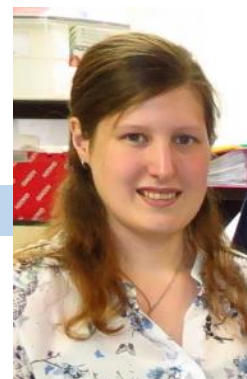


Wilma Nel

Curriculum Vitae



Personal Information

Date of Birth	22 November 1992
Citizenship	South African
Contact Details	Janine.nel@fabi.up.ac.za (+27)836000469
Website	https://fabinet.up.ac.za/index.php/people-profile?profile=1241
Orchid	http://orcid.org/0000-0001-6368-2203

Education

2018 - Current	Doctor of philosophy (PhD): Microbiology University of Pretoria
2016 - 2018	Master of Science (MSc): Microbiology (81.00%) University of Pretoria <i>Cum laude</i>
2015	Bachelors of Science – Honours (BSc (Hons)): Microbiology (73.56%) University of Pretoria
2011 - 2014	Bachelors of Science (BSc): Microbiology (59.09%) University of Pretoria Distinctions: CIL121 (Information literacy) BCM254 (Practical: Introduction to proteins and enzymes)
2006 - 2010	High School: Mathematics, Mathematics 3, Afrikaans, English, Physical Sciences, Life Sciences, Accounting and Life Orientation Hoërskool Eldoraingne Distinctions: Accounting

Research Outputs

Peer-Reviewed Publications: First Author

- 2019** Nel WJ, Duong TA, de Beer ZW, Wingfield MJ (2019) Black root rot: A long known but little understood disease. *Plant Pathology*. <https://doi.org/10.1111/ppa.13011>
- 2018** Nel WJ, Duong TA, Wingfield BD, Wingfield MJ, de Beer ZW (2018). A new genus and species for the globally important, multi-host root pathogen *Thielaviopsis basicola*. *Plant Pathology*, **67**(4), 871-882. 10.1111/ppa.12803 (Cover)
- 2018** Nel WJ, Duong TA, Wingfield MJ, Wingfield BD, Hammerbacher A, De Beer ZW (2018) Heterothallism revealed in the root rot fungi *Berkeleyomyces basicola* and *B. rouxiae*. *Fungal Biology*, **122**(11), 1031-1040. 10.1016/j.funbio.2018.08.006

Research Outputs

Peer-Reviewed Publications: Co-Author

- 2018** Wingfield BD, Bills GF, Dong Y, Huang W, Nel WJ, Swalarsk-Parry BS, Vaghefi N, Wilken PM, An Z, de Beer ZW, De Vos L, Chen L, Duong TA, Gao Y, Hammerbacher A, Kikkert JR, Li Y, Li H, Li K, Li Q, Liu X, Ma X, Naidoo K, Pethybridge SJ, Sun J, Steenkamp ET, van der Nest M, van Wyk S, Wingfield MJ, Xiong C, Yue Q, Zhang X. (2018) IMA Genome-F 9 Draft genome sequence of *Annulohyphoxylon stygium*, *Aspergillus mulundensis*, *Berkeleyomyces basicola* (syn. *Thielaviopsis basicola*), *Ceratocystis smalleyi*, two *Cercospora beticola* strains, *Coleophoma cylindrospora*, *Fusarium fracticaudum*, *Phialophora cf. hyalina*, and *Morchella septimelata*. *IMA Fungus* **9**(1):199-223. 10.5598/imafungus.2018.09.01.13
- 2018** Paap T, de Beer ZW, Migliorini D, Nel W, Wingfield MJ (2018). The polyphagous shot hole borer (PSHB) and its fungal symbiont *Fusarium euwallaceae*: a new invasion in South Africa. *Australasian Plant Pathology* 10.1007/s13313-018-0545-0

Research Outputs

Conference Presentations

- 2019** **51st Congress of the Southern African Society for Plant Pathology (SASPP)**
Title: Genomic patterns of convergently evolved bark and ambrosia beetle associated fungi reveal patterns of genome reduction and gene loss
Authors: Nel, W.J., Wingfield, B.D., McTaggart, A.R., Wingfield, M.J., de Beer, Z.W., Lim, H.J., van der Nest, M.A., Duong, T.A.

- 2018** **Joint conference of the South African Society for Bioinformatics and the South African Genetics Society (SASBi/SAGS)**
 Title: Genomic basis of convergent evolution in beetle-associated Sordariomycete fungi.
 Authors: W.J. Nel, B.D. Wingfield, A. McTaggart, M.J. Wingfield, Z.W. de Beer, H-J. Lim, M. van der Nest, T.A. Duong
- 2018** **South African Association of Botanists (SAAB) Conference**
 Title: Cryptic heterothallic mating system discovered in the important root pathogens previously known as *Thielaviopsis basicola* (Award: Best lightning presentation)
 Authors: W.J. Nel, T.A. Duong, A. Hammerbacher, B.D. Wingfield, M.J. Wingfield, Z.W. de Beer
- 2017** **South African Society for Systematic Biology (SASSB)**
 Title: Multigene sequence data reveals that the root rot pathogen *Thielaviopsis basicola* constitutes two sister species in a new genus
 Authors: W.J. Nel, T.A. Duong, B.D. Wingfield, M.J. Wingfield, Z.W. de Beer
- 2017** **50th Congress of the South African Society of Plant Pathology (SASPP)**
 Title: Multigene sequence analyses reveal a new genus and a new species in a globally important, multi-host root pathogen
 Authors: W.J. Nel, T.A. Duong, B.D. Wingfield, M.J. Wingfield, Z.W. de Beer

