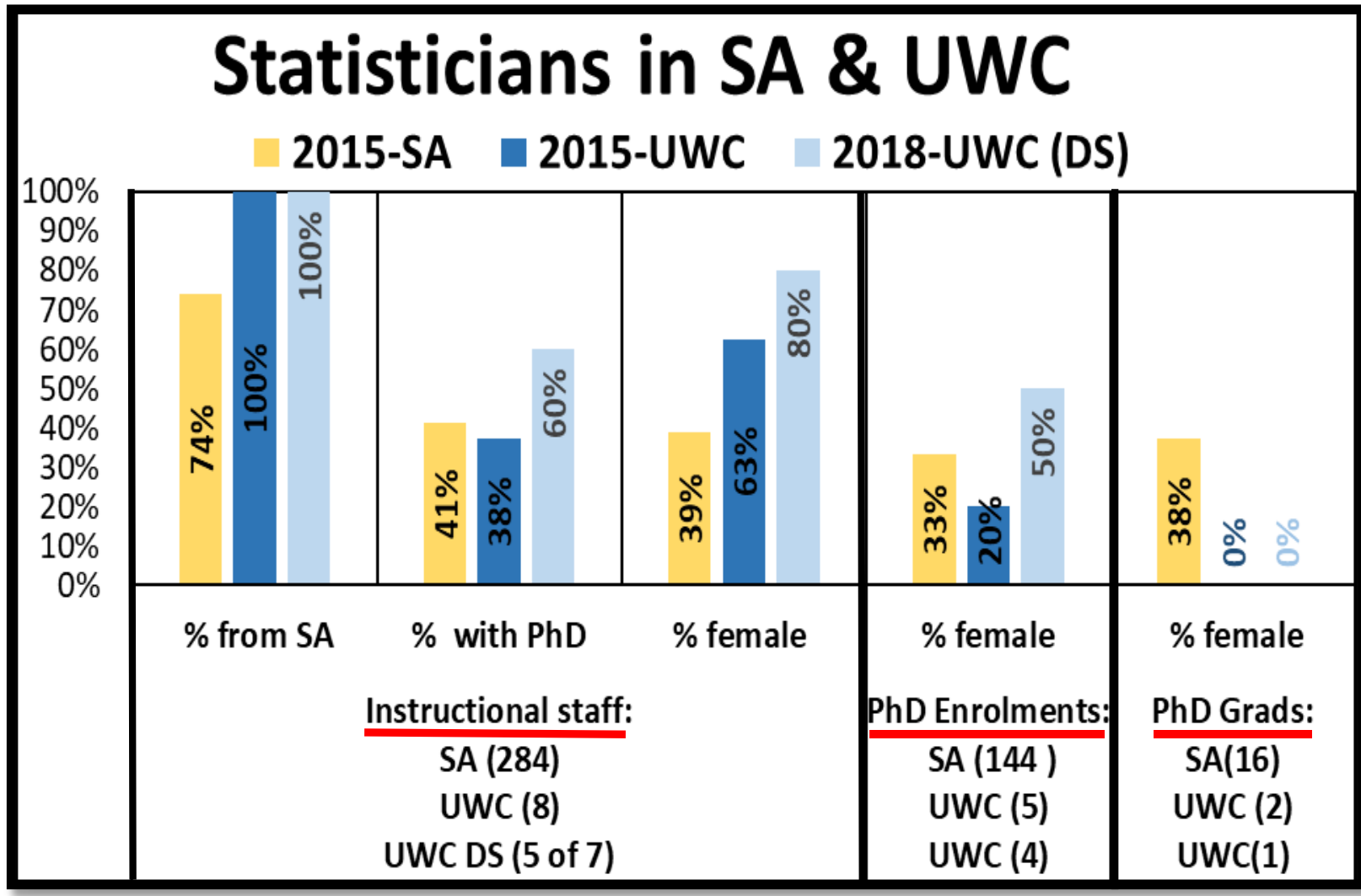


1. BACKGROUND

Statistics impacts all fields of research. If a phenomena is expressed mathematically it can be analyzed statistically.

