding heat transfer correlations, conduct an experimental study for the heat transfer coefficient, and numerically model the single-phase and two-phase operations of the RMDHL to predict its performance under different working conditions. The two-phase flow boiling model was developed from the Rensselaer Polytechnic Institute (RPI) model, and a virtual loop written in C programming language was used to eliminate the need for fluid structure interaction (FSI) modelling. The accuracy of several turbulence formulations, including the Standard, RNG, and Realizable k- ϵ Models, Standard and SST k- ω Models, Transition k- ω Model, and Transition SST Model, have been tested in conjunction with a CFD solver to select the most suitable turbulence modelling techniques. The numerical results obtained from the single-phase and two-phase models are compared with relevant experimental data with good agreement. Three-dimensional numerical results indicate that the RMDHL can meaningfully reduce the peak temperature of an electronic device and result in significantly more uniform temperature across the device. In addition to the numerical study, experimental studies in conjunction with analytical studies are undertaken. Experimental data and related heat transfer coefficient as well as practically useful semi-empirical correlations have been produced, all of which provide archival information for the design of heat transfer devices involving a reciprocating flow. In particular, this research will lead to the development of more powerful RMDHLs, achieve a heat flux goal of 600 W/cm², and significantly advance the thermal management at various levels. Considering the other advantages of coolant leakage free and the absence of cavitation problems, the RMDHL could also be employed for aerospace and battery cooling applications.

Identifier

FIDC004065

Recommended Citation

Popoola, Olubunmi Tolulope, "Numerical, Analytical, and Experimental Studies of Reciprocating Mechanism Driven Heat Loops for High Heat Flux Cooling" (2017). *FIU Electronic Theses and Dissertations*. 3505.

<https://digitalcommons.fiu.edu/etd/3505>

Additional Files

[longer_evap_mesh_9.39.7.4.00500.56700.4.wmv](#) (23326 kB)

[FIDC004065_video1](#)

