

Data Stewardship at Delft University of Technology

Dr. Heather Andrews

A satellite with large solar panels is shown in orbit above the Earth's atmosphere. The sun is visible in the upper left, creating a bright glow and lens flare. The Earth's surface is visible below, showing clouds and landmasses.

Data Steward at the Faculty of Aerospace Engineering
Delft University of Technology

Outline

A bit about Delft University of Technology

Data Stewardship

Data Steward support at University Level

Data Steward support at Faculty Level



Delft University of Technology (TU Delft)



TU Delft Faculties

AE - Aerospace Engineering

AS - Applied Sciences

ABE - Architecture and the Built Environment

CEG - Civil Engineering and Geosciences

EEMCS - Electrical Engineering, Mathematics & Computer Sciences

IDE - Industrial Design Engineering

3mE - Mechanical, Maritime and Materials Engineering

TPM - Technology, Policy & Management

TU Delft

- 8 Faculties
- +24000 students
- +2500 PhDs
- 265 Full Professors
- +6200 publications
- 23 Startups
- 22% Female faculty staff
- 37% International faculty staff
- 28% Female students
- 23% International students

Facts & Figures 2019/2020

<https://www.tudelft.nl/en/about-tu-delft/facts-and-figures/>

Data Stewardship Program

Goal:

Create mature working practices and policies for Research Data Management (RDM) across the campus at TU Delft

Key to this:

Solutions need to be discipline-specific

Set-up:

Strategic coordination from the Library
Data stewards are embedded in the faculties



Data Stewardship Program

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In practical terms, this currently means: create **awareness**, provide **training** and establish **workflows/practices**.



Data Stewardship – Why?

Increasing **amount** of digitalized data

More **transparency** in research

More **efficiency** when re-using research data

To be aligned with **funder's requirements** (NWO, ZonMW, EC)



Data Stewardship – How?

Initially financed by the Executive Board:

- 0.5 FTE per Faculty until December 2018
- 1.0 FTE per Faculty from January 2019 until December 2020
- Starting 2021, each faculty could decide how to provide research data/code management support

Teperek, M., Cruz, M. J., Verbakel, E., Bohmer, J., Dunning, A. (2018). Data Stewardship: Addressing Disciplinary Data Management Needs. *International Journal of Digital Curation* 13(1). doi: <https://doi.org/10.2218/ijdc.v13i1.604>

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First faculties : AE, CEG and EEMCS

Last faculty: IDE

Currently all data stewards financed by the faculties

Teperek, M., Cruz, M. J., Verbakel, E., Bohmer, J., Dunning, A. (2018). Data Stewardship: Addressing Disciplinary Data Management Needs. International Journal of Digital Curation 13(1). doi: <https://doi.org/10.2218/ijdc.v13i1.604>

Data Stewards

Data Stewards
Coordinator

University

Faculty

Faculty Secretary
(Strategic advisor
of the Dean)

TU Delft Library – Research Data Services

Human Research Ethics Committee

ICT and Facility Management

Graduate School

Contract Manager(s)
(Legal Services)

IT Manager
(ICT and Facility Management)

Graduate School Faculty Director
(Graduate School)

Communication Team
(Communication)

Valorisatie Centrum

Data Stewards

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of the Dean)

Training, policy,
4TU.ResearchData

Library – Research Data Services

Personal
data workflow

Human Research Ethics Committee

Implementation
of new services

ICT and Facility Management

Training, policy
compliance, DMP

Graduate School

Sensitive data, data
transfer agreements,
projects

Valorisatie Centrum

Contract Manager(s)
(Legal Services)

IT Manager
(ICT and Facility Management)

Graduate School Faculty Director
(Graduate School)

Communication Team
(Communication)

Information
about projects

Information
about services

Training, policy
compliance, DMP

Dissemination
of news

Data Stewards



H. Andrews
Faculty of Aerospace
Engineering



Y. Turkyilmaz-van der Velden
Faculty of Mechanical, Maritime
and Materials Engineering



K. den Heijer
Faculty of Civil Engineering
and Geosciences



N. Dintzner
Faculty of Technology,
Policy and Management



J. Love
Faculty of Industrial
Design Engineering



D. Popa
Faculty of Architecture and
the Built Environment



E. Plomp
Faculty of Applied Sciences



S. Ilamparuthi
Faculty of Electrical
Engineering, Mathematics
and Computer Science



Y. Wang
Data Stewards Coordinator

<https://www.tudelft.nl/en/library/research-data-management/r/support/data-stewardship/contact>
<https://openworking.wordpress.com/category/rdm-support-work/>
<https://openworking.wordpress.com/2019/02/20/data-stewardship-goals-for-2019/>

