

# 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.

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

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



<sup>\*</sup> Indicates co-lead author

#### **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

#### INVITED TALKS

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

Apr., 2022 Living Norway Colloquium

ML4MS mini-conference

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

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

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

ATBC Annual Meeting

Designing a collective prototype of future tropical and subtropical science GRACIELLE HIGINO, MICKEY BOAKYE, NORMA FORERO, TANYA STRYDOM

**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