Rights Statement

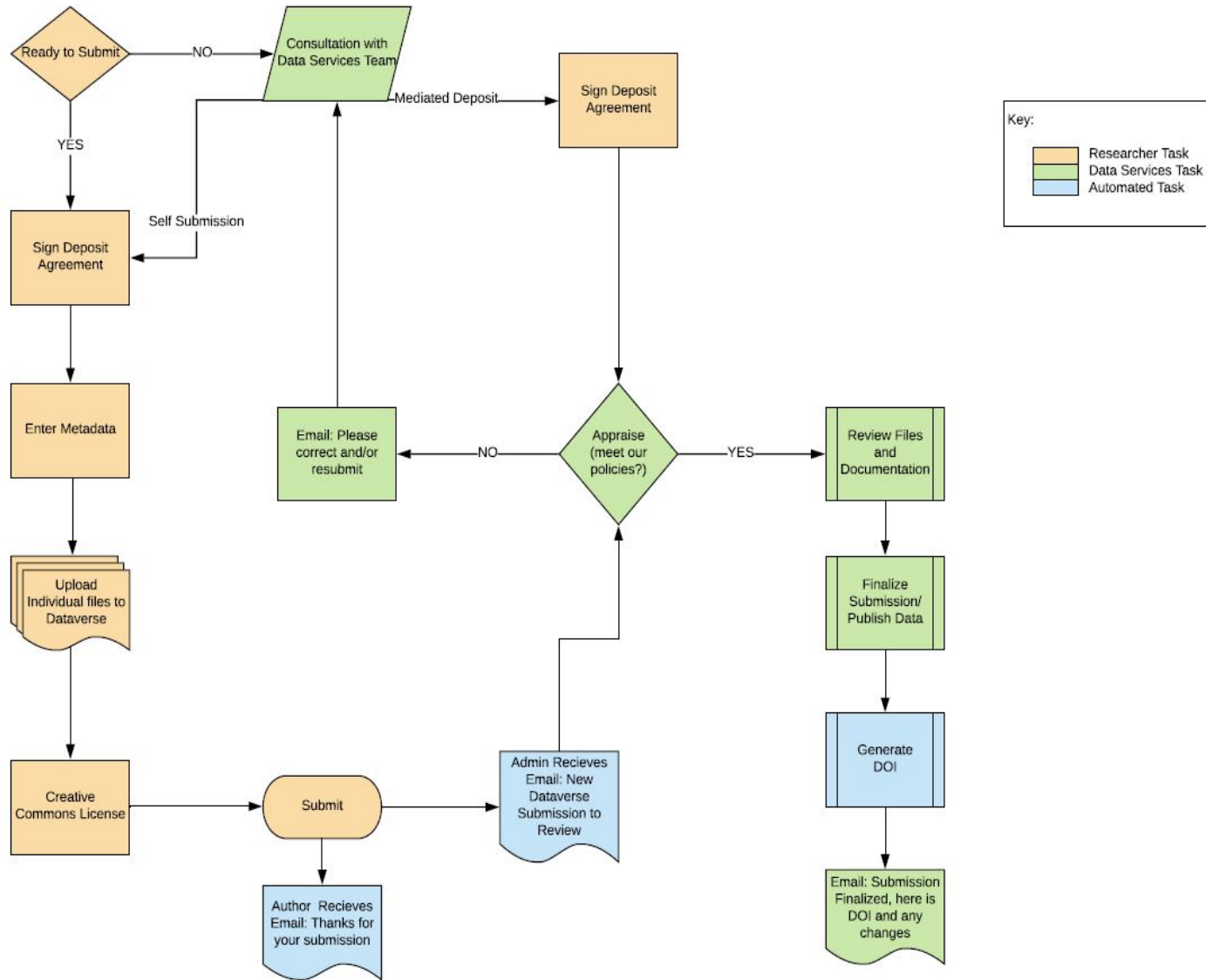


In Copyright. URI: <http://rightsstatements.org/vocab/InC/1.0/>

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Functionality	Dataverse	dPanther
Metadata	Supports discipline specific metadata including Geospatial Metadata, Social Science & Humanities Metadata, Astronomy and Astrophysics Metadata, Life Sciences Metadata (more information). http://guides.dataverse.org/en/latest/user/appendix.html#user-appendix	MODS/DC/MARC , limited vocabularies
Individual Data Upload	Yes. Built in web submission form	Yes, but requires development for simple submission form. Also, each user would need individual permissions management by staff.
User Management	Authentication via Shibolih, user restrictions customizable	Manage user permissions individually, unsure if authentication with LDAP/Shibolih possible or how much development it would take
Auto-generated email notifications for users	Yes - System generated emails to user when actions are taken in system	No - although it may be possible. Needs further investigation from developers
Support	Support: Support team available via email, Dataverse online community, Biweekly Community Call with Dataverse Development Team and other institutions, and Online chat (website says it offers training to developers, waiting on response from support to confirm this and any cost info)	Internal DCC and developer provided support.
OAI-PMH Compliant	Yes; can set up dataverse as a harvester from other OAI-PMH compliant data repositories. Exposes metadata through OAI-PMH and DDI	Yes - metadata is exposed via OAI-PMH for harvesting. No - metadata is not harvested into dPanther via OAI-PMH
Built in Metrics	Yes	Yes
Built in Geolocation	Yes	Yes
Versioning	Yes	No
Access Restriction (IP or authentication)	Yes	No
Embargo	No	No
Citation	Automatically generated citations for individual data set	No
SEO	Some development required for enhanced discoverability http://guides.dataverse.org/en/4.7.1/installation/config.html#letting-search-engines-crawl-your-installation	Yes
Migration	Batch Export via API	dPanther developers can batch export if requested, however it takes time to script based on export criteria
Additional functions for users	Allows users to upload and save data before publishing, allows data uploader to share unpublished data with others. support for Large Data upload via rsync and integration with an external application, the Data Capture Module (DCM).	

