

## Thabiso Eric Motaung, PhD

Academic: Faculty of Natural and Agricultural Sciences (NAS)

cell: (+27) 78 8148 142

tel: (+27) 12 4203 717

Department of Biochemistry, Genetics and Microbiology (BGM)

e-mail: thabiso.motaung@up.ac.za

Forestry and Industrial Biotechnology Institute (FABI)

website: <https://www.fabinet.up.ac.za/index.php/people-profile?profile=1408>

### Online Profiles

Google Scholar: <https://scholar.google.co.za/citations?user=Ov-gUvUAAAAJ&hl=en>

FABI: <https://www.fabinet.up.ac.za/index.php/people-profile?profile=1408>

ResearchGate: [https://www.researchgate.net/profile/Thabiso\\_Motaung](https://www.researchgate.net/profile/Thabiso_Motaung)

ASAPbio: [https://asapbio.org/dt\\_team/thabiso-motaung](https://asapbio.org/dt_team/thabiso-motaung)

### Education

South African Sugarcane Research Institute	Biotechnology (Variety Improvement)	Post-doc	2019
Agricultural Research Council	Small Grains Institute	Post-doc	2017
University of the Free State	Biotechnology	PhD	2015

### Positions & Employment

2019-present	Faculty of Natural and Agricultural Sciences, Department of Biochemistry, Genetics and Microbiology Forestry and Industrial Biotechnology Institute, University of Pretoria (Pretoria, South Africa) <i>Academic/Lecturer and Group Leader</i>
2017-present	Department of Environment, Forestry and Fisheries (Directorate Biosafety) (Pretoria, South Africa) <i>GMO advisory sub-committee (Ministerial appointment)</i>
2017-20	South African Sugarcane Research Institute, Kwa-Zulu Natal (Durban, South Africa) <i>Postdoctoral Research Fellow</i>
2015-2017	Agricultural Research Council - Small Grain Institute, Free State (Bethlehem, South Africa) <i>Postdoctoral Research Fellow</i>

### Professional Service & Memberships

2021-present	Member (Board of Directors), ASAPbio (Accelerating Science and Publication in Biology)
2021-present	Review Editor, Frontiers in Plant Sciences and Frontiers in Microbiology
2021-present	Member, International Society for Extracellular Vesicles
2020-present	Reviewer, Division Ethics committee, the Department of Biochemistry, Genetics, and Microbiology
2019-present	Researcher, Forestry and Agricultural Biotechnology Institute
2019-present	Member, Metabolomics South Africa
2019-present	Fellow, Future Africa, Tuks Young Leadership Programme
2019-present	Fellow, ASAPbio (Accelerating Science and Publication in Biology)
2018-present	Reviewer, GMO Advisory committee, National Department of Environments, Forestry and Fisheries
2018-2019	Institutional Ambassador, ASAPbio (Accelerating Science and Publication in Biology)

### Awards & Research Grants

2021	DSI-NRF Thuthuka, NRF rating track (Grant No: 129580) <i>Duration: 1<sup>st</sup> cycle, 2021-2023; 2<sup>nd</sup> cycle, 2023-2026</i>
2020	DSI-NRF nGAP (New Generation of Academics) RDP (Grant No. 128877) <i>Duration: awarded for 2020</i>
2020	University of Pretoria RDP (Grant No. 1580) <i>Duration: 2020-2022</i>
2017	DSI-NRF Emerging Researchers (Grant No. 104914) <i>Duration: 2017-2020</i>
2015	DSI-NRF Scarce Skills Fellowship Program (Grant No. SFP14070774252) <i>Duration: 2015-2017</i>
2013	Price for best M. Sc. Student, on a national level, Limpopo, Bela-Bela, SASM 2013
2011	J.P. van der Walt-prize for best M.Sc.-dissertation in the study of yeast, University of the Free State
2011	DSI-NRF Innovation Scholarship (Grant No. 75048) <i>Duration: 2011-2014</i>
2010	TATA Scholarship <i>Duration: awarded for 2010</i>

