

# Ruan van Mazijk, Curriculum vitae

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MSc candidate in Biological Sciences at the [Department of Biological Sciences, University of Cape Town](#), South Africa

I have broad interests in plant and animal phylogenetics systematics, macroecology, community ecology, plant ecophysiology, climate change biology, statistical ecology and computational and model-based methods. Striving for a career in research, academia and teaching.

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## Education

- **MSc candidate in Biological Sciences** *Cape Town* 2018–present
  - Dissertation title: *Genome size effects on plant hydraulic ecophysiology, habitat and phenology in Cape Schoenoid sedges (Cyperaceae: Schoeneae)*
  - Principle supervisor: Associate Prof A.M. Muasya
  - Co-supervisors: Associate Prof G.A. Verboom and Associate Prof A.G. West
- **BSc Hons in Biological Sciences** *Cape Town* 2017
  - Dissertation title: *Relating vascular plant species richness and environmental heterogeneity across spatial scales in the Greater Cape Floristic Region and the Southwest Australia Floristic Region*
  - Supervisors: Prof M.D. Cramer and Associate Prof G.A. Verboom
  - Graduated with distinction
- **BSc in Ecology & Evolution, Applied Biology** *Cape Town* 2016
  - Distinction in both majors and the degree as a whole
- National Senior Certificate, Fairmont High School, Durbanville, South Africa 2013
  - Bachelor's Pass with honours and six distinctions

## Publications

### Popular articles

- Elliott, T.L., Laidler, G., Muasya, A.M., Muthaphuli, N. and **van Mazijk, R.** (In review). Foregrounding sedges: bringing the neglected Cape Schoenoid sedges to the forefront of genomic research. *Veld & Flora*.

### Peer-reviewed articles

- Cramer, M.D., Wootton, L.M., **van Mazijk, R.** and Verboom, G.A. (In review). Improved spatial soil data confirms dependence of vegetation distribution on edaphic properties in the Cape biodiversity hotspot. *Diversity & Distributions*.
- **Van Mazijk, R.**, Cramer, M.D. and Verboom, G.A. (In prep.). The role of environmental heterogeneity in determining plant species richness in the Greater Cape Floristic Region & the Southwest Australia Floristic Region. To submit to *Journal of Biogeography*.
- **Van Mazijk, R.**, Smyth, L.K., Weideman, E.A. and West, A.G. (2018). Isotopic tracing of stormwater in the urban Liesbeek River. *Water SA*, 44(4):674–679. DOI: [10.4314/wsa.v44i4.16](https://doi.org/10.4314/wsa.v44i4.16).

## Professional affiliations

- Southern African Society for Systematic Biology (SASSB) council member Student Representative 2019–present
- SASSB student member 2018–present
- South African Association of Botanists (SAAB) student member 2017–present
- Golden Key International Honour Society member 2015–present

## Funding & awards

### Travel grants

- UCT Conference Travel Grant to attend the 45<sup>th</sup> Annual SAAB, African Mycological Association (AMA) and SASSB Joint Congress, 2019 (R3,819) 2018

### Scholarships & bursaries

- Department of Science and Technology (DST) and National Research Foundation (NRF) Innovation Masters Scholarship (R90,000) 2019
- UCT Masters Research Scholarship<sup>1</sup> (R30,000) 2019
- UCT Bursary Top Ups (R6,000 total) 2019
  - From Associate Prof A.M. Muasya, Associate Prof A.G. West and Associate Prof G.A. Verboom
- SAAB MSc Student Bursary (inaugural recipient) (R20,000 p.a.) 2018, 2019
- UCT Department of Biological Sciences Dorothy Cameron Scholarship (R20,000) 2018
- UCT Once-Off Top Up Award (R5,520) 2018
- UCT Masters Research Scholarship (R30,000) 2018
- DST-NRF Innovation Honours Scholarship (R60,000) 2017
- SAAB Honours Scholarship (R10,000) 2017
- UCT Council Honours Merit Scholarship<sup>2</sup> (R20,000) 2017
- UCT Science Faculty Scholarship (R15,000 p.a.) 2015, 2016