Dataverse workflow



- ETD Data Pilot Program

https://library.fiu.edu/etd_data_pilot

- Data LibGuides

<https://fiu.libapps.com/libguides/>

ETD Data Pilot Program

This guide provides submission guidelines and information about the ETD Data Pilot Program.

ETD Data Submission Information

ETD Data Program Overview

Glossary of Terms

Research Data Management 101

contact us

For questions regarding your ETD Data submission, please contact:

Jill Krefft

(IR Coordinator)

jkrefft@fiu.edu

Brandie Thomas

(ETD

Coordinator) bthomas@fiu.edu

etd data workshop materials

-  ETD Data Pilot Program: Managing and Archiving Your Research

preparing your data for submission

General Information

Documentation and Metadata

Format and File Organization

Privacy and Rights

Additional Resources

Good *documentation* and *metadata* along with archiving in a *preferred file format*, can help ensure continued long term access and re-usability of your data. When submitting data, students should submit the documentation, metadata and data as a **compressed file** in the **supplemental field** on their ETD submission form in Digital Commons. Below is a general outline for preparing your data. Each tab provides more details additional details to consider and prepare your data for submission including:

- Generate your *documentation* and complete *metadata*.
- Ensure data is in an appropriate *format*.
- Follow all *privacy* and *ethical standards* set by the University and ensure your right to archive the data.



submitting your data alongside your etd

Overview

Submission Checklist

Where to Submit

All graduate students submitting a thesis or dissertation through the graduate school are eligible to submit and archive their finalized data sets alongside their ETD. All data sets will be made openly accessible through the Library's dPanther system and Digital Commons.

Students submitting their data should review the section "preparing your data for submission" which outline documentation and metadata, format and copyright information.

All data should be submitted as a compressed file in the supplemental filed on their ETD submission in Digital Commons. The compressed file should include:

- Committee - Research & Scholarship Strategies Group
- Review
- Survey
- Grad school/admin buy-in
- Product research & comparison
- Workflow
- Funding – Tech Fee 2017
- Pilot – to begin Spring 2019
- Workshops
- Documentation
- Implementation

Implementation of DOIs

A digital object identifier (DOI) is a unique and permanent online content identification, linked on the Internet. It is a unique alphanumeric string, assigned and governed by a registration agency, and identifies an object permanently, even if the object changes its location, its owner or other characteristics.

DOI Registration Agencies used by FIU

Crossref

Scholarly and professional research content.
Journal articles, books, conference proceedings, etc.
Reference linking and searchable metadata database.
Journal Article:
"Quantum tomography: Measured measurement", Markus
Aspelmeyer, *nature physics* January 2009, Volume 5, No 1, pp11-12;
[[doi:10.1038/nphys1170](https://doi.org/10.1038/nphys1170)]

DataCite

Research data and datasets.
Enhanced search and discovery of research content.
Work with data centers and organizations that hold data that can be cited in
scientific publications.
Searchable metadata database.
Video of eye operation that supplements a medical journal:
B. Kirchhof (2009) Silicone oil bubbles entrapped in the vitreous base
during silicone oil removal, *Video Journal of Vitreoretinal Surgery*. [[doi:
10.3207/2959859860](https://doi.org/10.3207/2959859860)]

- Research and review
- Workflow
- Implementation – by November 2017 all Electronic Theses and Dissertations registered with Crossref in Digital Commons

Identifier

FIDC001944

Recommended Citation

Burchard, Gretha, "Representative Bureaucracy in German Public Schools: An Assessment of the Mechanisms of Passive Representation" (2017). *FIU Electronic Theses and Dissertations*. 3394.

