

Curriculum Vitae

Frances Alice Lane

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Education and Qualifications:

Duration: 2020 – present
Course: PhD Genetics
Institute: University of Pretoria
Thesis title: Elucidating unidirectional mating-type switching in *Ceratocystis*
Supervisors: Dr Markus Wilken, Prof Brenda Wingfield and Prof Mike Wingfield

Duration: 2018 – 2019
Course: MSc Genetics – *Cum laude*
Institute: University of Pretoria
Thesis title: Development of a genetic transformation system in the family Ceratocystidaceae with specific reference to *Ceratocystis albifundus*
Supervisors: Prof Brenda Wingfield and Dr Markus Wilken

Duration: 2017
Course: BSc Hons Genetics – *Cum laude*
Institute: University of Pretoria
Thesis title: The mating strategies of *Davidsoniella* species
Supervisors: Prof Brenda Wingfield and Dr Markus Wilken

Duration: 2014 – 2016
Course: BSc Genetics
Institute: University of Pretoria
Majors: Genetics and Microbiology

Duration: 2012 – 2013
Course: BCom Accounting Sciences
Institute: University of Pretoria
Status: Incomplete – changed career choice to one in science

Duration: 2007 – 2011
Institute: Willowridge High School
Matric subjects: English First Language, Afrikaans Second Language, Mathematics, Accounting, Life Sciences, Physical Sciences, Life Orientation and AP Mathematics

Experience in Academia

Research techniques

Microbiological: Fungal and single spore isolation, culturing, and maintenance of fungal and bacterial isolates

Molecular: DNA and RNA isolation, PCR, cDNA synthesis, agarose gel electrophoresis, Sanger sequencing, cloning, genetic transformation of bacteria and fungi, protoplast extractions

Bioinformatic: Gene identification, primer design, DNA sequence analysis, draft genome assembly, genome mining, basic phylogenetics

Research outputs

Peer-reviewed publications:

2021 Lane FA, du Plessis D, Wingfield BD, Wilken PM. Transferring an *Agrobacterium*-mediated transformation protocol across eight genera in the Ceratocystidaceae. *Forest Pathology* e12688

van der Nest MA, Chávez R, De Vos L, Duong TA, Gil-Durán C, Ferreira MA, Lane FA, Levicán G, Santana QC, Steenkamp ET, Suzuki H, Tello M, Rakoma JR, Vaca I, Valdés N, Wilken PM, Wingfield MJ, Wingfield BD. Draft genome sequences of *Penicillium roqueforti*, *Fusarium sororula*, *Chrysosporthe puriensis*, and *Chalaropsis populi*. *IMA Fungus* 12:5

Krämer D, Lane FA, Steenkamp ET, Wingfield BD, Wilken PM. Unidirectional mating-type switching confers self-fertility to *Thielaviopsis cerberus*, the only homothallic species in the genus. *Fungal Biology* 10.1016/j.funbio.2020.12.007

Wilken PM, Kharwar RN, Lumbsch HT, Navathe S, Pérez CA, Ramírez-Berrutti N, Sharma R, Sun Y, Wingfield BD, Huhndorf S, Duong TA, Aylward J, Chand R, Grewe F, Lane FA, Sinha S, Ametrano C, Distefano I, Divakur PK, Wingfield MJ. Draft genome sequences of *Ambrosiella cleistominuta*, *Cercospora brassicicola*, *C. citrullina*, *Phyrcia stellaris* and *Teratosphaeria pseudoeucalypti*. *IMA Fungus* 11(19) 10.1186/s43008-020-00039-7

2018 Wingfield BD, Kolarik M, Menzies JG, Naidoo K, Pochopski O, Shoukouhi P, Santana QC, Seifert KA, Soal NA, Steenkamp ET, Tatham CT, Van der Nest MA, Havenga M, Findlay W, Liu M, Nguyen HDT, Lane FA, Morgan SW, De Vos L, Wilken PM, Doung TA, Aylward J, Coetzee MPA, Dadej K, De Beer ZW, Wingfield MJ. Nine draft genome sequences of *Claviceps purpurea* s.lat., including *C. arundinis*, *C. humidiphila*, and *C. cf. spartinae*, pseudomolecules for the pitch canker pathogen *Fusarium circinatum*, draft genome of *Davidsoniella eucalypti*, *Grosmannia galeiformis*, *Quambalaria eucalypti*, and *Teratosphaeria destructans*. *IMA Fungus* 9: 401–418