### Awards & honours

- SASSB Best MSc Presentation, at the 45<sup>th</sup> Annual SAAB, AMA and SASSB Joint Congress January 2019
  - Three-way tie, shared with with Zaynab Shaik (UCT/SANBI) and Devon Main (UJ)
- UCT Dean's Merit List 2014–2016
- UCT Dick & Dorothy Borchers Prize for the highest standard in 2<sup>nd</sup> year biology (R1,000) 2015
- Top of the class at UCT for:
  - 3<sup>rd</sup> year evolutionary biology 2016
  - 2<sup>nd</sup> year botany 2015
  - 2<sup>nd</sup> year zoology 2015
  - 2<sup>nd</sup> year marine biology 2015
  - 1<sup>st</sup> year biological diversity 2014

### Leadership experience

- Southern African Society for Systematic Biology (SASSB) council member Student Representative 2019–present
- UCT Dept. of Biological Sciences Postgraduate Committee member October 2018–present
- UCT Departmental Representative for the Dept. of Biological Sciences 2016.
- Class Representative at UCT for:
  - 3<sup>rd</sup> year evolutionary biology 2016
  - 3<sup>rd</sup> year ecology 2016
  - 2<sup>nd</sup> year botany 2015

### Teaching

- Teaching and field assistant for second year ecology and evolution February 2019–present
  - Convenor: Associate Prof G.A. Verboom (UCT)
- Teaching assistant for second year angiosperm diversity practicals October 2018
  - Lecturer: Associate Prof G.A. Verboom (UCT)
- Tutor for second year study design and data analysis for scientists 2017–present
  - Convenor: Associate Prof R. Altwegg (UCT)
- Assistant tutor for short course *SEEC-ACCESS Introduction to statistical modelling & data analysis* 18–20 July 2018

<sup>1</sup> Awarded but not reimbursed due to award of DST-NRF Innovation Masters Scholarship

<sup>2</sup> Awarded but not reimbursed due to award of DST-NRF Innovation Honours Scholarship

- Organiser: Associate Prof R. Altwegg (UCT)
- Assistant tutor first year R practicals 2016–2018
  - Convenor: Associate Prof R. Altwegg (UCT)
- Hot-seat tutor for first year mathematics for biology, earth and environmental sciences undergraduates 2015
  - Convenor: T. van Heerden (UCT)
  - Hot-seat organiser: Dr R. Moolman (UCT)

## Research assistance

- Field assistant for sampling *Schoenus* spp. (Cyperaceae: Schoeneae) 2018
  - Specimens were used for genome-size analyses and taxonomic study
  - Supervisor: Dr T.L. Elliott (Université De Montréal) and Associate Prof A.M. Muasya (UCT)
- Laboratory assistant for *Schoenus* spp. (Cyperaceae: Schoeneae) hydroponics pilot study 2018
  - Supervisor: Dr T.L. Elliott (Université De Montréal) and Associate Prof A.M. Muasya (UCT)
- Data processing assistant for assessing the current available data for the soils of the GCFR June 2016–present
  - with L.M. Wootton
  - Part of the *Biodiversity and Environmental Change in the Cape Floristic Region* research programme at the Dept. of Biological Sciences
  - Supervisor: Prof M.D. Cramer (UCT)
- Field assistant for monitoring *Mimetes* spp. & *Leucospermum* spp. (Proteaceae) January–February 2017
  - Populations were on the Cape Peninsula
  - with L.M. Wootton
  - Supervisor: Dr J.A. Slingsby (SAEON Fynbos Node, SEEC)
- Laboratory and field assistant for legume symbiotic rhizobia culturing December 2015
  - Also involved plant collections and literature-derived rhizobial collection data processing
  - Supervisors: Dr M. Dlodlu (University of Swaziland) and Associate Prof A.M. Muasya (UCT)