Data Steward support at University Level

Data Steward – University Level – Policy Development

TU Delft Research Data Framework Policy published

NEWS - 21 OCTOBER 2018

On 26 June 2018, the [TU Delft Research Data Framework Policy](#) was approved by TU Delft's Executive Board. [The Framework Policy](#) is an overarching policy on research data management for TU Delft as a whole and it defines the roles and responsibilities at the University level. In addition, the Framework provides templates for faculty-specific data management policies.

From now on, the deans and the faculty management teams, together with the [Data Stewards](#), will lead the development of faculty-specific policies on data management which will define faculty-level responsibilities.

If you are working at TU Delft and if you would like to be involved in the development of faculty-specific policies, please do get in touch with the relevant [Data Steward](#).



<https://doi.org/10.5281/zenodo.4088123>

Data Steward – University Level – Policy Development



Decision tree: When can TU Delft staff members apply an open source licence to software?

<https://doi.org/10.5281/zenodo.4629661>
<https://doi.org/10.5281/zenodo.4629635>

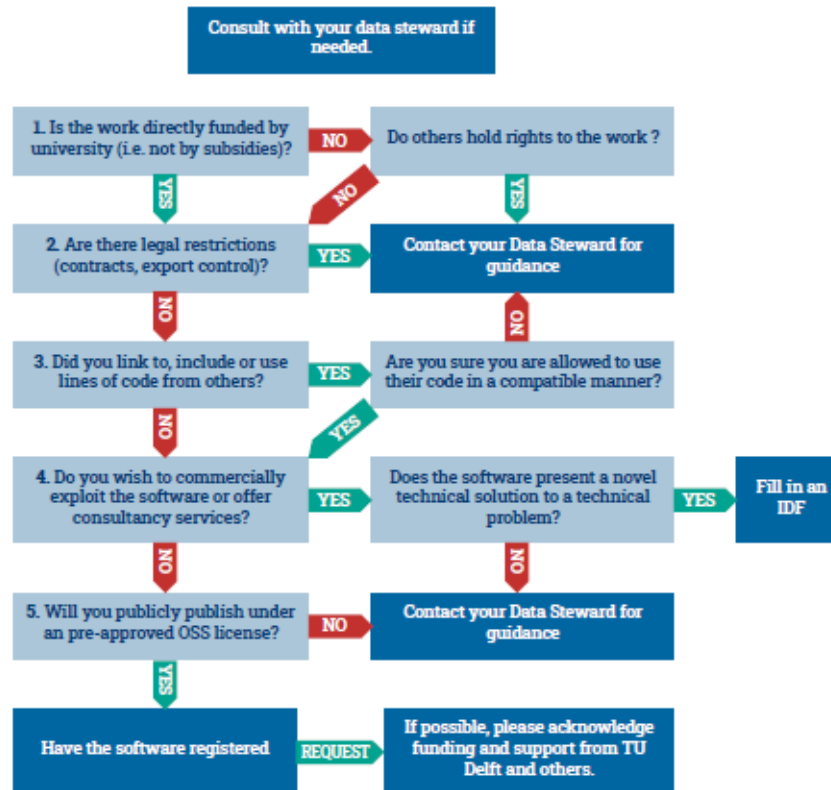


Figure 1. Decision tree to guide software developers, researchers and staff on when they can apply an open source licence to their software. OSS: Open Source Software, IDF: Invention Disclosure Form³. Steps 1- 5 are described in detail in Chapter 4.1 of the ["TU Delft Guidelines on Research Software: Licensing, Registration and Commercialisation"](#)¹⁰

Data Steward – University Level – **Data Champions**



Illustration by Connie Claire

A [Data Champion](#) is a researcher who promotes proper data/code management practices at research group level.

