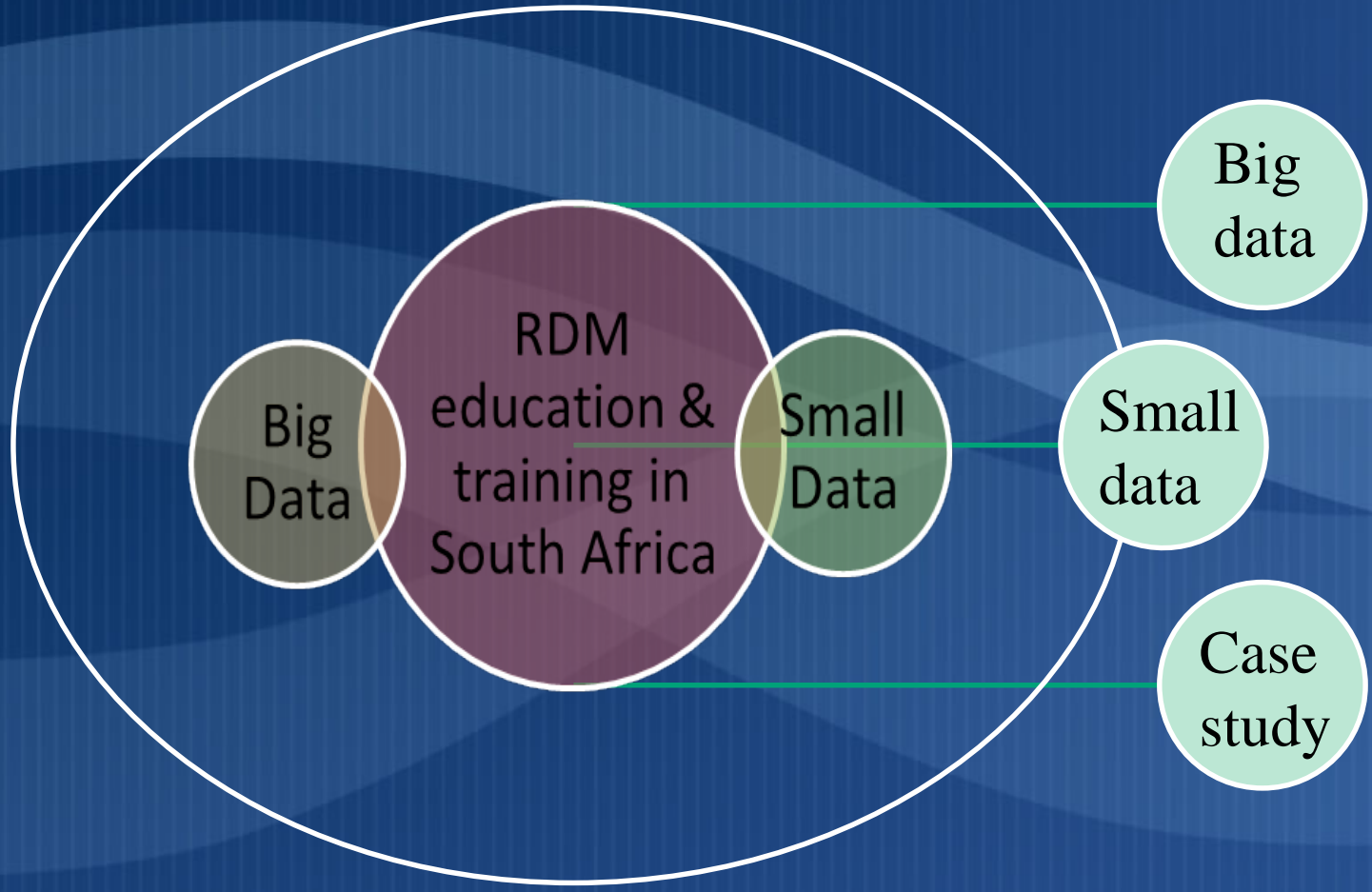


Mobilising a nation: RDM Education & Training in South Africa



Presented by Johann van Wyk at
eRA 2017

Content



International Square Kilometre Array project driving Big Data initiatives



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Featured News

Season's greetings from the SKA with the 2016 Advent Calendar

This year, in the run up to Christmas, the SKA Office is publishing an Advent Calendar featuring some of the main highlights of the past year for the project. We encourage you to check back daily as new windows of the calendar become accessible!

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Season's greetings from the SKA with the 2016 Advent Calendar

Outcomes of the 22nd SKA Board Meeting

Highlights from the SKA science conference in Goa

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- Shared Sky art exhibit



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Beyond the transformational science it will carry out – advancing’s humanity’s knowledge – the SKA will **collect and process vast amounts of data and will stimulate cutting-edge advances in high-performance computing and Big Data science – especially the processing, analysis and visualisation of very large data sets.**

Computer hardware and processing algorithms are being developed in many of the SKA countries, and there is a great deal of technology development and transfer, as well as the creation of very high-level skills. This mega-project is therefore an ideal platform to excite young people about careers in science, engineering and technology, and to deliver skills that will be in demand in the global knowledge economy of the future.