<https://digitalcommons.fiu.edu/etd/3394>

DOI

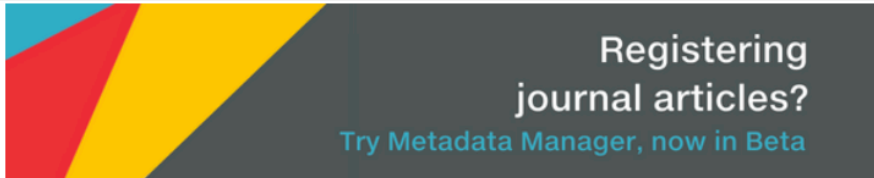
[10.25148/etd.FIDC001944](https://doi.org/10.25148/etd.FIDC001944)

Rights Statement



In Copyright. URI: <http://rightsstatements.org/vocab/InC/1.0/>

This Item is protected by copyright and/or related rights. You are free to use this Item in any way that is permitted by the copyright and related rights legislation that applies to your use. For other uses you need to obtain permission from the rights-holder(s).



These forms allow you to enter metadata and register DOIs. Review the [help documentation](#) for details.

Note: Your Crossref username and password will be required at the end of this process to submit data to the system. Please insure your browser allows JavaScript so that the data validation will function.

Step 1: Select Data Type

Data Type Selection

Select Data Type: Journal Book Conference Proceedings Report Dissertation CrossMark Policy page
 NLM File **BETA** Supplemental-Metadata Upload **BETA**

Step 2: Input the Dissertation metadata.

Dissertation Information

Title*:
 Dissertation DOI*:
 URL*:

Author:
 First Name: Last Name*: ORCID:

Approval date:
 Year*: Month: Day:

Institution:
 Name*: Acronym:
 Location:
 Department:
 Degree:
 ISBN:
 Dissertation Identifier
 (type:):

```
<OAI-PMH xmlns="http://www.openarchives.org/OAI/2.0/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.openarchives.org/OAI/2.0/
http://www.openarchives.org/OAI/2.0/OAI-PMH.xsd">
<responseDate>2018-09-07T19:35:45Z</responseDate>
```

Most recent metadata schema

<https://www.crossref.org/schemas/crossref4.3.0.xsd>

Schema Documentation

http://data.crossref.org/reports/help/schema_doc/4.4.0/4.4.0.html

Degree

Master of Science (MS)

Major/Program

<--Please Select Department-->

Major/Program

Select department if desired value is no longer available in the above menu.

Medical Laboratory Science

DOI Metadata – Degree Disciplines

The stress-buffering potential of the work environment

Doreen C. DuMond, Florida International University

Document Type

Thesis

Degree

Master of Science (MS)

Major/Program

Psychology

First Advisor's Name

Nancy Blaney

First Advisor's Committee Title

Committee Chair

Second Advisor's Name

Fernando Gonzalez-Reigosa

Third Advisor's Name

Paulette Johnson

Date of Defense

12-1982

	A	B	C	D	E	F		
		Field/Majors/ Graduate Degrees/ Academic Degrees/ Academic Programs/ Academic Majors/ Campus Programs/ Modality Programs	Specialization/ Concentration/ Major/Track	Degree	Exit Options	Tamiami Campus Programs	B V C P	
1	School/ College	Biology (offered jointly with FAU)		Master		X		
2	College of Arts and Sciences	Chemistry (offered jointly with FAU)		Master		X		
3		Community Psychology		Master of Science in		X		
4		Computer Science		Master of Science in		X		
5		Economics		Master of Arts in		X		
6		Environmental and Urban Systems (offered with the School of Technology)		Master		X		
7		International Studies		Master of Science in		X		
8		Mathematical Sciences		Master of Science in		X		
9		Physics (offered jointly with FAU)		Master		X		
10		Psychology (offered jointly with FAU)		Master		X		
		Business		Master in Business		X		
	80-81	81-82	82-83	83-84	84-85	85-86	86-87	87-