South Africa (SA) (0.76% of the world population)

- Decline in the quality of mathematics teaching at schools
- 24 Public universities - rely on foreign enrolments to fuel statistics research (smallest research field)
- Contribute 0.67% of the world's research output, ranked 37th (Web of Science, 2016)
- Low Honours → Masters → PhD conversion rates



- 2019 - UWC** (Est. 1975, 2 staff (1 female))
- Staff: Stats-7 (5 female) & DS-5 (4 female)
 - Students: 87 2nd year; 48 3rd year; 9 Honours; 4 Masters & 3 PhD (1 female)
 - PhD graduate: 1 (female)

2. METHODS

Development of new post graduate programs in Data Science (DS)

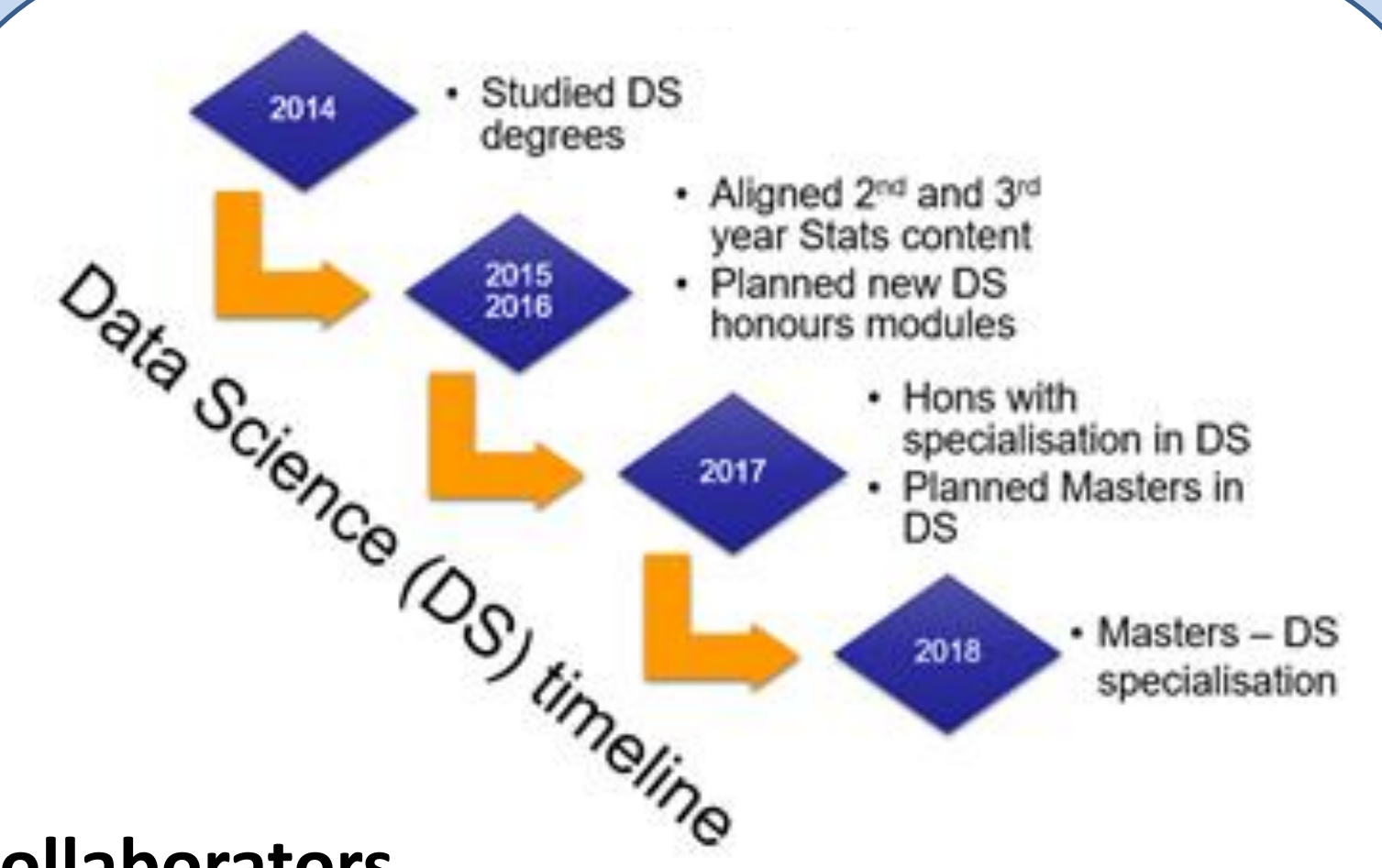
- Research in statistics program
- UWC statistics syllabus re-engineered
- Staff motivation & buy in (12 new courses in 2 years)
- Space & time created: staff to obtain PhD