Big data education & training initiatives

- The Department of Science and Technology (DST) in South Africa has approved the establishment and funding of a **National e-Science Postgraduate Teaching and Training Platform** in September 2016. A curriculum for Big Data training will be made available in 2018 for implementation.
- The University of Pretoria (UP) is introducing a **Master's** degree in Information Technology (Stream C: **Big Data Science**) from 2017. From 2017, a UP **Data Science** stream in the **BSc IT** (Information and Knowledge Systems) degree program will also be offered.
- The University of the Witwatersrand (Wits) in Johannesburg is presenting a **BSc Honours** in the field of **Big Data Analytics**.
- The Sol Plaatje University in the Northern Cape Province is offering a Bachelor of **Science degree in Data Science**.

National Research Foundation (NRF) announcement driving Small Data initiatives

...that “from 01 March 2015 authors of research papers generated from research funded by the NRF ... deposit their final peer-reviewed manuscripts to ... Institution Repository. The data supporting the publication should be deposited with a DOI in an Open repository”

Small data formal education & training initiatives

- The Library and Information Study Centre (LISC) at the University of Cape Town (UCT) are presenting several courses in data curation and RDM. It is the first university in Africa to offer a full **Masters course specialising in Digital Curation**. A short course in Research Data Management is also offered on an annual basis.
- The Information Science department at UP is responsible for a Carnegie-funded training programmes for African Librarians. An **M. IT** in Librarianship (Stream B) and a Continuing Professional Development (**CPD**) programme for Librarians are offered. Both programmes include one **module in RDM** training.

Small data **informal** education & training initiatives

- The **Network of Data and Information Curation Communities (NeDICC)** Community of Practice (CoP) is an informal network for RDM practitioners in SA universities and research councils.
- NeDICC members are involved in the **UP M.IT and CPD training**, and as external examiners for the UCT M. Phil in Digital Curation.
- NeDICC is also involved in the RDM track in the annual **e-Research conference** in SA (<http://www.eresearch.ac.za/>).
- **NeDICC has a programme each year for training and workshop opportunities conducted by SA & external trainers.**

NeDICC workshops 2016: hands-on & virtual

- The life of research data and a **roadmap** to enable the **implementation of services** to support RDM.
- Data management **planning**.
- The role of the information professional in **researcher engagement**.
- **Evaluation** of research data repository applications.
- A library carpentry initiative focussing on the **cleaning of data** with Open Refine.

NeDICC Programme 2017

Date	Activity	Topic
26 January 2017	CoP Meeting	The implementation of an Institutional Data Repository (UCT: Kayleigh Roos, Erika Mias)
15 February 2017	NeDICC Workshop	Long-lived Data: Tools to Preserve Research Data (UP: Johann van Wyk and Isak van der Walt)
14 June 2017	NeDICC Workshop	Data Information Literacy (US)
19 July 2017	NeDICC Workshop	Data Discovery and Metadata (UNISA)
16 August 2017	CoP Meeting	
13 September 2017	NeDICC Workshop	(UCT)
18 October 2017	NeDICC Workshop	Trustworthy Data Repository Certification (CSIR, HSRC)
16 November 2017	CoP Meeting	

Codata workshop on Data Citation: Dec 2015



Case study: evaluation of a training intervention (M.IT mini-dissertation)

- **Topic of the workshop:** RDM practices and principles.
- **Objective:** To provide participants with basic knowledge on how to start managing data.
- A NeDICC & DCC collaboration.
- **Speakers:**
 - Joy Davidson & Sarah Jones (DCC, UK).
 - Prof Jim Mullins (Purdue, US).
 - Elias Makonko (HSRC, SA).
 - Dr Anwar Vahed (DIRISA (Data Intensive Research Initiative for SA), SA).

<https://nedicc.com/2015/08/20/uk-research-data-management-experts-at-the-csir/>

Programme

- **Attendance:** 70 librarians, information specialists and research-assisting personnel from universities and research councils across the country.
- **Funding:** funded by NeDICC.
- **Programme:**
 - RDM: what it's all about, the benefits & drivers.
 - The impact that RDM has had on the profile & standing of the library at Purdue University.
 - CARDIO quick quiz & discussion.
 - The state of RDM in South Africa.
 - DIRISA and its implications for RDM in South Africa.
 - Useful RDM tools and services – resources you can re-use.
 - DMPonline – brief talk and demo.
 - Developing a data roadmap for your institution.

Evaluation of the workshop

- **Objective:** to identify and evaluate a RDM training intervention to determine whether the intervention could enhance the perception of RDM **understanding, knowledge** and **skills** of LIS professionals in SA Higher Education Institutions
- **Design:** An embedded research design was used, combining a quasi-experimental design which is a quantitative research design (non-randomised control group pre-test-post-test design) and a case study research design, a qualitative research design.

