National Coordination of Data Steward Education in Denmark: next steps

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Agenda

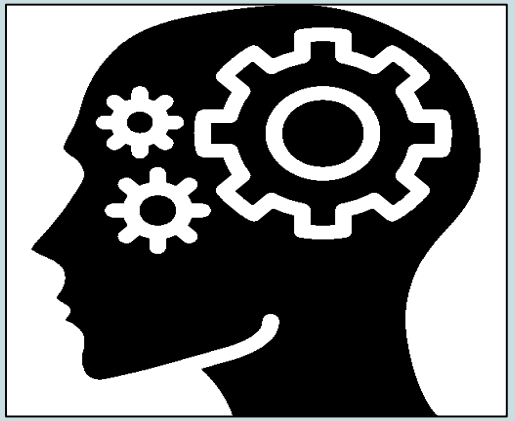
- Brief overview of the Danish national project on Data Stewardship education
- 1 year master in Data Stewardship at Copenhagen University
- Initiatives pushing for professionalisation of Data Stewardship

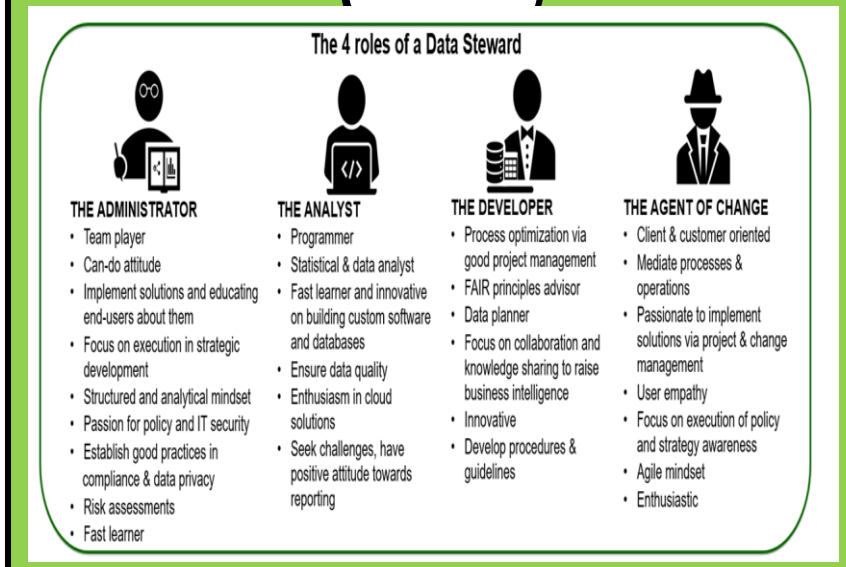
1: Review of existing DS educations & certifications

2: Job profiles of DS in Denmark

3: Analysis of job vacancies

4: Natio
& interviews





Collaboration with academia & industry = relevant educations

Course components should support 4 data steward roles

Soft skills need to be taught alongside hard skills

Experiential pedagogies & best practices

Standardized, well defined concepts

Data Steward Education (UCPH), 1Y Master, 60 ECTS

	Autumn		Spring	
	Block 1	Block 2	Block3	Block 4
Yr. 1	Introduction to Data Science	Data modelling, management & security	Data analysis & processes	Elective
	Data Gov.	Elective	Project (15 ECTS)	

Prequalification accepted
Focus group interviews
Recruit students
Develop curricula
Implement master
(March 2021 enrollment)

47% know term Data Steward
52% unfamiliar

"so many of the terms are still completely interchangeable or incomprehensible to me.
I actually think this might be your biggest challenge to get this project flying….Finding a common language."