Voluntary initiative.

[Open Science Community Delft](#)

> 40 Data Champions

<https://openworking.wordpress.com/data-champions/>

Data Steward – University Level – Training

Training for Researchers



Software Carpentry
workshop



Data Carpentry
workshop



Code Refinery
workshop



Research Data
Management 101



MOOC Open Science

Data Steward – University Level – Research Workflows

<https://dmponline.dcc.ac.uk/>



Welcome

This instance of DMPonline is provided by the TU Delft to help you write data management plans. To access funders' guidance along with the tailored guidance from the TU Delft, you have to first create an account and then log in with your TU Delft credentials.

If you have trouble creating an account or logging in, please contact rdm-support@tudelft.nl

Sign in Create account

* Email

* Password

[Forgot password?](#)

Remember email

Sign in

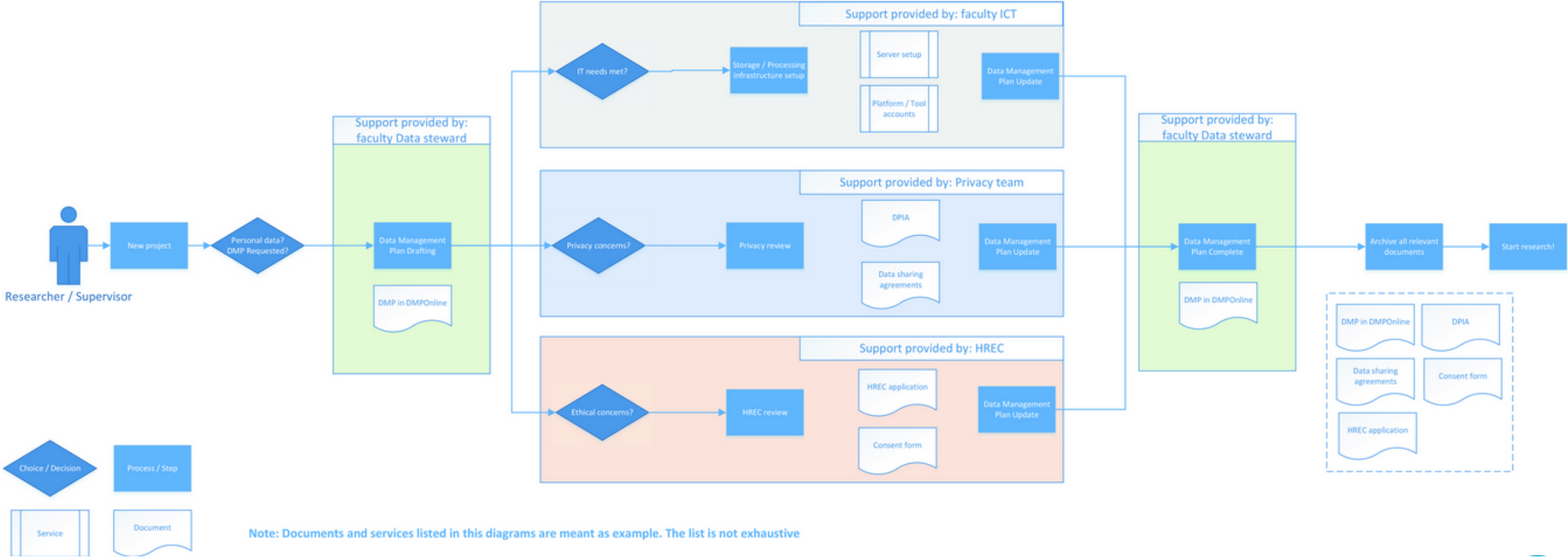
- or -

Sign in with your institutional credentials

<https://dmponline.tudelft.nl>

Data Steward – University Level – Research Workflows

Personal Research Data Workflow



<https://www.tudelft.nl/en/library/research-data-management/r/manage/confidential-data/personal-data>

Data Steward – University Level

<https://www.tudelft.nl/en/library/research-data-management>

TU Delft policies

Data Champions

RDM training for all faculties

Research Data Workflows

Feedback about services (TU Delft Gitlab, ELNs)