Design diagrams

Group = O1 X O2

Questionnaire 1



RDM Workshop
(Intervention)



Questionnaire 2

Questionnaire topics

- Demographic information.
 - Institution
 - Age range
 - Title of job
 - Years of experience
- Knowledge regarding RDM.
 - Policy & mandate at your institution
 - What aspects should be addressed by the policy & mandate
 - RDM services at your institution
 - What services should be offered

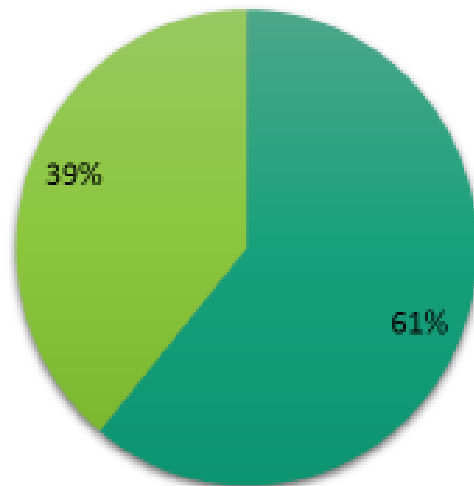
- Who should be responsible to lead the RDM effort
- Rate your understanding of RDM on a scale of 1-4
- Do you think you have the necessary disciplinary background to offer RDM services / advice
- Where do you consider your own knowledge gap to be in RDM (list of choices)
- Where do you consider your own skills gap to be in RDM (list of choices)
- **Added to Questionnaire 2:**
 - What would you have liked to be included
 - What did you learn that was really useful
 - Do you feel confident that you would be able to guide research staff in terms of RDM
 - Do you have an other comment about future RDM workshops

Analysis – a few examples

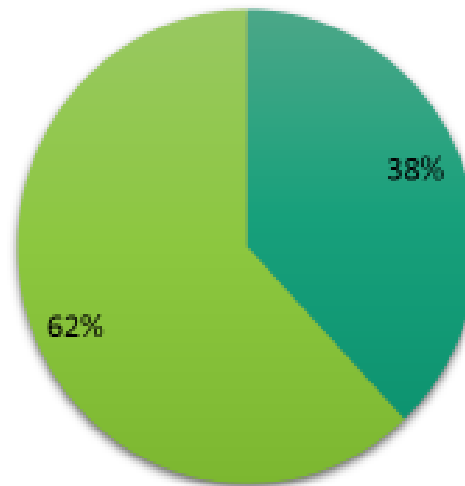
- Response rate: Q1=52%; Q2=36%

Participants' understanding of RDM

First questionnaire



Second questionnaire



Questionnaire 1

- Department to lead RDM – Researchers and Research Office
- Poor understanding of RDM
- Knowledge areas
 - Respondent's perception of their knowledge considered poor in all 8 areas.
- Skills sets
 - Respondent's perception of their skills considered poor in 10 of the 11 skills set



RDM Workshop (Intervention)

- RDM benefits and drivers
- Impact that RDM has had on Purdue University
- The state of RDM in South Africa
- DIRISA and its impact on RDM in South Africa
- Useful RDM tools and services
- DMPOnline



Questionnaire 2

- Department to lead RDM – Researchers and Library Technical Services
- Better understanding of RDM
- Knowledge areas
 - Respondent's perception of their knowledge improved in 7 of the 8 areas
- Skills sets
 - Respondent's perception of their skills improved in 5 of the 11 skills

Results & recommendations

- The research found that the RDM workshop **was highly successful in enhancing the participants' perception of their RDM understanding and knowledge**. The RDM workshop was **less successful** in enhancing the participants' perception of their RDM skills.
- It was recommended that LIS professionals (1) take advantage of the **online RDM training materials** available to enhance their understanding and knowledge of RDM; (2) attend **face-to-face training** interventions to enhance or develop their RDM skills and (3) enrol in **university level educational programmes** to gain a qualification in RDM if they qualify. It was also recommended that institutions that provide RDM training should **focus on specific aspects** of RDM instead of offering a general overview.





Conclusion & lessons learned

- It is clear that both formal and informal RDM education and training are thriving in South Africa.
- It is also clear that the international SKA project is the funding focus area for the DST. (money falling into a big black hole)
- Data stewards would therefore, in the short term at least, accept responsibility for their own training.
- Training and workshops organised by NeDICC are carried by the community both in terms of presenters and funding – these would need to continue.
- After the evaluation of the NeDICC & DCC workshop, NeDICC's training has become more practical e.g. the Library carpentry workshop.
- NeDICC should perhaps become a more formal / legal organisation to be officially acknowledged for its role, e.g. a consortium
- Educators and trainers for all types of research data management should find ways to collaborate.

Mobilising a Nation?

- It remains to be seen if these training initiatives (formal & informal) will be **sufficient** to really mobilise South Africa in terms of research data.
- NeDICC activities definitely appear to have started formal RDM practice, and the future of Big data training looks promising ...
- We have hope that our researchers, with the assistance of dedicated data stewards, will ensure that the quality of our data is such that accredited repositories would be prepared to make the data accessible for re-use.

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