Preferred term	n
Don't know	37
Data manager	29
DPO	13
Data Steward	10
Data librarian	6
Information Management Specialist	4
Arkivar / Digitaliseringskonsulent	3
Data scientist	2
Dataansvarlig	2
IT specialists	2
Records manager	2
Consultant	2
Colleague	2
Administrative medarbejdere - IT	2
Project managers/ dept. coordinators	2
Business intelligence analyst	1
Data Engineers	1
Data handler	1
Data koordinator (coordinator)	1
Data specialists	1
Data/system owners	1
Datadisciple	1
IT Risk Management	1
IT-koordinator	1
Systemansvarlig or digitaliseringskonsulent	1
Projektmedarbejder	1
Research Data Officer	1
Research supporter	1

Professionalizing Data Stewardship IG

Eight task groups:

- a business case for data stewardship
- data stewardship terminology
- integration of data stewardship across an organisation
- job profiles for data stewards
- training for data stewards
- career tracks for data stewards
- networking and knowledge exchange
- certification

NPOS: professionalising data stewardship in the Netherlands: competences, training and education

https://www.openscience.nl/en/projects/project-f-professionalising-data-stewardship-competences-training-and-education

Report expected this fall

Landelijk Coördinatiepunt Research Data Management

nationaal programma open science

ZonMw

Objectives	Deliverables	Ambition
National coordination on the competences and learning outcomes	Scoping document: target audience & glossary	Endorsement of overview of competences by national stakeholders
	Case studies for training and education, incl. certification	Towards national framework(s) for competences
	Competences of data stewards, incl. human resource (HR) profiles (UFO, FUWAVAZ, Hay)	Towards national framework(s) for curriculum for data professionals
A well-annotated and searchable overview of training	Inventory of training resources, including pilot annotation with competences	Data steward skills tool development
	Design for a data steward skills tool, including (self-)assessment & pointers to training resources	Strategy for tool dissemination

An innovative, bottom up project (via LCRDM task groups, www.lcrdm.nl), with in kind contributions from the main national stakeholders (RPOs, funders, SURF (e-infra))

