

Curriculum Vitae

Name - Tanay Bose

Current position - Postdoctoral fellow, Research Leader at Future Africa Programme and Tuks Young Research Leader Programme Fellow 2018

Date of Birth - 21 November 1985

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ORCID - [Link](#)

Publon - [Link](#)

ResearchGate - [Link](#)

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Education

1. **Doctor of Philosophy in Microbiology**, Forestry and Agricultural Biotechnology Institute, University of Pretoria (2013-17)

Thesis title: *Phytophthora* species diversity associated with native and non-native forests in South Africa

Advisor: Prof Michael J Wingfield, University of Pretoria

Co-advisor: Prof Jolanda Roux, University of Pretoria

Prof Treena I Burgess, Murdoch University

2. **Master of Science in Botany**, specialization in Taxonomy and Molecular Phylogeny of Ascomycota, University of British Columbia (2010-13)

Thesis title: Taxonomy and phylogeny of mitosporic Capnodiales and description of a new sooty mold species, *Fumiglobus pieridicola*, from British Columbia, Canada

Supervisor: Prof Mary L Berbee, University of British Columbia

Collaborator: Dr Don R Reynolds, University Herbarium, University of California, Berkeley

3. **Master of Science in Botany**, specialization in Plant Pathology (Gold Medalist), Presidency College, University of Calcutta (2007-09)
 - Thesis title: Study of Vascular Wilt Disease of *Chlorophytum nepalense* (Lindley) Baker
 - Supervisors: Dr Sumita Ghosh, Presidency College, University of Calcutta
 - Co-supervisor: Dr S N Ghosh, Presidency College, University of Calcutta
4. **Bachelor of Science (Honours) in Botany** (First Class), University of Calcutta, 2004-07 Minor subjects Zoology and Chemistry

Publications

1. Bose T, Ghosh S, Ghosh SN (2010) First report of *Fusarium pallidoroeseum* causing wilt disease on *Chlorophytum nepalense* (Lindley) Baker *Journal of Mycopathological Research* 48(1) 111-114
2. Bose T, Reynolds DR, Berbee ML (2013) Phylogeny of mitosporic Capnodiales and description of a new sooty mold species *Fumiglobus pierisicolus* from British Columbia, Canada APS-MSA Joint Meeting Austin, TX: *Phytopathology* 103(6, Supplementary 2) 19
3. Bose T, Reynolds DR, Berbee ML (2014) Common, unsightly, and until now undescribed: *Fumiglobus pieridicola* sp nov a sooty mold infesting *Pieris japonica* from western N America *Mycologia* 48(1): 111-114
4. Rahimlou S, Bose T, Babaeizad V, Sayari M, Tajick M (2015) Molecular data confirm mitosporic state of *Hyphodermella rosae* (Phanerochaetaceae) as the pathogen of rosaceous fruits in northern Iran *Sydowia* 67(1): 189-196
5. Rahimlou S, Babaeizad V, Bose T, Sayari M (2016) Determination of lignin-modifying enzymes (LMEs) in *Hyphodermella* species using biochemical and molecular techniques *Mycologia Iranica* 3(1) 57-63
6. Burgess TI, White D, McDougall K, Garnas J, Dunstan W, Santiago C, Carnegie A, Warboys S, Cahill D, Vettraino AM, Stukely M, Liew ECY, Paap T, Bose T, Migliorini D, Williams B, Brigg F, Crane C, Rudman T, Hardy Hardy GStE (2016) *Phytophthora* distribution and diversity across Australia *Pacific Conservation Biology* 23(1): 1-13
7. Bose T, Burgess TI, Roux J, Wingfield MJ (2017) *Phytophthora alticola*; revised description based on new collections and a neotype *Sydowia* 69: 161-170
8. Bose T, Wingfield MJ, Roux J, Vivas M, Burgess TI (2018) Community composition and distribution of *Phytophthora* species across adjacent native and non-native forests of South Africa *Fungal Ecology* 36:17-25

9. Bose, T, Wingfield, MJ, Roux, J, Vivas M, Burgess TI (2018) Diversity of *Phytophthora* species associated with the roots of native and non-native trees in South Africa *Fungal Ecology (Manuscript under preparation)*
10. Bose, T, Roux, J, Burgess, TI, Wingfield, MJ (2018) Pathogenicity of five *Phytophthora* spp on two important non-native plantation tree species in South Africa *Australasian Plant Pathology (Manuscript under preparation)*
11. Singh S, Bose T, Kleynhans, Lall N (2018) The effect of age and seasonal variation on the recovery of bioactive compounds from *Ceratonia siliqua* L *Chromatographia (Manuscript under preparation)*

Researches

1. Diversity and distribution of *Phytophthora* species in South Africa with special reference to those causing diseases of *Eucalyptus* and *Acacia* using pyrosequencing
2. Barcoding of mycorrhizal fungi associated with endemic and endangered orchids of South Africa
3. Oomycetes associated with stone fruit disease in Western Cape Province of South Africa
4. Phylogeny of Ascomycota with special reference to capnodiaceous molds (sooty molds)
5. Host pathogen interaction with special reference to wilt disease caused by soil borne pathogens on endangered and endemic plant of Eastern Himalayas
6. Effect of crude plant extracts on the growth and sporulation of phytopathogenic fungi
7. Cultivation of edible mushroom
1. Estimation of protein and carbohydrate content in cultivated and wild varieties of edible mushrooms in West Bengal, India (Specialized in cultivation of *Pleurotus sajor-kaju*, *Agaricus bisporus*, *Volvariella volvacea* etc)
8. Study of Mycorrhizal association in common trees of West Bengal, India
9. Study of animal (Mammal) pheromones with special reference to biochemical structures and compositions

