

Ruan van Mazijk

Curriculum vitae



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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.

Education

MSc candidate in Biological Sciences (UCT)

Does genome size affect plant water use & phenology? Comparing ecophysiological function across Cape schoenoid sedges (tribe Schoeneae, Cyperaceae)

Principal supervisor: Prof A.M. Muasya

Co-supervisors: Prof G.A. Verboom & Prof A.G. West

BSc Hons in Biological Sciences (UCT)

Relating vascular plant species richness & environmental heterogeneity spatially in the GCFR & SWAFR

Supervisors: Prof M.D. Cramer & G.A. Verboom

With distinction

2017

BSc in Ecology & Evolution, Applied Biology (UCT)

With distinction in both majors & the degree

2016

Publications

- Van Mazijk, Cramer, & Verboom. Environmental heterogeneity explains contrasting plant species richness between the South African Cape & southwestern Australia. *Journal of Biogeography* 48:1875–1888. DOI: 10.1111/jbi.14118. 2021
- Elliott, van Mazijk, Barrett, Bruhl, Joly, Muthaphuli, Wilson, & Muasya. Global dispersal & diversification of the genus *Schoenus* (Cyperaceae) from the Western Australian biodiversity hotspot. *Journal of Systematics & Evolution* 59(4):791–808. DOI: 10.1111/jse.12742. 2021
- Elliott, Laidler, Muasya, Muthaphuli & van Mazijk. Solving the sedge mystery. *Veld & Flora* 105(3):20–25. 2019
- Cramer, Wootton, van Mazijk & Verboom. New regionally-modelled soil layers improve prediction of vegetation type relative to that based on global soil models. *Diversity & Distributions* 25(11):1736–1750. DOI: 10.1111/ddi.12973. 2019
- Van Mazijk, Smyth, Weideman & West. Isotopic tracing of stormwater in the urban Liesbeek River. *Water SA* 44(4):674–679. DOI: 10.4314/wsa.v44i4.16. 2018

Professional affiliations

- SASSB¹ council member, student representative 2019–
- SASSB student member 2018–
- SAAB² student member 2017–
- Golden Key International Honour Society member 2015–

Funding & awards

Scholarships & bursaries

- Innovation Masters Scholarship (DST³-NRF⁴) (R90,000) 2019

¹Southern African Society for Systematic Biology

²South African Association of Botanists

³Department of Science & Technology (South Africa)

⁴National Research Foundation (South Africa)

Masters Research Scholarship ⁵ (UCT) (R30,000)	2019
Bursary Top Ups ⁶ (UCT) (R6,000)	2019
MSc Student Bursary (inaugural recipient) (SAAB) (R20,000 p.a.)	2018–2019
Dorothy Cameron Scholarship (UCT Department of Biological Sciences) (R20,000)	2018
Once-Off Top Up Award (UCT) (R5,520)	2018
Masters Research Scholarship (UCT) (R30,000)	2018
Innovation Honours Scholarship (DST-NRF) (R60,000)	2017
Honours Scholarship (SAAB) (R10,000)	2017
Honours Merit Scholarship ⁷ (UCT Council) (R20,000)	2017
Science Faculty Scholarship (UCT) (R15,000 p.a.)	2015–2016

Travel grants

Student Sponsorship for online attendance at MEDECOS XVII (DST-NRF) (R7,000)	2022
For the 45 th Annual SAAB, AMA ⁸ & SASSB Joint Congress, 2019 (UCT) (R3,819)	2018

Awards & honours

Best Systematics MSc Presentation ⁹ at the 45 th Annual SAAB, AMA & SASSB Joint Congress	January 2019
Dean's Merit List (UCT)	2014–2016
Dick & Dorothy Borcherts Prize, for the highest standard in 2 nd year biology (UCT) (R1,000)	2015
Top of the class at UCT for:	
• 3 rd year evolutionary biology	2016
• 2 nd year botany	2015
• 2 nd year zoology	2015
• 2 nd year marine biology	2015
• 1 st year biological diversity	2014

Leadership

SASSB council member, student representative	2019–
UCT Department of Biological Sciences Postgraduate Committee member	October 2018–
UCT Departmental Representative for the Department of Biological Sciences	2016
Class Representative at UCT for:	
• 3 rd year evolutionary biology	2016
• 3 rd year ecology	2016
• 2 nd year botany	2015