Slides courtesy of Mijke Jetten: https://zenodo.org/record/4073095

Competency mapper. https://competency.ebi.ac.uk/

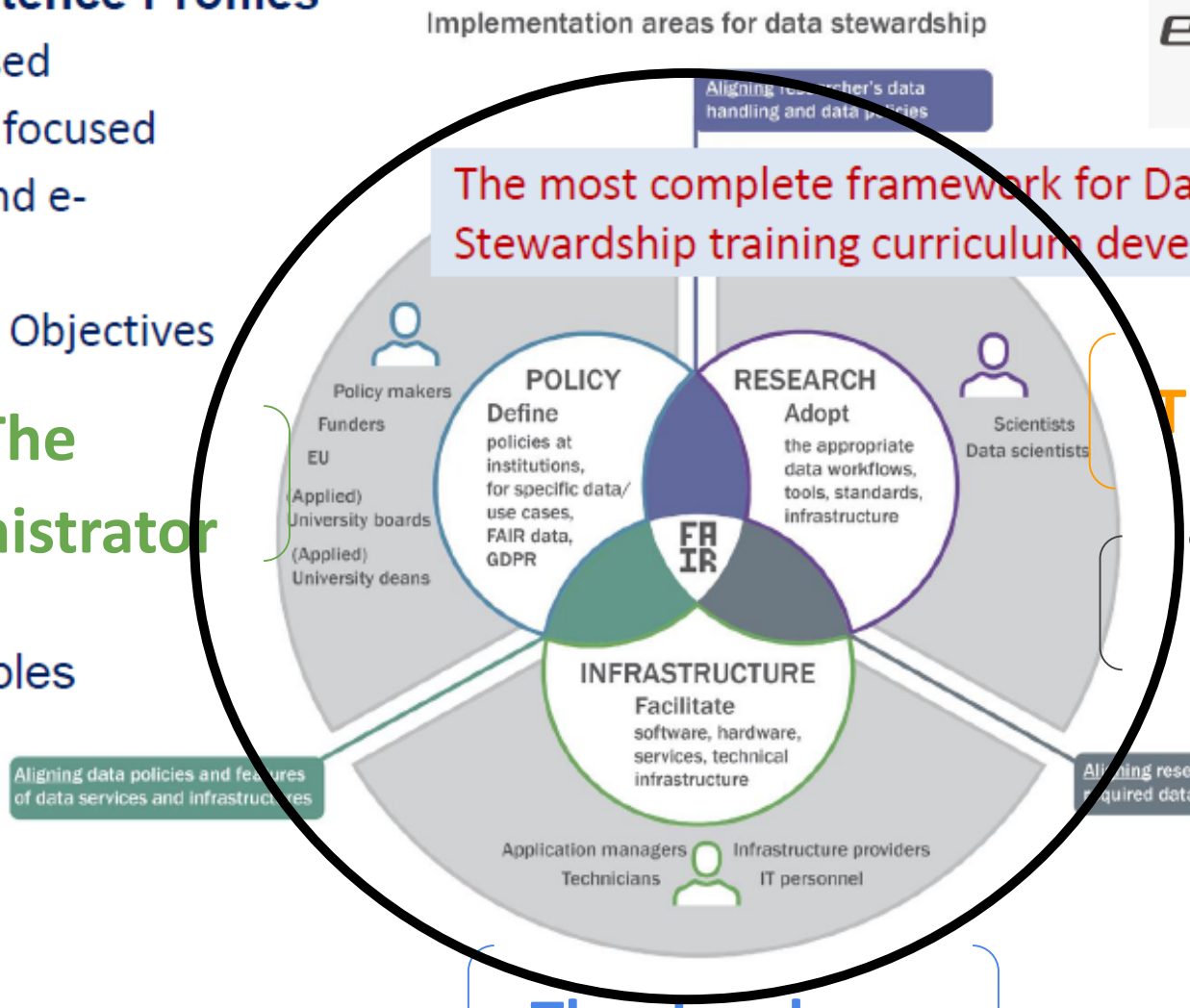
Data Stewardship Competencey Framework

Data Steward Roles and Competence Profiles

- **Policy:** institute and policy focused
- **Research:** project and research focused
- **Infrastructure:** data handling and e-infrastructure focused
- Activities – Knowledge – Learning Objectives

Competence groups
1) Policy/Strategy
2) Compliance
3) Alignment with FAIR data principles
4) Services
5) Infrastructure
6) Knowledge Management
7) Network
8) Data sharing

The administrator



The most complete framework for Data Stewardship training curriculum development

The analyst

The agent of change

The developer

ZonMw/ELIXIR-NL: towards data stewardship as a profession in the life sciences

Table 3. Overview of the eight defined competence areas for all data steward roles

Competence area	This concerns
Policy/strategy	Development, implementation and monitoring of research data management policy and strategy for the research institute
Compliance	Compliance to the Netherlands Code of Conduct for Academic Practice, the Netherlands Code of Conduct for Research Integrity, the General Data Protection Regulation (GDPR), and other relevant legal and ethical standards
Alignment with FAIR data principles	Alignment to the FAIR data principles and the principles of Open Science
Services	Availability of adequate support on research data management, in staff or services
Infrastructure	Availability of adequate data infrastructure for research data management
Knowledge management	Adequate level of knowledge and skills on research data management within the institute, department or project
Network	Obtaining and maintaining a network of aligned expertise areas and relevant departments and organisations inside and outside the institute, department or project
Data archiving	Adequate support and data infrastructure for FAIR and long-term archiving of data of the institute, department or project

Slides courtesy of Mijke Jetten: https://zenodo.org/record/4073095

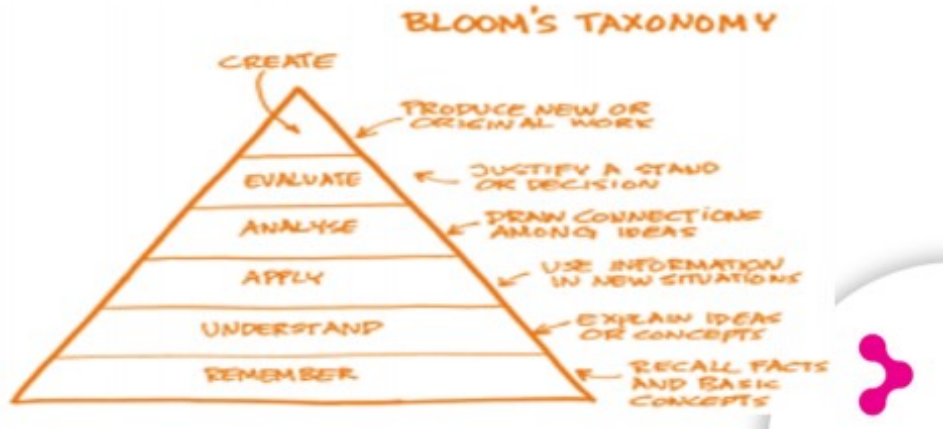
ZonMw/ELIXIR-NL: towards data stewardship as a profession in the life sciences