Events <https://openworking.wordpress.com/>

Collaborations at national and international level (Data Archiving and Networked Services DANS, eScience Center, Landelijk Coördinatiepunt Research Data Management LCRDM, Research Data Alliance RDA)

Data Steward support at Faculty Level

Data Steward – Faculty Level – First point of contact for RDM

Data Stewardship
Faculty of Aerospace Engineering, TU Delft

Dr Heather Andrews
H.E.andrewsmancilla@tudelft.nl

Office NB 1.60
Mon & Fri: 10:00-17:00
Tue to Thu: 10:00-12:00



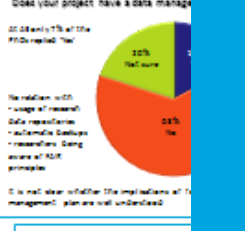
Quantitative assessment of research data management practice

Is your research data automatically backed up?



80% of respondents have a data management plan (DMP) in place. The plan is not always fully understood or implemented in a systematic fashion in other words, it appears that a significant number of researchers are not automatically backing up their data in a systematic fashion.

Does your project have a data management plan?



80% of respondents have a data management plan (DMP) in place. The plan is not always fully understood or implemented in a systematic fashion in other words, it appears that a significant number of researchers are not automatically backing up their data in a systematic fashion.

Are you aware of funders' expectations for Findable, Accessible, Interoperable and Reusable (FAIR) data?



80% of respondents have a data management plan (DMP) in place. The plan is not always fully understood or implemented in a systematic fashion in other words, it appears that a significant number of researchers are not automatically backing up their data in a systematic fashion.

Do you know who owns the research data that you are creating?



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Open Access Publishing (policy)

Open Access Datasets

Publication Manuscript

Publication related Data-Files

Pure | TU Delft

Altmetric

LINK To Data-DOI in

LINK To Paper-DOI in

Submit your journal article / doctoral thesis to the TU Delft Research Repository through PURE

→ Send the DOI and the peer reviewed non-copyright version to Pure-LR-lib@tudelft.nl

<https://repository.tudelft.nl/>

TU Delft research repository

education repository

cultural heritage repository

Services, regulations, DMP, DM section of proposals, training opportunities, proper practices, publishing/archiving.

Data Stewardship at Faculty of Aerospace Engineering

IF YOU WANT TO AVOID THIS...

Problems going back to old data

OH NEE!!

Problems sharing data

CRY NOW

NO ACCESS!!

WHAATTTT MYYYY??

NOOOOOOOOOOO!!! NOT THE BLUE SCREEN OF DEATH


AND YOU WANT HELP WITH

Long term data access

Linking datasets to your publications

And much more!!!

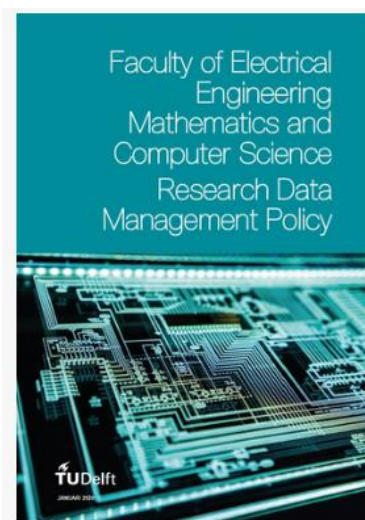
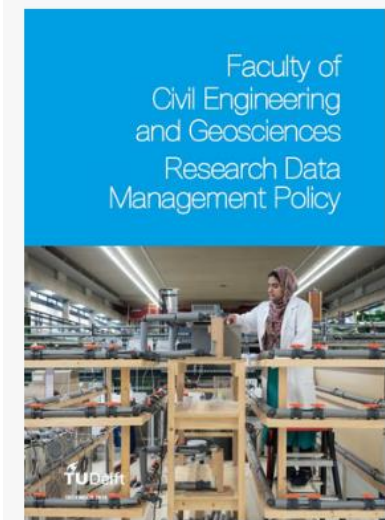
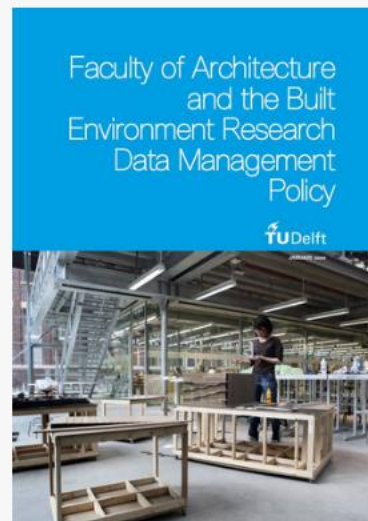
YOU BETTER CONTACT THE DATA STEWARD