Staff constant upskilling

- Knowledge share / transfer
- Exposure (world conferences, workshops and seminar attendances)

Students (Resilient with grit)

- Historically disadvantaged
- Low socio economic status (informal settlements)
- Inadequate basic education (58th out of 59 countries, TIMSS 2015)



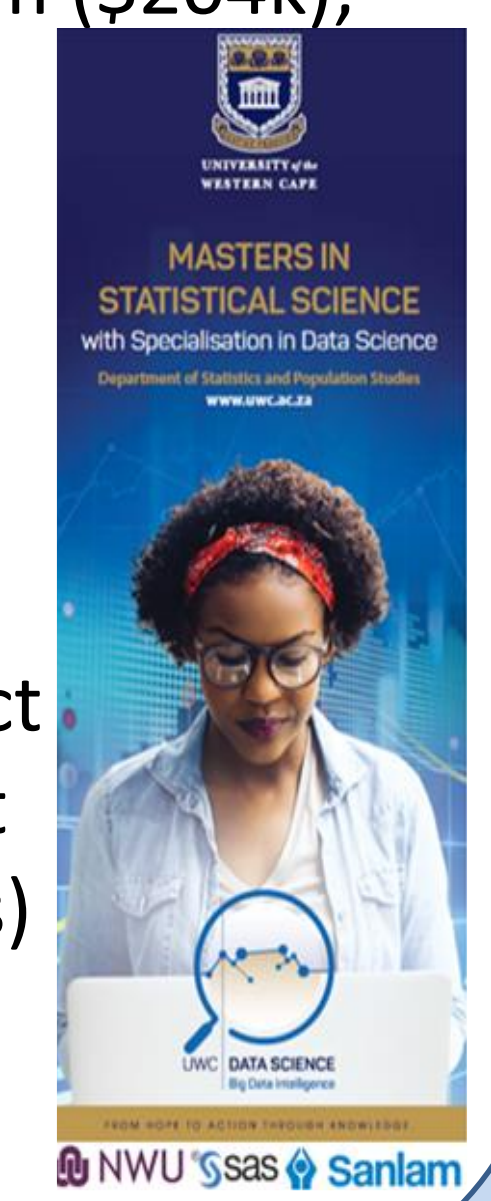
Collaborators

PGDip DS (2017 & 2018)

- Interdisciplinary: UWC staff in Statistics, Computer Science, Information Systems & the School of Business and Finance
- Students (30+): mainly from industry

MSc DS (2018) Degree:

- Academics: UWC, Industry (Santam, MRC) & North West University staff
- Industry funding: Sanlam-R3m (\$204k); SAS -R16m (\$1m) in software & hardware
- 5 UWC staff - facilitators
- 5 NWU staff - lecturers
- 5 modules
- 1 year program
- 1st semester university project
- 2nd semester industry project (3 company & 2 campus days)
- 3 graduates in 2018



3. RESULTS

- SAS accredited the Data Science syllabus
- 100% job placement in 2019
- Attracting more students from industry
- Relationships with peers in academia and with industry

4. CONCLUSIONS

- Funding required to continue MSc DS
- More awareness needed in high schools & industry (sponsored high tea (11/30/2019))
- More academic & industry collaborations
- PhD in Data Science

5. OTHER RESOURCES

<http://anyflip.com/ijld/octn/>

6. REFERENCES

- De Loor, B. 1954. Statistics and statisticians. South African Journal of Science, 51 (1) 49-53.
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