## Publications

1. Jane Chepsergon, **Thabiso E. Motaung**, Lucy Novungayo Moleleki (2021). Core RxLR Effectors in Phytopathogenic oomycetes: A promising way to breeding for durable resistance in plants? *Virulence* doi:10.1080/21505594.2021.1948277
2. **Thabiso E Motaung**, Emma T Steenkamp (2021). Extracellular vesicles in teasing apart complex plant-microbiota links - implications for microbiome-based biotechnology. *mSystems*. *Accepted*. *corresponding author*
3. **Thabiso E Motaung**, Chizné Peremore, Brenda Wingfield, Emma Steenkamp (2020). Plant-associated fungal biofilms – knowns and unknowns. *FEMS Microbiology Ecology* 96: 12 (DOI: 10.1093/femsec/fiaa224). *corresponding author*
4. Jane Chepsergon, **Thabiso E Motaung**, Daniel Bellieny-Rabelo, Lucy Novungayo Moleleki (2020) Organize, don't agonize: strategic success of Phytophthora species. *Microorganisms* 8:917.
5. **Thabiso E Motaung** (2020). Chloronicotinyl insecticide imidacloprid: physiological importance, pitfalls and emerging opportunities. *Crop Protection* 131: 105097. *corresponding author*
6. Silindile Maphosa, Lucy Moleleki, **Thabiso E Motaung** (2020) Antieukaryotic type six secretion system virulence factors of bacteria. Preprints 2020, 2020110062, doi:10.20944/preprints202011.0062.v1. *Preprint*
7. **Thabiso E Motaung**, Hiromasa Saitoh and Toi J Tsilo (2017). Large-scale molecular genetic analysis in plant pathogenic fungi: A decade of genome-wide functional analysis. *Molecular Plant Pathology*, 18:754-764.
8. **Thabiso E Motaung** (2018). Cryptococcus neoformans Mutant Screening: A Genome-Scale's Worth of Functional Analyses. *Fungal Biology Reviews* 32:181-203. *corresponding author*
9. **Thabiso E Motaung**, Toi J. Tsilo, Ruan Ells, Carolina H Pohl and Jacobus Albertyn (2017). Genome-wide functional analysis in Candida albicans. *Virulence* 8:1563-1579. *corresponding author*
10. **Thabiso E Motaung**, Toi J. Tsilo (2017). Functional insights into the Magnaporthe oryzae class II myosin. *Virulence* 8:1091-1095. *Invited paper*. *corresponding author*
11. Dweba C. Cwengile, Figlan Sandiswa, Shimelis A. Hussein, **Thabiso E. Motaung**, Mwadzingeni Learnmore, Scott Sydenham and Toi J. Tsilo (2017). Fusarium head blight of wheat: Pathogenesis and control strategies. *Crop Protection*, 91:114-122.
12. **Thabiso E Motaung**, Kiro R. Petrovski, Inge-Marie Petzer, Oriël Thekisoe and Toi J. Tsilo (2017). Importance of bovine mastitis in Africa. *Animal Health Research Reviews* 18:58-69. *corresponding author*
13. **Thabiso E. Motaung**, Jacobus Albertyn, Carolina H. Pohl and Gerwald Köhler (2015). Candida albicans mutant construction and characterization of selected virulence determinants. *Journal of Microbiological Methods* 115:153-165.
14. **Thabiso E Motaung**, Jacobus Albertyn, Johan L. F. Kock, Ching-Fu Lee, Sung-Oui Suh, Meredith Blackwell and Carolina H. Pohl (2013) Trichosporon vanderwaltii sp. nov., an asexual basidiomycetous yeast isolated from soil and beetles. *Antoni van Leeuwenhoek* 103:313-319.
15. **Thabiso E. Motaung**, Jacobus Albertyn, Johan L.F. Kock and Carolina H. Pohl (2012) Cryptococcus cyanovorans sp. nov., a basidiomycetous yeast isolated from cyanide contaminated soil. *International Journal of Systematic and Evolutionary Microbiology* 62:1209-1215.

## Referee Duties (Serving as reviewer)

- 2021 Africa Science Leadership Programme
- 2020 Preventive Veterinary Medicine
- 2019 Plant and Soil
- 2018 International Journal of Immunopathology and Pharmacology
- 2017 Virulence
- 2017 African Journal of Biotechnology

## Published Full-length Conference Papers/Keynote Addresses

- 2021 *Pectobacterium brasiliense* 1692 (Pb 1692) outer membrane vesicles (OMVs) in microbial interactions – SASM2021 (virtual meeting).
- 2011 A new cyanide utilizing yeast from South Africa – SASM2011, Cape Town, November
- 2013 Characterization of C. albicans deletion mutants of genes expressed during PGE<sub>2</sub> production – South African Society for Microbiologists 2013, Limpopo, Bela-Bela, November
- 2014 Characterization of C. albicans ORF19.4612 deletion mutant, a gene upregulated in the presence of arachidonic acid – American Society for Microbiologists Conference on Candida and Candidiasis, New Orleans, USA, March
- 2015 Phenotypic switching in Candida albicans influences prostaglandin E2 production. 12th Yeast Lipid Conference, Ghent, Belgium, May.
- 2016 The pheromone exporter, HST6p, controls stress responses and morphogenesis in C. albicans. South African Society for Microbiologists 2016, Kwazulu-Natal, Durban University of Technology, January.
- 2016 Phenotypic switching in Candida albicans influences prostaglandin E2 production. South African Society for Microbiologists 2016, Kwazulu-Natal, Durban University of Technology, January.