H.E.Andrewsmancilla@tudelft.nl

Office Tue 10:00-18:00
NB 1.60 Wed, Thu 10:00-17:00

Data Steward – Faculty Level – First point of contact for RDM



Develop RDM faculty policy
and guide its implementation

Data Steward – Faculty Level – Inform

Inform researchers about [available services](#) and [infrastructure](#) for data/code management.

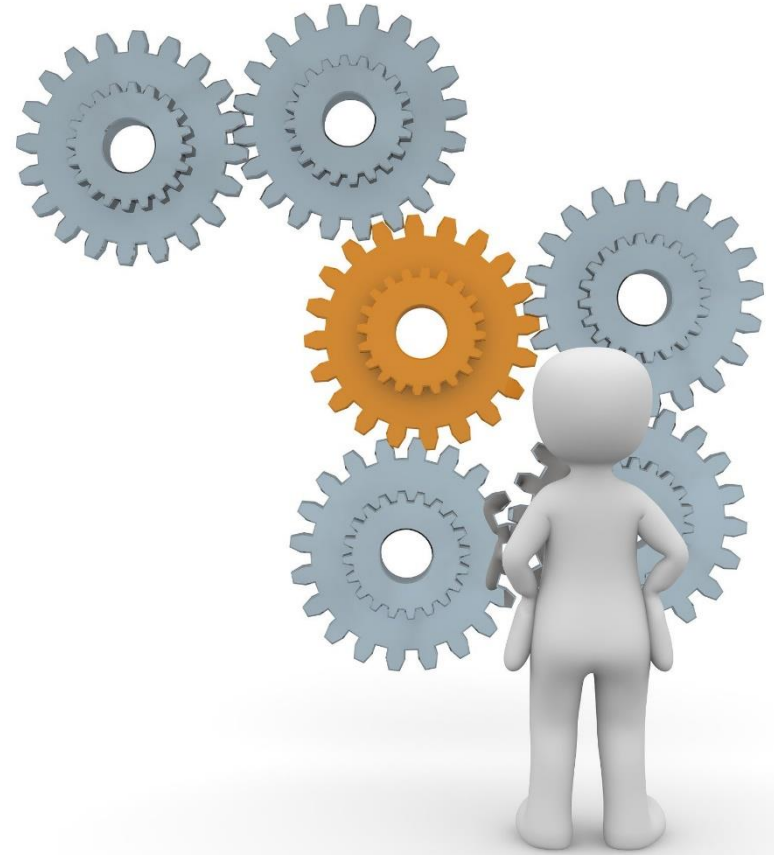


Image by [Peggy und Marco Lachmann-Anke](#) from [Pixabay](#)

Data Steward – Faculty Level – Project Support

Project Chain @ AE Faculty



proposal (services, cost) - DMP/H/POPD deliverables - training - data sharing/publishing compliance

Data Steward – Faculty Level – Faculty Training

Train researchers in [data/code management](#)

Purpose

The aim of this Wiki is to provide basic guidelines to **properly code** and **promote open source code** at **Aerospace Structures and Computational Mechanics (ASCM)** section.

```
177     default="y",
178     )
179     global_scale_setting = FloatProperty(
180     name="Scale",
181     min=0.01, max=1000.0,
182     default=1.0,
183     )
184 )
185 def execute(self, context):
186
187     # get the folder
188     folder_path = (os.path.dirname(self.filepath))
189
190     # get objects selected in the viewport
191     viewport_selection = bpy.context.selected_objects
192
193     # get export objects
194     obj_export_list = viewport_selection
195     if self.use_selection_setting == False:
196         obj_export_list = [i for i in bpy.context.scene.objects]
197
198     # deselect all objects
199     bpy.ops.object.select_all(action='DESELECT')
200
201     for item in obj_export_list:
202         item.select = True
203         if item.type == 'MESH':
204             file_path = os.path.join(folder_path, "{}.obj".format(item.name))
205             bpy.ops.export_scene.obj(filepath=file_path, use_selection=True,
206                 axis_forward=self.axis_forward_setting,
207                 axis_up=self.axis_up_setting,
208                 use_animation=self.use_animation_setting,
209                 use_mesh_modifiers=self.use_mesh_modifiers_setting,
210                 use_edges=self.use_edges_setting,
211                 use_smooth_groups=self.use_smooth_groups_setting,
212                 use_smooth_groups_bitflags=self.use_smooth_groups_bitflags_setting,
```

