Tanya **Strydom**

PhD Candidate

Département de sciences biologiques, Université de Montréal - Campus MIL, 1375 Ave.Thérèse-Lavoie-Roux, Montréal, QC H2V 0B3, Canada

✉ tanya.strydom@umontreal.ca | 🏠 tanyadoesscience.com | 🐙 TanyaS08 | 🆔 0000-0001-6067-1349 | 🐘 TanyaS08

Research Interests

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

Education

Doctor of Philosophy: Biological Sciences
Montréal, Canada

UNIVERSITÉ DE MONTRÉAL
2020 - Present

- Advisor: T. Poisot, PhD
- Thesis: Decoding Ecological Networks (in terms of the information from within)

Master of Science: Ecology and Biodiversity
Stockholm, Sweden

STOCKHOLMS UNIVERSITET
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): Plant Sciences
Pretoria, South Africa

UNIVERSITY OF PRETORIA
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: Ecology
Pretoria, South Africa

UNIVERSITY OF PRETORIA
2014-16

Fellowships and Internships

BIOS² Fellow

COMPUTATIONAL BIODIVERSITY SCIENCE AND SERVICES (BIOS²) TRAINING PROGRAM
2021 - present

Living Data Internship

CANADIAN INSTITUTE OF ECOLOGY AND EVOLUTION, BIRDS CANADA
2022

- Data archiving for the Piping Plovers conservation pjoject

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

Working Groups and International Collaboration

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

- Leader of one of the sub-projects focused on using machine learning for prediction

Network prediction synthesis working group

PIs: T. Poisot (Université de Montréal) and L.J. Pollock, (McGill University) *2020*

- Co-lead author of resulting publication

Plant Functional Trait Course 5 in Peru

PIs: V. Vandvik (University of Bergen) and B.J. Enquist, (University of Arizona) *2020*

- Plant functional responses to fire

Publications

* Indicates co-lead author

Publications

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`

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`

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`

Chacón-Labella, 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`

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-Labella, 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`

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

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). Graph embedding and transfer learning can help predict potential species interaction networks despite data limitations. *Preprint*. `https://doi.org/10.32942/osf.io/vyzgr`

Maitner, B. S., Halbritter, A. H., Telford, R. J., **Strydom, T.**, Chacón-Labella, 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. (2021). On estimating the shape and dynamics of phenotypic distributions in ecology and evolution. *Preprint*. `https://doi.org/10.22541/au.162196147.76797968/v1`

Presentations

INVITED TALKS

Making something out of nothing at all: Transfer learning for network prediction
ML4MS mini-conference
TANYA STRYDOM
Apr., 2022

Taking FAIR and open science to the field: The evolution of the PFTC field course
Living Norway Colloquium
TANYA STRYDOM ALONGSIDE AUD H. HALBRITTER, 109 PFTC PARTICIPANTS
Oct., 2020

TALKS

Exploring the complexity of ecological networks using SVD entropy
11th Annual QCBS Symposium
TANYA STRYDOM, GIULIO V. DALLA RIVA AND TIMOTHÉE POISOT
Dec., 2020

SHORT PRESENTATIONS

Reconstructing food webs using transfer learning
CSEE-SCEE Annual Meeting
TANYA STRYDOM, SALOMÉ BOUSKILA AND TIMOTHÉE POISOT
Aug., 2021

WORKSHOPS AND ORGANISED SESSIONS

Space Oddity: Thinking About Ecological Networks Across Space
ESA/CSEE Meeting
FRANCIS BANVILLE, GABRIEL DANSEREAU, **TANYA STRYDOM**
Aug., 2022

Designing a collective prototype of future tropical and subtropical science
ATBC Annual Meeting
GRACIELLE HIGINO, MICKEY BOAKYE, NORMA FORERO, **TANYA STRYDOM**
Jul., 2021

Science Communication & Engagement

COMMUNICATION

Cartoonist
FORTNIGHTLY CARTOONIST FOR ECOLOGY FOR THE MASSES BLOG
2020 - 2022

POPULAR ARTICLES

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*.

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*.

Funding and Awards

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