



# Tanya Strydom

PHD CANDIDATE

Ecology and Evolutionary Biology, School of Biosciences, University of Sheffield

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## Research Interests

computational ecology; functional traits; ecological networks; species interactions; FAIR and open science

## Professional Experience

### Postdoctoral Researcher

UNIVERSITY OF SHEFFIELD

Sheffield, UK

2024 - Present

- Advisor: A.P. Beckerman, PhD
- Part of the Community And Structural Collapse During Mass Extinctions (CASCaDE) research team

## Education

### Doctor of Philosophy in Biological Sciences

UNIVERSITÉ DE MONTRÉAL

Montréal, Canada

2020 - Present

- Advisor: T. Poisot, PhD
- Thesis: Tools 'O the Times: Understanding the common properties of species interaction networks across space

### Master of Science in Ecology and Biodiversity

STOCKHOLMS UNIVERSITET

Stockholm, Sweden

2018-20

- Advisor: K. Hylander, PhD
- Thesis: Declines and increases in northern and southern plant populations after changes in the microclimate

### Bachelor of Science (Honours) in Plant Sciences

UNIVERSITY OF PRETORIA

Pretoria, South Africa

2017

- Advisor: P.C. le Roux, PhD
- Thesis: Bush encroachment in South Africa's montane grasslands: the impact of *Leucosidea sericea* on microclimate and vegetation

### Bachelor of Science in Ecology

UNIVERSITY OF PRETORIA

Pretoria, South Africa

2014-16

## Fellowships and Internships

### BIOS<sup>2</sup> Fellow

COMPUTATIONAL BIODIVERSITY SCIENCE AND SERVICES (BIOS<sup>2</sup>) TRAINING PROGRAM

2021 - present

### Living Data Internship

CANADIAN INSTITUTE OF ECOLOGY AND EVOLUTION, BIRDS CANADA

2022

- Data archiving for the Piping Plovers conservation project

### UiB Internship

UNIVERSITY OF BERGEN

2020

- Website development for the Plants Functional Courses website. This included content creation as well as some front end development

### 3rd year Undergraduate Mentorship Program

UNIVERSITY OF PRETORIA

2016

- Worked as an assistant within the M. Robertson lab. This included the sorting and identification of pitfall trap samples as well as extracting information from databases