DOI Metadata – Degree Disciplines

MASTER OF ARTS

in

AFRICAN NEW WORLD STUDIES

College of Arts and Sciences

African -New
World Studies

Major/Program

African and African Diaspora Studies

MASTER OF SCIENCE

in

ENVIRONMENTAL AND URBAN STUDIES

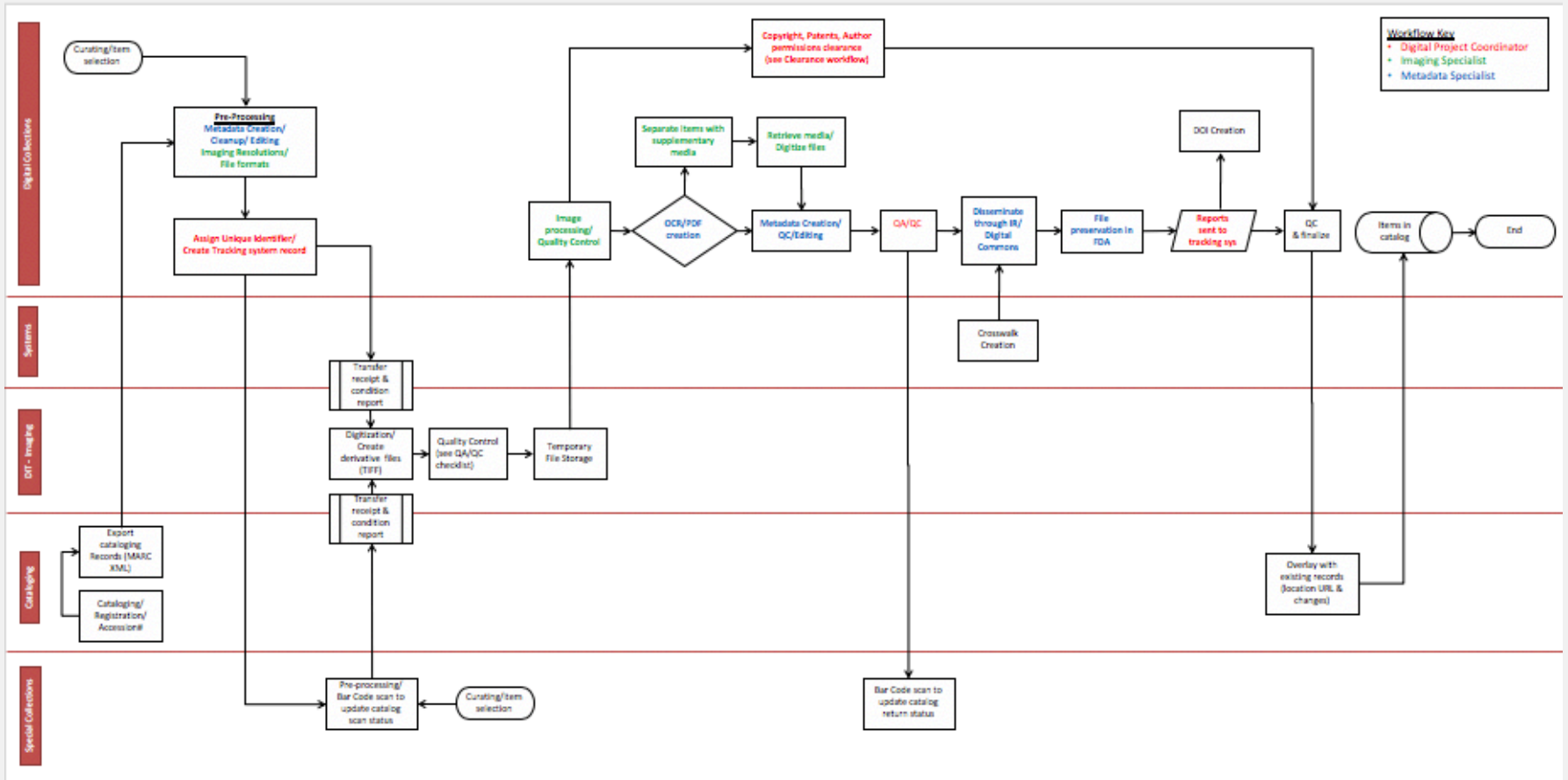
College of Engineering and
Applied Sciences