## Current & Previously Managed Projects

- 2020-present The role of extracellular vesicles in pine-pathogen interaction;  
**Role:** Principal investigator; **Results:** Ongoing project.
- 2020-present CRISPR/CAS9 Genetic editing towards resistance to the banana bunchy top virus in banana;  
**Role:** Co-investigator; **Results:** Ongoing project.
- 2020-present The role of extracellular vesicles in virulence factor production of *Fusarium verticillioides*;  
**Role:** Principal investigator; **Results:** Ongoing project.
- 2021-present Assessing the impact of extracellular vesicles on maize and its microbial communities;  
**Role:** Principal investigator; **Results:** Ongoing project.
- 2017-2020 Mutagenesis breeding of sugarcane epigenetic mutants tolerant to abiotic stress;  
**Role:** Principal investigator; **Results:** ~126 epimutant lines were generated following treatment with 5-azacytidine and Imidacloprid under 40 °C and low water potential medium.
- 2017-2020 Production and characterization of stress resistant sugarcane mutants;  
**Role:** Principal investigator; **Results:** ~250 mutant sugarcane plants found to be drought and heat tolerant (trials date: Oct-2018 and Feb-2019). 30 plants subjected to protein activity assays.
- 2020-2020 The development of a preprint server for sugarcane research (Proposal);  
**Role:** Principal investigator; **Results:** The front-end part of the web-server has partially been completed, with about 11 web-pages designed using HTML, CSS and JavaScript (jQuery). The prototype project has been uploaded on GitHub.

## Mentoring & Supervision

### PhD students

- 2021-present Ms. Gosiamo Koolebogile, University of Pretoria (*main supervisor*)
- 2021-present Mr. Philani Dlamini, University of Pretoria (*main supervisor*)
- 2020-present Ms. Ratsoma Manchela, University of Pretoria (*main supervisor*)
- 2020-present Mr. Sicelo Masuku, University of Pretoria (*co-supervisor*)

### MSc Students

- 2020-present Ms. Sinethemba Nkosi, University of Pretoria (*main supervisor*), *wrapping-up lab work*
- 2021-present Ms. Peremore Chizné, University of Pretoria (*main supervisor*)
- 2020-present Ms. Precious Sedibane, University of Pretoria (*co-supervisor*), *wrapping-up lab work*
- 2020-present Ms. Boitshoko Rammuki, University of Pretoria (*co-supervisor*), *wrapping-up lab work*

### BSc Honours Students

- 2020 Ms. Peremore Chizné, University of Pretoria (*main supervisor*), *completed*
- 2015 Ms. Nthabiseng Mokoena, University of the Free State (*co-supervisor*), *completed*
- 2014 Mr. Bathimi Nazo, University of the Free State (*co-supervisor*), *completed*
- 2012 Ms. Keneuwe Selefo, University of the Free State (*co-supervisor*), *completed*

### Undergraduate & Internship Students

- 2021-present Ms. Simoné Bornman, University of Pretoria, *undergraduate (main-supervisor)*
- 2020 Ms. Reabetsoa Molia, University of Pretoria, *internship (main-supervisor), completed*

## Teaching

- 2021-present *Undergraduate teaching (3rd year level)*, Bacterial Genetics (MBY-355)
- 2021-present *Undergraduate teaching (3rd year level)*, Genetic Manipulation of Microbes (MBY-364)
- 2020-present *Honours teaching*, Project Proposal, Trends in Microbiology, and Joint Techniques course (honours level)

## Membership of Organizations & Committees

- 2021-present ASAPbio (Accelerating Science and Publication in biology) Board of Directors
- 2021-present Review Editor for *Frontiers in Plant Science* and *Frontiers in Microbiology*
- 2021-present Member, International Society for Extracellular Vesicles (ISEV)
- 2020-present Ethics division coordinator for the University of Pretoria
- 2019-present Management committee, Forestry and Agricultural Biotechnology Institute (FABI)
- 2019-present Member, Metabolomics South Africa
- 2017-present Reviewer (biosafety), GMO Advisory committee, National Department of Environments, Forestry and Fisheries (Ministerial appointment)
- 2019-2020 Future Africa, Tuks Young Leadership Programme fellow
- 2019-2021 Fellow, ASAPbio (Accelerating Science and Publication in Biology)
- 2018-2019 Institute ambassador ASAPbio (Accelerating Science and Publication in Biology)
- 2015-2015 Member, American Society for Microbiology
- 2011-2015 Member, South African Society for Microbiology

**Referees**

Emma Steenkamp (Prof.)  
University of Pretoria  
Department of Biochemistry, Genetics and Microbiology  
Director of DSI-NRF Center of Excellence in Tree Health Biotechnology  
Tel/Fax: +27-12-420-3262  
E: [emma.steenkamp@up.ac.za](mailto:emma.steenkamp@up.ac.za)

Pohl-Albertyn C. H. (Prof.)  
University of the Free-State  
Department of Microbial, Biochemical and Food Biotechnology  
Tel: (+2751) 401 9197/2772  
Cell: 082454007  
E: [PohlCH@ufs.ac.za](mailto:PohlCH@ufs.ac.za)

Albertyn J. (Prof.)  
University of the Free-State  
Department of Microbial, Biochemical and Food Biotechnology  
DSI-NRF SARChI Chair Pathogenic Yeast Research  
Tel: (+2751) 401 22 23  
E: [Albertynj@ufs.ac.za](mailto:Albertynj@ufs.ac.za)