Conference abstracts:

2020 Lane FA, Wingfield BD, Wilken PM. The transferability of *Agrobacterium*-mediated transformation technology amongst species from the family Ceratocystidaceae. 2020 MSA Virtual Meeting, "Mycology from the Cloud"

Krämer D, Lane F, Steenkamp E, Wingfield B, Wilken M. Unidirectional mating-type switching confers self-fertility to *Thielaviopsis cerberus*, the only homothallic member of the genus. 2020 MSA Virtual Meeting, "Mycology from the Cloud"

2018 Lane FA, Wilken PM, Wingfield BD. Deletion of mating-type genes in the production of asexual spores in the fungus *Ceratocystis albifundus*. SAGS/SASBi Conference, 16 – 18 October 2018, Golden Gate Hotel, South Africa

Courses and symposiums

Course: FameLab – Presenting science to the public and working with the media workshop

Duration: 4 – 5 February 2020

Place: Forestry and Agricultural Biotechnology Institute, University of Pretoria

Course: Advanced phylogenetics workshop

Duration: 30 July – 3 August 2018

Place: University of Pretoria

Tutoring, mentoring and outreach

Course: Molecular genetics (GTS 251)

Duration: Jan 2021 – present

Institute: University of Pretoria

Position: Tutor

Course: Introductory genetics (GTS 161)

Duration: July 2020 – December 2020

Institute: University of Pretoria

Position: Head tutor

Event: North Gauteng Senior Science Fair

Duration: 2018 – 2019

Position: Junior judge

Programme: TPCP/CTHB Mentorship programme

Duration: 2019 – 2020

Institute: Forestry and Agricultural Biotechnology Institute, University of Pretoria

Position: Mentor to undergraduate students

Course: Molecular genetics (GTS 251)

Duration: Jan 2020 – June 2020

Institute: University of Pretoria

Position: Tutor

Course: Molecular genetics (GTS 251)
Duration: Jan 2019 – June 2019
Institute: University of Pretoria
Position: Tutor

Course: Eukaryotic gene control and development (GTS 351)
Duration: Jan 2018 – Jun 2018
Institute: University of Pretoria
Position: Tutor

Course: Introductory genetics (GTS 161)
Duration: July 2017 – December 2017
Institute: University of Pretoria
Position: Tutor

Subject: Mathematics
Duration: 2012
Position: Tutor

Bursaries and scholarships

2021 - Present General Doctoral Scholarship, Partial Cost of Studies Grant, National Research Foundation

2020 - Present UP Postgraduate Doctoral Bursary, University of Pretoria

2019 UP Postgraduate Masters Research Bursary, University of Pretoria

2018 - 2019 Grantholder Linked Bursary for Masters student, National Research Foundation

Other relevant experiences

Mentorship: Centre of Excellence in Tree Health Biotechnology (CTHB) mentorship program in the Forestry and Agricultural Biotechnology Institute (FABI)

Details: I was a mentee in the CTHB mentorship program during which I was introduced to the workings of a genetics laboratory and investigated the mating systems of *Ceratocystis* species

Mentors: Dr Markus Wilken (PhD student) and Catherine Tatham (MSc student)

Duration: 2015 – 2016

Part-Time Employment

Duration: 2013 - 2018

Company: Exclusive Books

Position: Supervisor and bookseller

Duties: After working as a bookseller for a year, I was promoted to a supervisor. Some of my responsibilities included selling books, merchandising, cashing up, delegation of duties and opening/closing shop

References

Name: Prof Brenda Wingfield
Relation: Current co-supervisor; previous primary supervisor
Email: brenda.wingfield@up.ac.za

Name: Dr Markus Wilken
Relation: Current primary supervisor; previous mentor and co-supervisor
Email: markus.wilken@fabi.up.ac.za

Name: Miss Karen Shoal
Relation: Manger of Exclusive Books
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