Areas of Interest

1. Fungal and Oomycetes disease of forest trees
2. Molecular phylogeny of fungi
3. Barcoding of orchid mycorrhizae
4. Fungal systematics
5. Orchid tissue culture
6. Study of fossilized fungal spores from peat samples
7. Cultivation of common edible mushrooms
8. Study of biotic and abiotic stress factors on growth and development of *Saccharomyces cerevisiae*
9. Mycorrhizal association in Angiosperm, Pteridophytes and Gymnosperms

10. Plant chromosomes and karyotyping
11. Genetic toxicology and the effect of pesticides and antimicrobial substances on chromosomal abnormalities in angiosperms
12. Study of the detrimental effects on microorganisms and algae caused by environmental pollutants
13. Host pathogen relationship in phytopathogenic fungi
14. Host defense mechanism with reference to phytoalexins and phytoanticipins

Techniques known

1. Metabarcoding
2. *Phytophthora* baiting
3. Isolation of soil borne pathogen and its characterization
4. Screening of novel microbial organisms from soil, water and air
5. Identification, description and illustration of Fungi
6. Statistical Analyses – R
7. Isolation and estimation of phytoalexins and phytoanticipins
8. Isolation of plant pathogens
9. Biological and chemical control of phytopathogens
10. Preparation plant chromosomes for karyotyping
11. Study of lipids, amino acids using TLC
12. Purification of proteins
13. Gel electrophoresis
14. Microscopy
15. Freeze microtome
16. Polyacrylamide Gel Electrophoresis (PAGE)
17. Polymerase Chain Reaction
18. Microscopic study of mycorrhizal fungi
19. Plant tissue culture
20. Extraction of crude plant secondary metabolites
21. Isolation of seed borne pathogens
22. DNA extraction
23. DNA sequencing
24. Bacterial cloning
25. DNA excision using nuclease
26. Primer designing
27. RT-PCR

28. Phylogenetic softwares RAxML, ClustralX, ClustralW, jMODEL TEST₂, Mesquite, McClade, PAUP, Geneious, Mr Bayes etc
29. Identification and characterization of fossilized fungal spores from Ascomycota

Teaching

1. BIOL 209 (Non-Vascular Plants) - 2010-2013, Department of Botany, University of British Columbia
2. BIOL 210 (Vascular Plant) - 2010-2013, Department of Botany, University of British Columbia
3. MBY251 (General Bacteriology), Department of Microbiology, University of Pretoria, 2016
4. MBY755 (Advanced Techniques in Microbiology) - Department of Microbiology, University of Pretoria, 2017- ongoing
5. Mentor at DST-NRF Centre for Excellence in Tree Health Biotechnology (CTHB), 2014-current

Student supervision

1. Mr Jacques E Theron – BSc – 2014-15 (DST-NRF, CTHB, FABI)
2. Mr Robert J van Vuuren – BSc – 2015 - 2017 (DST-NRF, CTHB, FABI)
3. Mr Johannes C Joubert - B Sc (Hons) – 2017 (Dept. of Biochemistry, Genetics and Microbiology, UP)
4. Ms Dineo M Mailula – B Sc (Hons) – 2016; MSc – 2017 – ongoing (Dept. of Biochemistry, Genetics and Microbiology, UP)
5. Ms Modjadji Makwela – B Sc (Hons) – 2017; MSc 2018 - ongoing (Dept. of Biochemistry, Genetics and Microbiology, UP)
6. Ms Khwathelani M Takalani (MSc)– 2017 (Dept. of Biochemistry, Genetics and Microbiology, UP)
7. Ms Patience Modiba (MSc) – 2018 (Dept. of Biochemistry, Genetics and Microbiology, UP)
8. Ms. Bianca Jones (Hons) – 2018 (Dept. of Zoology, UP)

Reviewer

Reviewer for ISI rated journal in Mycology and Plant Pathology

Work Experience

1. Instructor for lab courses at the University of British Columbia
2. Instructor for lab courses at the University of Pretoria
3. Plant Diagnostic Clinic (FABI) - November 2013 -2016
4. Research assistant with Dr Almuth Hammerbacher (Fungal Biochemistry and Host-Pathogen Interaction)
5. Chairman, Protea Student Residence, Department of Residence Affairs and Accommodation (TuksRes), University of Pretoria - August 2016 - 2017
6. Chairman, TuksRes Postgraduate Research Committee, University Of Pretoria - March 2017 – ongoing

Awards

1. Gold Medalist Master of Science in Botany, Presidency College, University of Calcutta - 2009
2. Recipient of Biology Teaching Assistant Professional Development (BioTAP) certificate 2013, Department of Botany, University of British Columbia
3. FABI Best Mentorship Award 2016
4. FABI Best Website Award 2016
5. Sappi funded postdoctoral fellowship 2018-2021 on *Eucalyptus* tree health

Member

1. Mycological Society of America (MSA)
2. Mycological Society of India (MSI)
3. International Society for Fungal Conservation (ISFC)
4. Advisory Board, Global Journal of Research on Medicinal Plants & Indigenous Medicine (GJRMI)
5. Editorial Board, Phytodiversity, Journal of the Association for Promotion of Plant Science
6. Research Leader Future Africa Project, University of Pretoria

Research Visits

1. Visiting researcher, Prof Treena Burgess' Laboratory, Centre for *Phytophthora* Research and Management (CPSM), Department of Biological Science, Murdoch University, Perth, Western Australia – 1 July 2014 – 30 September 2014

References

1. Prof Michael J Wingfield
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3. Prof Jolanda Roux

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4. Prof Treena I Burgess

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5. Prof Mary L Berbee

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