Table 1: Examples for the *policy* data steward

RESPONSIBILITIES	EXAMPLES OF ACTIVITIES/TASKS
POLICY/STRATEGY Responsible for advice on and development, implementation and monitoring of a RDM policy and strategy for the research institute, which includes the complete research data life cycle and supports FAIR data and Open Science, in alignment with the relevant stakeholders and within financial and legal constraints, within the institute and in the context of the institute. The policy is the basis for (project) DMPs.	• Develops, implements and monitors the institute's RDM policy. • Advises the institute's management on short- and long-term actions to advance RDM in the institute. • Assesses and monitors the institute's time and financial investments in relation to the institute's needs for RDM. • Explores new needs, opportunities and trends in RDM.
COMPLIANCE Responsible for compliance of the RDM policy to the Netherlands Code of Conduct for Academic Practice, the Netherlands Code of Conduct for Research Integrity and the General Data Protection Regulation (GDPR), as well as continuous alignment with legal and ethical standards.	• Ensures compatibility of the RDM policy and monitors compliance. • Contacts the institute's privacy officer, legal advisors or ethical board in case of questions regarding compliance. • Translates policies from legal/privacy officer to the institute's practice.
ALIGNMENT WITH FAIR DATA PRINCIPLES Responsible for alignment of the RDM policy to the FAIR data principles and the principles of Open Science.	• Pursues and advises on the findability (F) of data, including adequate data-infrastructure and tools, persistent identifiers and rich (discipline-specific) metadata standards. • Pursues and advises on the accessibility (A) of (meta)data to potential (re)users. • Pursues and advises on the interoperability (I) of data, including broadly applicable languages, vocabularies and other standards. • Pursues and advises on the reusability (R) of data, including documentation and licenses with the conditions for reuse, data licenses, and IP rights.

Table 2: Example of learning objectives following Bloom's taxonomy

RESPONSIBILITY
Compliance
SKILL/ABILITY
- Translate RDM policy and legislation and codes of conduct with regard to research data to practical implications and guidelines that researchers can understand.
LEARNING OBJECTIVES
- List relevant legislation, ethical principles, and codes of conduct for RDM (remembering). - Examine and list the practical implications of legislation, ethical principles, and codes of conduct with regard to research data (analysing). - Translate RDM policy and legislation, ethical principles, and codes of conduct with regard to research data to researchers (applying). - Create guidelines and procedures based on legislations, ethical principles, and codes of conduct with regard to research data (creating).



FAIRSFAIR
Fostering Fair Data Practices in Europe

EDISON
building the data science profession

Building FAIR Data Competence Framework for Higher Education as a way to professionalize Data Stewardship (FAIRsFAIRT7.3 work)

- Landscape overview: Data Management, Data Stewardship, FAIR management
  RDA Education & training in Data Handling IG, EDISON, European Framework for Research Careers, Competency matrix for DM skills, DCC RISE, Open Science Careers assessment matrix
- Mapping between existing Data Stewardship and FAIR competences definition
- Proposed FAIR4HE structure
  - Building on the EDSF and Data Steward professional profile

Outcomes of the FAIR4HE workshop on Data Stewardship

There is a lack of teachers to teach FAIR data stewardship to DS!

- DS need to teach FAIR & different stages of Academic Career (BA to PHD).
- Communicate what is minimum knowledge required at each level and in disciplines
- Generic need for disciplinary specialisations, translation into guidelines, resources, networks should be feasible.