## Funding and Awards

### Robert May Prize

AWARDED BY: BRITISH ECOLOGICAL SOCIETY

2022

### Qualified for the UP Postgraduate Masters Research Bursary

AWARDED BY: UNIVERSITY OF PRETORIA

2018

### Awarded the 3rd year Undergraduate Mentorship Bursary

AWARDED BY: UNIVERSITY OF PRETORIA

2016

## Working Groups and International Collaboration

### Black Holes and Revelations: Identifying Priority Sampling Locations for Local Food Webs in Canada

PIs: G. DANSEREAU, F. BANVILLE, M. CATCHEN, AND T. STRYDOM

2022

### Merging Statistical Theory and Analyses at the Interface of Microbial and 'Macrobial' Ecology

PIs: M. LIEBOLD, P. PERES-NETO, AND E. THEBAULT

2022

### Canadian metaweb construction working group

PIs: T. POISOT AND L.J. POLLOCK

2021

### Network prediction synthesis working group

PIs: T. POISOT AND L.J. POLLOCK

2020

### Plant Functional Trait Course 5 in Peru

PIs: V. VANDVIK AND B.J. ENQUIST

2020

## Publications

\* Indicates co-lead author

\* Winner of the 2022 Robert May Prize

### PUBLICATIONS

- Christiansen, D. M., **Strydom, T.**, Greiser, C., McClory, R., Ehrlén, J., & Hylander, K. (2023). Effects of past and present microclimates on northern and southern plant species in a managed forest landscape. *Journal of Vegetation Science*. <https://doi.org/10.1111/jvs.13197>
- Maitner, B. S., Halbritter, A. H., Telford, R. J., **Strydom, T.**, Chacón-Labelle, J., Henderson, A. N., Lamanna, C., Sloat, L. L., Kerkhoff, A. J., Messier, J., Rasmussen, N. L., Pomati, F., Merz, E., Vandvik, V., & Enquist, B. J. (2023). Bootstrapping outperforms community-weighted approaches for estimating the shapes of phenotypic distributions. *Methods in Ecology and Evolution*. <https://doi.org/10.22541/au.162196147.76797968/v1>
- Strydom, T.**, Bouskila, S., Banville, F., Barros, C., Caron, D., Farrell, M. J., Fortin, M.-J., Hemming, V., Mercier, B., Pollock, L. J., Runghen, R., Dalla Riva, G. V., & Poisot, T. (2023). Graph embedding and transfer learning can help predict potential species interaction networks despite data limitations. *Methods in Ecology and Evolution*. <https://doi.org/10.1111/2041-210X.14228>
- Strydom, T.**, & Poisot, T. (2023). SpatialBoundaries.jl: Edge detection using spatial wombling. *Ecography*. <https://doi.org/10.1111/ecog.06609>
- Raath-Krüger, M. J., Schöb, C., McGeoch, M. A., Burger, D. A., **Strydom, T.**, & le Roux, P. C. (2022). Long-term spatially-replicated data show no cost to a benefactor species in a facilitative plant-plant interaction. *Oikos*. <https://doi.org/10.1111/oik.09617>
- Strydom\*, T.**, Bouskila\*, S., Banville, F., Barros, C., Caron, D., Farrell, M. J., Fortin, M.-J., Hemming, V., Mercier, B., Pollock, L. J., Runghen, R., Dalla Riva, G. V., & Poisot, T. (2022). Food web reconstruction through phylogenetic transfer of low-rank network representation. *Methods in Ecology and Evolution*. <https://doi.org/10.1111/2041-210X.13835>
- Chacón-Labelle, J., Boakye, M., Enquist, B. J., Farfan-Rios, W., Gya, R., Halbritter, A. H., Middleton, S. L., von Oppen, J., Pastor-Ploskonka, S., **Strydom, T.**, Vandvik, V., & Geange, S. R. (2021). From a crisis to an opportunity: Eight insights for doing science in the COVID-19 era and beyond. *Ecology and Evolution: Academic Practice in Ecology and Evolution*, 11(8), 3588–3596. <https://doi.org/10.1002/ece3.7026>

8. Geange\*, S. R., von Oppen\*, J., **Strydom\*, T.**, Boakye, M., Gauthier, T.-L. J., Gya, R., Halbritter, A. H., Jessup, L. H., Middleton, S. L., Navarro, J., Pierfederici, M. E., Chacón-Labela, J., Cotner, S., Farfan-Rios, W., Maitner, B. S., Michaletz, S. T., Telford, R. J., Enquist, B. J., & Vandvik, V. (2021). Next-generation field courses: Integrating Open Science and online learning. *Ecology and Evolution: Academic Practice in Ecology and Evolution*, 11(8), 3577–3587. <https://doi.org/10.1002/ece3.7009>
9. **Strydom, T.**, Dalla Riva, G. V., & Poisot, T. (2021). SVD entropy reveals the high complexity of ecological networks. *Frontiers in Ecology and Evolution*, 9. <https://doi.org/10.3389/fevo.2021.623141>
10. **Strydom\*, T.**, Catchen\*, M. D., Banville, F., Caron, D., Dansereau, G., Desjardins-Proulx, P., Forero-Muñoz, N. R., Higino, G., Mercier, B., Gonzalez, A., Gravel, D., Pollock, L. J., & Poisot, T. (2021). A roadmap toward predicting species interaction networks (across space and time). *Philosophical Transactions of the Royal Society B*, 376(20210063). <https://doi.org/10.1098/rstb.2021.0063>
11. Kattge, J., Boenisch, G., Diaz, S., Lavorel, S., Prentice, C., Leadley, P., Wirth, C., & the TRY Consortium. (2020). TRY plant trait database—enhanced coverage and open access. *Global Change Biology*, 26(1), 119–188. <https://doi.org/10.1111/gcb.14904>

