

# Ruan van Mazijk

Curriculum vitae



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Interests: systematics & taxonomy, phylogenetic comparative methods, biodiversity patterns & macroecology, community ecology, plant ecophysiology & functional traits

## 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)

2017

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

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

With distinction

### BSc in Ecology & Evolution, Applied Biology (UCT)

2016

With distinction in both majors & the degree

## 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

## Peer review

Grobler & Cowling. The composition, geography, biology and assembly of the coastal flora of the Cape Floristic Region. *PeerJ* 9:e11916. DOI: 10.7717/peerj.11916.

2021

## Professional affiliations

SASSB<sup>1</sup> council member, student representative

2019–2021

SASSB student member

2018–

SAAB<sup>2</sup> student member

2017–

Golden Key International Honour Society member

2015–

<sup>1</sup>Southern African Society for Systematic Biology

<sup>2</sup>South African Association of Botanists

# Funding & awards

## Scholarships & bursaries

NRF Innovation Masters Scholarship (R90,000)	2019
UCT Masters Research Scholarship <sup>3</sup> (R30,000)	2019
UCT Bursary Top Ups <sup>4</sup> (R6,000 total)	2019
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
NRF Innovation Honours Scholarship (R60,000)	2017
SAAB Honours Scholarship (R10,000)	2017
UCT Council Honours Merit Scholarship <sup>5</sup> (R20,000)	2017
UCT Science Faculty Scholarship (R15,000 p.a.)	2015–2016

## Travel grants

NRF Student Sponsorship for online attendance at MEDECOS XVII (R7,000)	2022
UCT Travel Grant for the 45 <sup>th</sup> Annual SAAB, AMA <sup>6</sup> & SASSB Joint Congress, 2019 (R3,819)	2018

## Awards & honours

Best Systematics MSc Presentation <sup>7</sup> at the 45 <sup>th</sup> Annual SAAB, AMA & SASSB Joint Congress	January 2019
UCT Dean's Merit List	2014–2016
UCT Dick & Dorothy Borcherts 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 positions

SASSB council member, student representative	2019–2021
UCT Department of Biological Sciences Postgraduate Committee member	October 2018–2019
UCT Departmental Representative for the Department 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 assistance

Teaching assistant & field assistant for 2 <sup>nd</sup> year angiosperm diversity Convenor: Associate Prof S. Chimphango (UCT)	2022
Teaching & field assistant for 2 <sup>nd</sup> year ecology & evolution Convenor: Prof G.A. Verboom (UCT)	2019–2020
Teaching assistant for 2 <sup>nd</sup> year angiosperm diversity Lecturer: Prof G.A. Verboom (UCT)	2018–2019

<sup>3</sup>Awarded but not reimbursed due to award of Innovation Masters Scholarship

<sup>4</sup>From MSc supervisors

<sup>5</sup>Awarded but not reimbursed due to award of Innovation Honours Scholarship

<sup>6</sup>African Mycological Association

<sup>7</sup>Awarded by SASSB; three-way tie with Ms Z. Shaik (UCT, SANBI) & Mr D. Main (University of Johannesburg)

Tutor for 2 <sup>nd</sup> year study design & data analysis for scientists in R Convenor: Associate Prof R. Altwegg (UCT, SEEC <sup>8</sup> )	2017–2020
Lectured for SDU <sup>9</sup> short course <i>Teaching Biodiversity for FET<sup>10</sup> Life Sciences Teachers</i> Lecture title: <i>Biodiversity, evolution &amp; taxonomy—an overview of the major clades of animals &amp; plants</i>	18 March 2019
Assistant tutor for SEEC-ACCESS <sup>11</sup> short course <i>Introduction to statistical modelling &amp; data analysis in R</i> 2018	18–20 July 2018
Organiser: Associate Prof R. Altwegg (UCT)	
Assistant tutor for 1 <sup>st</sup> year introductory statistics R practicals Convenor: Associate Prof R. Altwegg (UCT)	2016–2018
Hot-seat tutor for 1 <sup>st</sup> year mathematics for biology, earth & environmental sciences undergraduates Convenor: T. van Heerden (UCT); hot-seat organiser: Dr R. Moolman (UCT)	2015