10 Steps to Long-term Archive Research Data

Dr. Heather Andrews

MSc. Yasemin Turkylmaz-van der Velden



Research Data Management & Working with Personal Data

16 May 2019



Yasemin Turkylmaz-van der Velden & Esther Plomp

Data Stewards @ TU Delft Faculties of

Mechanical, Maritime and Materials Engineering & Applied Sciences

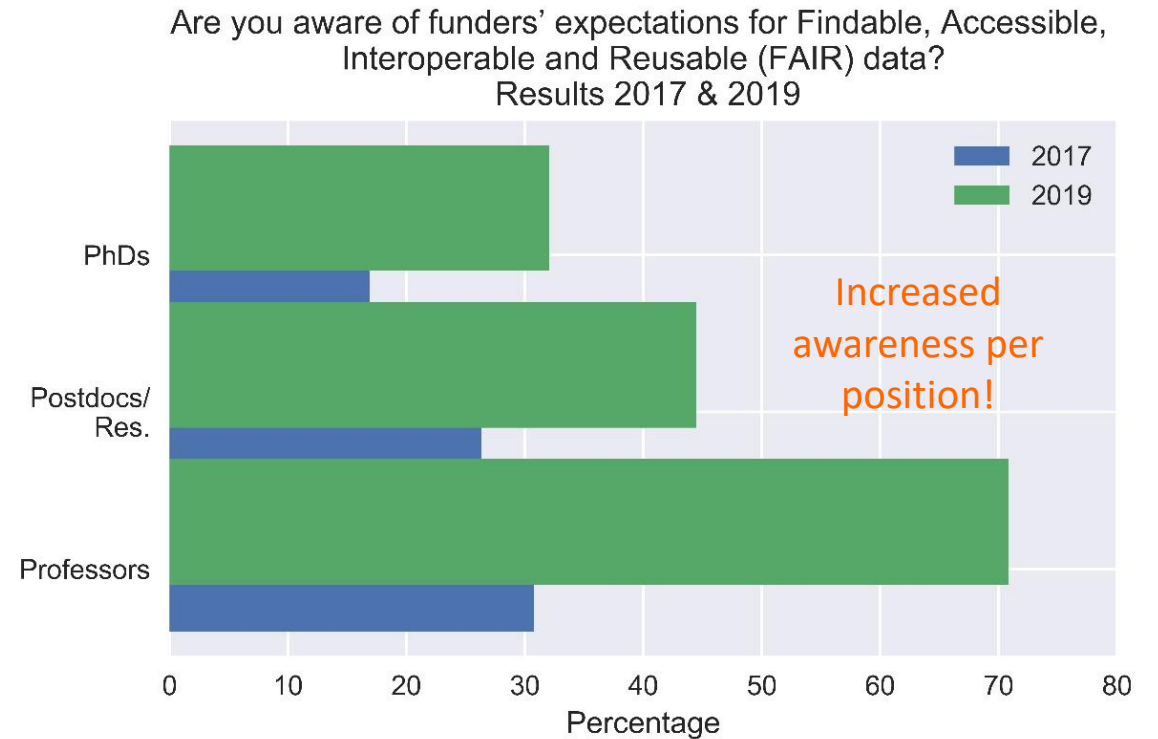
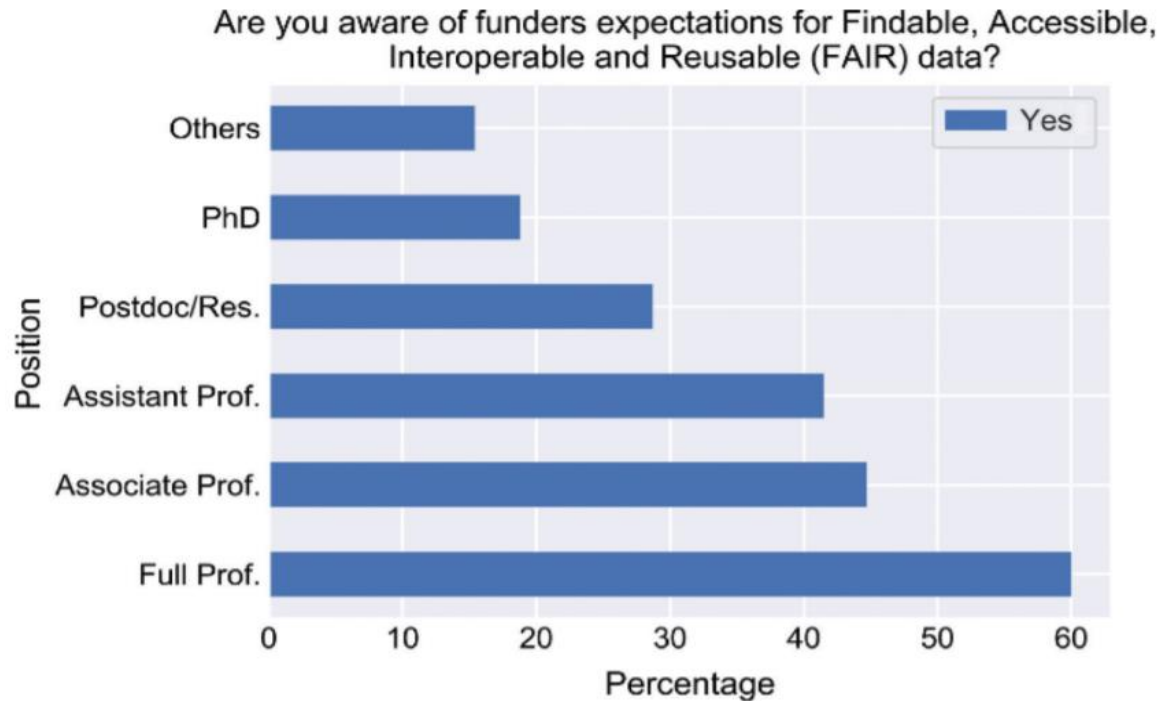
y.turkylmaz-vandervelden@tudelft.nl & E.Plomp@tudelft.nl