## Workshop & conference attendance

- Presenter at the 45<sup>th</sup> Annual SAAB, AMA and SASSB Joint Congress 9–11 January 2019
  - First oral presentation: 9 January 2019
    - Environmental turnover predicts plant species richness & turnover*
    - Based on my BSc Hons dissertation work and publication in prep.
  - Second oral presentation: 11 January 2019
    - Larger genome size constrains water-use efficiency and phenology in Cape Schoenoid sedges*
    - Based on my MSc work
- Presenter at UCT BioDay 30 November 2018
  - I presented my preliminary results for my MSc on the role of genome size in shaping Cape Schoenoid sedge physiology
- Attendee at [satRday Cape Town](#) 17 March 2018
- Presenter at workshop *Biodiversity and Environmental Change in the Cape Floristic Region* 24 January 2017
  - with L.M. Wootton
  - We presented a progress report on *Development of soil atlas for the Greater Cape Floristic Region*
  - Organiser: Associate Prof L. Gillson (UCT)
- Attendee at workshop *Spatial Point Process Modelling for Ecological Survey Data with “inlabru”* 11–13 January 2017
  - Instructors: Prof D.L. Borchers, Dr J.B. Illian (CREEM, St Andrews University) and Dr F. Bachl (University of Edinburgh)

## Press releases & science communication

- Radio interview on *The John Maytham Show, Cape Talk* (28 November 2018). [Harvesting Storm Water](#).
- Interviewed for article for UCT News by Susan Segar (26 November 2018). [Harvesting storm water from the Liesbeeck River](#).
- Mentioned in article for UCT Faculty of Science press releases (November–December 2018). [Tracing stormwater in the Liesbeeck River - students passion drives scientific discovery](#).
- Presenter at [Pint of Science Cape Town](#) 16 May 2018
  - I presented hypotheses concerning the role of genome size in plant water use and ecology

## Skills

- Extended experience with:
  - Apple macOS
  - Microsoft Windows
  - Microsoft Office Word, Excel and Powerpoint
  - LaTeX, BibTeX
  - R, RStudio, RMarkdown and related packages, “tidyverse” packages
  - Git, GitHub
  - Statistical modelling, GIS (in R)
- Fluent in:
  - English
  - Afrikaans
- Animal Ethics Course certified by South African Veterinary Council April 2017
  - Completed as part of BSc Hons general coursework

## Miscellaneous

- Open Day volunteer for the Dept. of Biological Sciences 21 April 2018, 22 April 2017
- Botanical Society of South Africa (BotSoc) member 2017–present
- UCT Wine & Culture Society member 2016–present
- UCT Birding Club member 2016–2017
- Selected to give student feedback for curriculum-restructuring August 2016
  - within the Dept. of Biological Sciences
  - Related to roles as Class/Dept. Representative—see above
  - Selected by: Associate Prof A.G. West (UCT)
- Selected to give student feedback for *Biology: How Life Works* (2nd edition) May 2016
  - Morris et al., 2016. W.H. Freeman & Co., Macmillan Education
  - Selected by: Dr R. Kelly-Laubscher (University College Cork)
- Cape Wine Ambassador qualification 2016
  - Conferred by: Clive Torr
- UCT Biological Society member 2015
- Two Oceans Aquarium Young Biologist Volunteer 2013–2014

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## References

- Associate Prof G.A. Verboom [tony.verboom@uct.ac.za](mailto:tony.verboom@uct.ac.za), +27 21 650 3398
    - Dept. of Biological Sciences, UCT
    - Bolus Herbarium, UCT
  - Prof M.D. Cramer [michael.cramer@uct.ac.za](mailto:michael.cramer@uct.ac.za), +27 21 650 2444
    - Dept. of Biological Sciences, UCT
  - Associate Prof A.M. Muasya [muthama.muasya@uct.ac.za](mailto:muthama.muasya@uct.ac.za), +27 21 650 3725
    - Head, Dept. of Biological Sciences, UCT
    - Director, Bolus Herbarium, UCT
  - Associate Prof A.G. West [adam.west@uct.ac.za](mailto:adam.west@uct.ac.za), +27 21 650 3628
    - Dept. of Biological Sciences, UCT
  - Associate Prof R. Altwegg [res.altwegg@uct.ac.za](mailto:res.altwegg@uct.ac.za), +27 21 650 5750
    - Dept. of Statistical Sciences, UCT
    - Head, Centre for Statistics in Ecology, the Environment and Conservation (SEEC), UCT
  - Prof T.A.J. Hedderson [terry.hedderson@uct.ac.za](mailto:terry.hedderson@uct.ac.za), +27 21 650 4037
    - Dept. of Biological Sciences, UCT
    - Bolus Herbarium, UCT
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