Research Outputs Conference Posters

- 2019** **51st Congress of the Southern African Society for Plant Pathology (SASPP)**
 Title: *Berkeleyomyces basicola* and *Berkeleyomyces rouxiae*: Black root-rot pathogens of globally important crop plants.
 Authors: Nel, W.J., Duong, T.A., Hammerbacher, A., Wingfield, B.D., Wingfield, M.J., de Beer, Z.W
- 2018** **International Mycological Congress (IMC)**
 Title: Taxonomy and mating strategy of *Thielaviopsis basicola*, a globally important pathogen of agricultural crops
 Authors: W.J. Nel, T.A. Duong, A. Hammerbacher, B.D. Wingfield, M.J. Wingfield, Z.W. de Beer
- 2018** **South African Association of Botanists (SAAB) Conference**
 Title: A new genus and sister species for the globally important, multi-host root pathogen, *Thielaviopsis basicola* (Award: Runner-up best poster)
 Authors: W.J. Nel, T.A. Duong, B.D. Wingfield, M.J. Wingfield, Z.W. de Beer

- 2017** **University of Pretoria Genome Research Institute (GRI) Symposium**
Genome sequencing reveals the root pathogens, previously known as *Thielaviopsis basicola*, to possess the genes required for heterothallic mating
Authors: W.J. Nel, T.A. Duong, A. Hammerbacher, B.D. Wingfield, M.J. Wingfield, Z.W. de Beer
- 2017** **XIX International Botanical Congress**
Title: A new genus and sister species described for the globally important, multi-host root pathogen, *Thielaviopsis basicola*
Authors: W.J. Nel, T.A. Duong, B.D. Wingfield, M.J. Wingfield, Z.W. de Beer
- 2017** **The 29th Fungal Genetics Conference**
Title: The important root rot pathogen *Thielaviopsis basicola* shown to be heterothallic
Authors: W.J. Nel, T.A. Duong, B.D. Wingfield, M.J. Wingfield, A. Hammerbacher, Z.W. de Beer
- 2017** **50th Congress of the South African Society of Plant Pathology (SASPP)**
Title: Fungicolous species of Ophiostomatales, including three new species from *Termitomyces* fungus combs
Authors: W.J. Nel, T.A. Duong, M. Poulsen, D. Aanen, S. Vreebrug, Z.W. de Beer

Research Outputs

Other Conference Contributions

- 2018** **South African Association of Botanists (SAAB) Conference**
Title: First report of the polyphagous shothole borer (PHSB) and its fungal symbiont in South Africa
Authors: T. Paap, Z.W. De Beer, D. Migliorini, W.J. Nel, M.J. Wingfield
- 2018** **South African Association of Botanists (SAAB) Conference**
Title: Subspecies of the Dutch Elm Disease fungus cannot be distinguished based on multigene sequences
Authors: F. Mthunzi, R. Chang, W.J. Nel, Z.W. de Beer
- 2017** **Combined Congress of the Entomological and Zoological Societies of Southern Africa (ESSA/ZSSA)**
Title: A survey of entomopathogenic *Beauveria* spp. in South African plantations
Authors: Z.W. de Beer, H. de Bruin, W.J. Nel, B. Slippers

Awards and Scholarships

2018 – current	National Research Foundation: Freestanding PhD bursary
2018	Forestry and Agricultural Biotechnology Institute: Mentorship award
2018	University of Pretoria: PhD Student Bursary
2018	Mycological Society of America: Mentorship student travel award
2018	University of Pretoria: Merit certificate for academics for MSc: Microbiology
2018	South African Association of Botanists (SAAB) Conference: Best student lightning oral presentation
2017	University of Pretoria: Masters Student Bursary
2017	National Research Foundation: Scarce skills bursary linked travel award
2016 - 2017	National Research Foundation: Scarce skills masters bursary
2016	University of Pretoria: Masters Student Bursary

Memberships to Societies

2018 - 2019	FABI Social Club
2018	South African Association of Botanists (SAAB)
2018	African Mycological Association (AMA)
2017	South African Society for Systematic Biology (SASSB)
2017	Mycological Society of America (MSA)
2016 – Current	South African Society for Plant Pathology (SASPP)
2016 – 2017	FABI Social Club

Experience

Research Techniques

Molecular techniques:

DNA & RNA extraction; PCR; Agarose Gel Electrophoresis; Sanger Sequencing; Basic and advanced phylogenetics

Bioinformatics techniques:

De Novo genome assembly; Genome Annotation; Gene mining and Identification; Phylogenomics; Primer design

Mycological techniques:

Primary fungal isolation; Culture purification and maintenance; Single spore techniques; Mating studies; Co-culture studies; Species identification and description

Microscopy techniques:

Cleaning and maintenance; Advanced stereo, light, DIC, and phase contrast microscopy; Familiar with multiple different software platforms; Microscopy instruction to users

Entomology techniques:

Collection, handling and storage of insect specimens; Destructive vs. non-destructive DNA extraction methods; Basic identification

Teaching & Tutoring

2016 – 2018: Second year Microbiology
2015: First year Microbiology

Workshops

2018: Metagenomics/metatranscriptomics Workshop
2017: GATK Workshop
2016: FABI Advanced Phylogenetics Workshop
2016: Microsatellite Workshop

Other relevant experience

2018: Assistant during (FABI) Polyphagous shot hole borer workshop
2017 – Current: Lab Manager
2017 – 2018: Microscopy administrative assistant
2017: *Ceratocystis fimbriata* Genome annotation jamboree
2016 – Current: FABI work experience programme
2014: Mentorship student in the Department of Microbiology and Plant Pathology
January 2014: Research Assistant