FAIRSFAIR
Fostering Fair Data Practices in Europe

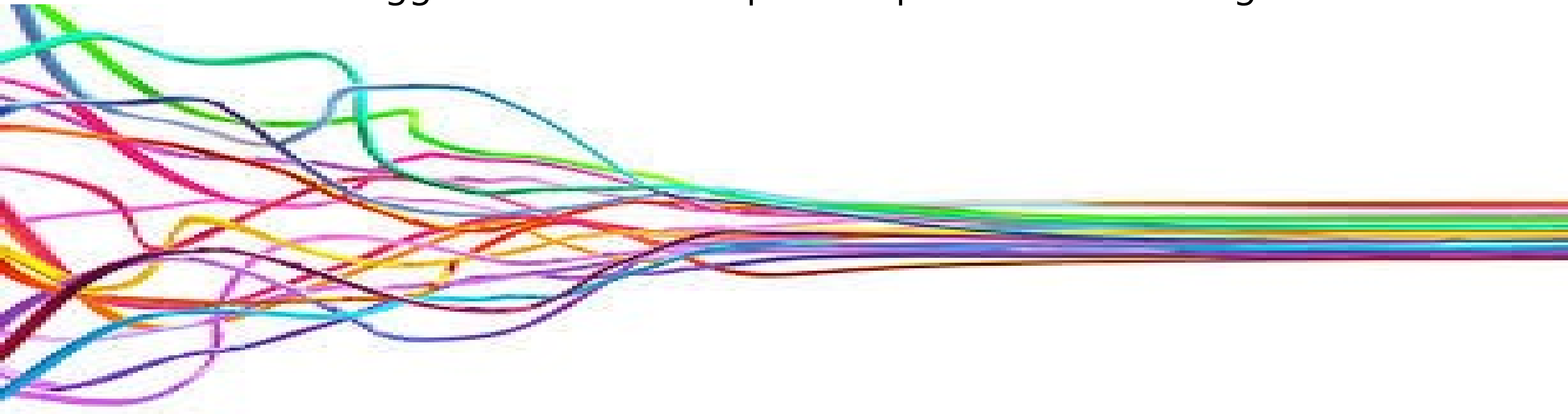
Findings from RDA task group meeting 10th november

- How to organise the groups, interdependencies (Plenary 9th nov.)
- How not to reinvent the wheel
- Partnerships (Eliksr & FAIRsFAIR life science) Dariah (humanities) ICPSR (Social Sciences)
- Interoperability of training catalogues
- Learning pathways depending on different data stewardships

Get involved:
https://www.rd-alliance.org/get-involved.html

Conclusions & Lessons Learned

- Developing accredited education is a long process
- Collaboration is key in educational design
- We need cooperation between communities
- We need interoperability between projects.
- We need to suggest additional steps to implement terminologies



Reference Slides

Competency Hub
https://competency.ebi.ac.uk/

Competency matrix for DM skills
https://microblogging.infodocs.eu/wp-content/uploads/2019/08/Skills-Standards-and-Sapp-Nelsons-Matrix.pdf

Data Steward Education in Denmark
https://zenodo.org/communities/ds-edu-dk?page=1&size=20

DCC RISE
https://www.dcc.ac.uk/guidance/how-guides/RISE

DeIC (Danish eInfrastructure Coorporation)
https://www.deic.dk/en

EDISON
https://edison-project.eu/edison/edison-data-science-framework-edsf/

- **European Framework for Research Careers**
  https://www.more3.eu/indicator-tool/career-stages-r1-to-r4
- **FairsFair**
  https://www.fairsfair.eu/
  FAIR data steward competencies:
  https://github.com/EDISONcommunity/EDSF/blob/master/presentations/fsf2020-10-wsh-design-fair4he-v01.pdf
- **Fair4S**
  https://eosc-fair4s.github.io/
- **NPOS: professionalising data stewardship in the Netherlands:**
  https://www.openscience.nl/en/projects/project-f-professionalising-data-stewardship-competences-training-and-education

- **OSPP Rewards**
  https://ec.europa.eu/research/openscience/pdf/os_rewards_wgreport_final.pdf#view=fit&pagemode=none
- **RDA professionalising data stewardship IG:**
  https://www.rd-alliance.org/groups/professionalising-data-stewardship-ig
- **RDA Education & training in Data Hadling IG**
  https://www.rd-alliance.org/groups/education-and-training-handling-research-data.html
- **Towards data stewardship in Elixir**
  https://elixir-europe.org/about-us/commissioned-services/towards-data-stewardship
- **ZonMw& ELIXIR-NL funded project "Towards FAIR Data Steward as profession for the Life Sciences"**
  All project output: https://zenodo.org/communities/nl-ds-pd-ls/
  Final report (Oct 3, 2019): https://doi.org/10.5281/zenodo.3471707