## Research assistance

Field assistant for sampling <i>Schoenus</i> spp. (Cyperaceae, tribe Schoeneae) Specimens were used for genome-size analyses and taxonomic study Supervisor: Dr T.L. Elliott (Masaryk University) & Prof A.M. Muasya (UCT)	2018
Laboratory assistant for <i>Schoenus</i> spp. (Cyperaceae, tribe Schoeneae) hydroponics pilot study Supervisor: Dr T.L. Elliott (Masaryk University) & Prof A.M. Muasya (UCT)	2018
Data processing assistant for assessing the current available data for the soils of the GCFR 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)	June 2016–
Field assistant for monitoring <i>Mimetes</i> spp. & <i>Leucospermum</i> spp. (Proteaceae) Populations were on the Cape Peninsula With Ms L.M. Wootton Supervisor: Dr J.A. Slingsby (UCT, SAEON Fynbos Node)	January–February 2017
Laboratory & field assistant for legume symbiotic rhizobia culturing Also involved plant collections & literature-derived rhizobial collection data processing Supervisors: Dr M. Dladlu (University of Swaziland) & Prof A.M. Muasya (UCT)	December 2015

## Workshops

Organised, lead <i>Data wrangling &amp; manipulation in R</i>	1–3 July 2019
Presenter at workshop <i>Biodiversity &amp; Environmental Change in the Cape Floristic Region</i> 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)	24 January 2017
Attendee at workshop <i>Spatial Point Process Modelling for Ecological Survey Data with inlabru</i> Instructors: Prof D.L. Borchers, Dr J.B. Illian (CREEM, St Andrews University) & Dr F. Bachl (University of Edinburgh)	11–13 January 2017

## Conferences

Presenter at UCT Biological Sciences Research Day	29 November 2022
Presenter at SAAB Postgraduate Virtual Symposium	28 September 2022
Attendee at MEDECOS XVII	5–9 September 2022
Presenter at IBS <sup>12</sup> Early Career Biogeographers Conference	22–24 October 2021
Presenter & candidate at iDiv <sup>13</sup> Online Joint Recruitment Symposium	31 August–1 September 2020
Presenter at the 45th Annual SAAB, AMA & SASSB Joint Congress <b>1<sup>st</sup> oral presentation:</b> <i>Environmental turnover predicts plant species richness &amp; turnover</i> Based on my BSc Hons dissertation work & publication in prep.	9–11 January 2019 9 January 2019

<sup>8</sup>UCT Centre for Statistics in Ecology, the Environment & Conservation

<sup>9</sup>UCT Schools Development Unit

<sup>10</sup>Further Education & Training (grades 10–12 in South Africa)

<sup>11</sup>NRF Applied Centre for Climate & Earth Systems

<sup>12</sup>International Biogeography Society

<sup>13</sup>German Centre for Integrative Biodiversity Research, Halle-Jena-Leipzig

## **2<sup>nd</sup> oral presentation:**

11 January 2019

Larger genome size constrains water-use efficiency & phenology in Cape schoenoid sedges  
Based on my MSc work

Presenter at UCT BioDay

30 November 2018

I presented my then preliminary results for my MSc on the role of genome size in shaping Cape schoenoid sedge physiology

Attendee at satRday Cape Town (<https://capetown2018.satrdays.org>)

17 March 2018

## **Press releases & science communication**

Radio interview on *The John Maytham Show, Cape Talk*  
*Harvesting Storm Water*

28 November 2018

Interviewed for article for UCT News by Susan Segar  
*Harvesting storm water from the Liesbeek River*

26 November 2018

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 & ecology

## **Skills**

Strong public speaker, visual design, teaching

### **Tools**

#### **Languages**

English, Afrikaans  
*R, bash*

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

#### **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

August 2016

Within the Department of Biological Sciences

Related to roles as Class/Departmental Representative—see above

Selected by: 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

## References

Prof A.M. Muasya Department of Biological Sciences, UCT Keeper, Bolus Herbarium, UCT	muthama.muasya@uct.ac.za, (+27) 21 650 3725
Prof G.A. Verboom Head, Department of Biological Sciences, UCT Director, Bolus Herbarium, UCT	tony.verboom@uct.ac.za, (+27) 21 650 3398
Prof M.D. Cramer Department of Biological Sciences, UCT	michael.cramer@uct.ac.za, (+27) 21 650 2444
Prof A.G. West Department of Biological Sciences, UCT	adam.west@uct.ac.za, (+27) 21 650 3628
Associate Prof R. Altwegg Department of Statistical Sciences, UCT Head, SEEC, UCT	res.altwegg@uct.ac.za, (+27) 21 650 5750
Prof T.A.J. Hedderson Department of Biological Sciences, UCT Bolus Herbarium, UCT	terry.hedderson@uct.ac.za, (+27) 21 650 4037