## PREPRINTS

1. Halbritter, A. H., Vandvik, V., Cotner, S., Farfan-Rios, W., Maitner, B. S., Michaletz, S. T., Menor, I. O., Telford, R. J., Ccahuana, A., Cruz, R., Bravo, J. S., Andrade, P. E. S., Bustamante, L. L. V., Castorena, M., Chacon-Labela, J., Christiansen, C. T., Duran, S. M., Egelkraut, D. D., Gya, R., ... Enquist, B. J. (2023). Plant trait and vegetation data along a 1314 m elevation gradient with fire history in Puna grasslands, Perú. *Under Review at Scientific Data*.
2. Higino, G. T., Anujan, K., Boakye, M., Degano, M. E., Forero-Muñoz, N.-R., & **Strydom, T.** (2023). Designing a collective prototype of future (sub)tropical science. *Preprint*. <https://doi.org/10.32942/X2VC86>

## Presentations

### INVITED TALKS

#### What's [complexity] got to do with it?

TANYA STRYDOM

NetSci 2023

Jul., 2023

#### Making something out of nothing at all: Transfer learning for network prediction

TANYA STRYDOM

ML4MS mini-conference

Apr., 2022

#### Taking FAIR and open science to the field: The evolution of the PFTC field course

TANYA STRYDOM ALONGSIDE AUD H. HALBRITTER, 109 PFTC PARTICIPANTS

Living Norway Colloquium

Oct., 2020

### TALKS

#### Exploring the complexity of ecological networks using SVD entropy

TANYA STRYDOM, GIULIO V. DALLA RIVA AND TIMOTHÉE POISOT

11th Annual QCBS Symposium

Dec., 2020

### SHORT PRESENTATIONS AND POSTERS

#### Reconstructing food webs using transfer learning

TANYA STRYDOM, SALOMÉ BOUSKILA AND TIMOTHÉE POISOT

CSEE-SCEE Annual Meeting

Aug., 2021

#### Food web reconstruction using transfer learning

TANYA STRYDOM, SALOMÉ BOUSKILA AND TIMOTHÉE POISOT

12th Annual QCBS Symposium

Dec., 2021

### WORKSHOPS AND ORGANISED SESSIONS

#### Space Oddity: Thinking About Ecological Networks Across Space

FRANCIS BANVILLE, GABRIEL DANSEREAU, TANYA STRYDOM

ESA/CSEE Meeting

Aug., 2022

#### Designing a collective prototype of future tropical and subtropical science

GRACIELLE HIGINO, MICKEY BOAKYE, NORMA FORERO, TANYA STRYDOM

ATBC Annual Meeting

Jul., 2021

## SCIENCE COMMUNICATION

### Cartoonist

FORTNIGHTLY CARTOONIST FOR ECOLOGY FOR THE MASSES BLOG

2020 - 2022

## POPULAR ARTICLES

1. von Oppen, J., Gya, R., Geange, S., **Strydom, T.**, Middleton, S., & Maitner, B. S. (2021). Next generation field courses: Enhancing ECR development through open science and online learning. In *Ecology for the Masses*.
2. Cotner, S., Enquist, B. J., Chacon, J., Maitner, B. S., Farfan-Rios, W., Michaletz, S., Garen, J., Gauthier, T.-L. J., Vandvik, V., Gya, R., Halbritter, A. H., Hošková, K., Pierfederici, M. E., Quinteros-Casaverde, N. L., Diaz, E. S., Jessup, L. H., **Strydom, T.**, & von Oppen, J. (2020). International scientists need better support during global emergencies. In *Times Higher Education*.