[@YaseminTurkylm](https://twitter.com/YaseminTurkylm) & [@PhDToothFAIRy](https://twitter.com/PhDToothFAIRy)

Slides are available: <https://doi.org/10.5281/zenodo.2861550>

Data Steward – Faculty Level – Assess Needs

Assess faculty needs in terms of RDM



Results RDM Survey 2017-2018:

Andrews Mancilla, H., et al. 2019. *LIBER Quarterly*, 29(1), pp.1–27.

DOI: <http://doi.org/10.18352/lq.10287>

Results only for Faculty of Aerospace Engineering at TU Delft

Data Steward – Faculty Level – Discipline Specific Workflows/Initiatives

Develop discipline specific workflows or initiatives

Faculty of Electrical
Engineering,
Mathematics and
Computer Science



DEVELOPMENT OF A DATA ACCESS
COMMITTEE

<https://community.data.4tu.nl/tag/data-access-committee/>

What will you find here?

Faculty of Aerospace
Engineering

In the following pages you will find:

- The **Coding Survival Kit (CSK)** which includes introductory material and references to:
 - Unix Shell commands
 - Version control with Git
 - Project structure
 - Code writing conventions
- Useful **Extra material** related to:
 - Environment variables
 - Make command
 - Machine learning (ML) - *under construction*
 - Optimization algorithms - *under construction*
 - Powerful libraries - *under construction*
- Guidelines on what to do once you **finish a project**.
- Guidelines on **practicalities** of coding at ASCM including:
 - Cluster handbook - *under construction*
- Information about **training** possibilities
- Guideline on **how to contribute to the Wiki**

Data Stewards work at **two fronts**:
central **university** and **faculties**

The End