Teaching assistance

Teaching assistant & field assistant for 2 nd year angiosperm diversity Convenor: Dr. S. Chimphango (UCT)	2022
Teaching & field assistant for 2 nd year ecology & evolution Convenor: Associate Prof G.A. Verboom (UCT)	2019–2020
Teaching assistant for 2 nd year angiosperm diversity Lecturer: Associate Prof G.A. Verboom (UCT)	2018–2019
Tutor for 2 nd year study design & data analysis for scientists in R Convenor: Associate Prof R. Altweig (UCT, SEEC ¹⁰)	2017–2020
Lectured for SDU ¹¹ short course <i>Teaching Biodiversity for FET¹²</i> Life Sciences Teachers Lecture title: <i>Biodiversity, evolution & taxonomy—an overview of the major clades of animals & plants</i>	18 March 2019

⁵ Awarded but not reimbursed due to award of Innovation Masters Schol.

⁶ From MSc supervisors A/Profs A.M. Muasya, G.A. Verboom & A.G. West

⁷ Awarded but not reimbursed due to award of Innovation Honours Schol.

⁸ African Mycological Association

⁹ Awarded by SASSB; three-way tie with Ms Z. Shaik (UCT, South African National Biodiversity Institute) & Mr D. Main (University of Johannesburg)

¹⁰ UCT Centre for Statistics in Ecology, the Environment & Conservation

¹¹ UCT Schools Development Unit

¹² Further Education & Training (grades 10–12 in South Africa)

Assistant tutor for SEEC-ACCESS ¹³ short course <i>Intro. to statistical modelling & data analysis in R</i>	18–20 July 2018
Organiser: Associate Prof R. Altwegg (UCT, SEEC)	
Assistant tutor for 1 st year introductory statistics <i>R</i> practicals	2016–2018
Convenor: Associate Prof R. Altwegg (UCT, SEEC)	
Hot-seat tutor for 1 st year mathematics for biology, earth & environmental sciences undergraduates	2015
Convenor: T. van Heerden (UCT); hot-seat organiser: Dr R. Moolman (UCT)	

Workshops taught & lead

Data wrangling & manipulation in <i>R</i>	1–3 July 2019
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Research assistance

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

Workshop & conference attendance

Attended MEDECOS XVII	5–9 September 2022
Presented at IBS ¹⁴ ECBC ¹⁵	22–24 October 2021
Presented as candidate at iDiv ¹⁶ Online Joint Recruitment Symposium	31 August–1 September 2020
Presenter at the 45th Annual SAAB, AMA & SASSB Joint Congress	9–11 January 2019
1st oral presentation: <i>Environmental turnover predicts plant species richness & turnover</i> Based on my BSc Hons dissertation work & publication in prep.	9 January 2019
2nd oral presentation: <i>Larger genome size constrains water-use efficiency & phenology in Cape schoenoid sedges</i> Based on my MSc work	11 January 2019
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 (https://capetown2018.satdays.org)	17 March 2018
Presenter at workshop <i>Biodiversity & Environmental Change in the Cape Floristic Region</i>	24 January 2017
With Ms L.M. Wootton	
We presented a progress report on <i>Development of soil atlas for the Greater Cape Floristic Region</i>	
Organiser: Associate Prof L. Gillson (UCT)	

¹³DST-NRF Applied Centre for Climate & Earth Systems

¹⁴International Biogeography Society

¹⁵Early Career Biogeographers Conference

¹⁶German Centre for Integrative Biodiversity Research, Halle-Jena-Leipzig

Press releases & science communication

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

Skills

Strong public speaker, visual design, teaching

Tools

R Markdown & related *R*-packages
tidyverse *R*-packages
git, GitHub
LaTeX, *BibTeX*
Apple macOS
Microsoft Windows
Microsoft Office Word, Excel & Powerpoint

Languages

English, Afrikaans
R, bash

Methods

Statistical modelling
Data manipulation, wrangling & cleaning
GIS (in *R*)

Miscellaneous

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

References

Director, Bolus Herbarium, UCT	
Prof G.A. Verboom	tony.verboom@uct.ac.za, +27 21 650 3398
Department of Biological Sciences, UCT	
Bolus Herbarium, UCT	
Prof M.D. Cramer	michael.cramer@uct.ac.za, +27 21 650 2444
Department of Biological Sciences, UCT	
Prof A.G. West	adam.west@uct.ac.za, +27 21 650 3628
Department of Biological Sciences, UCT	
Associate Prof R. Altwegg	res.altwegg@uct.ac.za, +27 21 650 5750
Department of Statistical Sciences, UCT	
Head, SEEC, UCT	
Prof T.A.J. Hedderson	terry.hedderson@uct.ac.za, +27 21 650 4037
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Bolus Herbarium, UCT	