

lanya **Strydom**

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Research Interests

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

Education

Doctor of Philosophy: Biological Sciences

Montréal, Canada

2020 - Present

Université de Montréal

· Advisor: T. Poisot, PhD

• Thesis: Decoding Ecological Networks (in terms of the information from within)

Master of Science: Ecology and Biodiversity

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

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

University of Pretoria 2014-16

Fellowships and Internships.

BIOS² Fellow

COMPUTATIONAL BIODIVERSITY SCIENCE AND SERVICES (BIOS²) TRAINING PROGRAM

2021 - present

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

· 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

International Collaboration and Working Groups_

Canadian metaweb construction working group

PIs: T. POISOT (UNIVERSITÉ DE MONTRÉAL) AND L.J. POLLOCK, (McGILL UNIVERSITY)

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)

• 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

- **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). Predicting metawebs: Transfer of graph embeddings can help alleviate spatial data deficiencies. *Preprint*. https://doi.org/10.32942/osf.io/vyzgr
- **Strydom, T.**, & Poisot, T. (2022). SpatialBoundaries.jl: Edge detection using spatial wombling. *Preprint*. https://doi.org/10.32942/osf.io/sjxd8
- 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

^{*} Indicates co-lead author

INVITED TALKS

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

ΤΔΝΥΔ STRYDON

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

11th Annual QCBS Symposium

Dec., 2020

SHORT PRESENTATIONS

TANYA STRYDOM, GIULIO V. DALLA RIVA AND TIMOTHÉE POISOT

Reconstructing food webs using transfer learning

CSEE-SCEE Annual Meeting

Aug., 2021

WORKSHOPS AND ORGANISED SESSIONS

TANYA STRYDOM, SALOMÉ BOUSKILA AND TIMOTHÉE POISOT

Space Oddity: Thinking About Ecological Networks Across Space

ESA/CSEE Meeting Aug., 2022

Francis Banville, Gabriel Dansereau, **Tanya Strydom**

ATDC A LAA II

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 - present

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*.

Academic Service

Societry for Open, Reliable, and Transparent Ecology and Evolutionary Biology

 Member
 2021 - Present

Québec Centre for Biodiversity Sciences

STUDENT MEMBER 2020 - Present

Reviewed Journals

PLANT ECOLOGY, PLOS ONE

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