Environmental and
Urban Systems

Major/Program

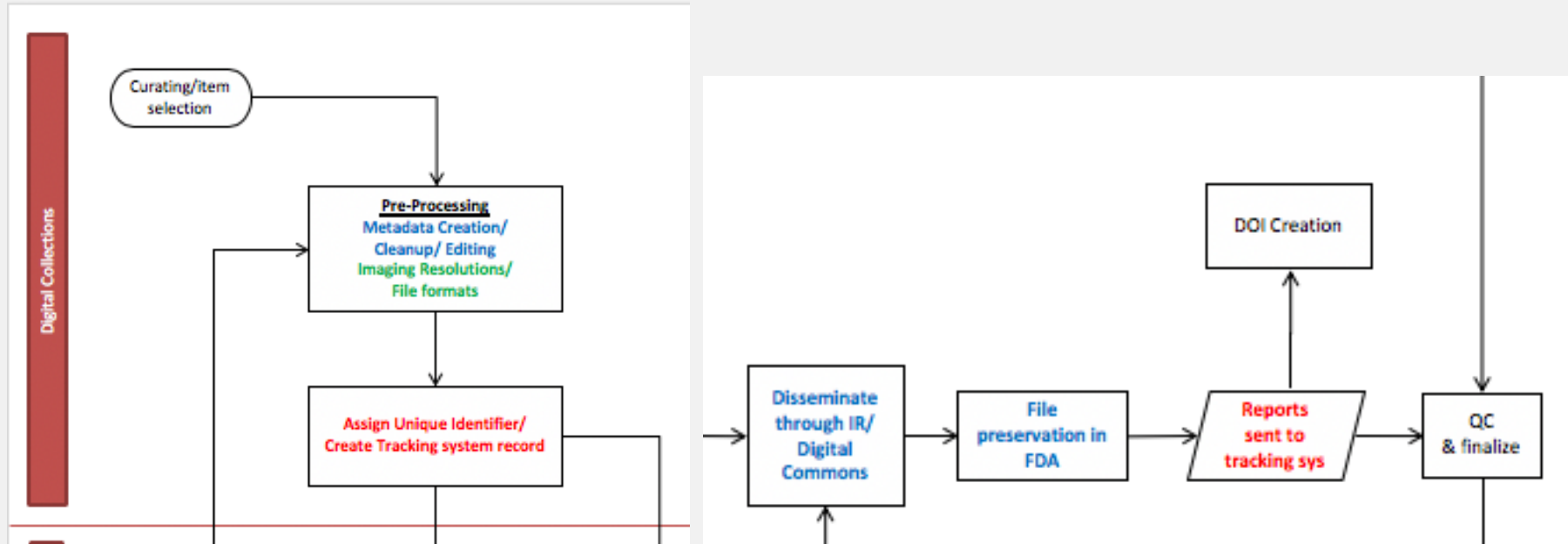
Environmental Studies

DOI Workflow



DOI Workflow

	W	X	Y	Z	AA	AB	AC	
1	keywords	publication date	embargo date	disciplines	abstract	doi	identifier	orcid
2		1995-04-04 00:00	1995-04-04 00:00	Sociology	<p>Humans have u	10.25148/etd.FI07091101	FI07091101	
3	General Game Play	2007-10-18 00:00		Other Computer Sci	<p>Computer Game	10.25148/etd.FI08081528	FI08081528	
4	Hurricanes, Structur	2007-05-30 00:00			<p>The first essay c	10.25148/etd.FI08081512	FI08081512	
5	wave variable techn	2007-11-14 00:00			<p>While the robots	10.25148/etd.FI08081514	FI08081514	
6	neural network, sign	2007-11-21 00:00			<p>As traffic conge	10.25148/etd.FI08081515	FI08081515	
7	Survey, Boaters, Me	2003-11-13 00:00			<p>Scientists are ex	10.25148/etd.FI08081517	FI08081517	
8	teachers' espoused	2001-05-22 00:00			<p>The purpose of	10.25148/etd.FI08081518	FI08081518	
9	FEM, fatigue, heart	2007-11-01 00:00			<p>The durability of	10.25148/etd.FI08081519	FI08081519	



Questions and comments?

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