



# **STUDENT PROSPECTUS**

**2019**

## CONTENTS

<b>Maize Trust</b>	<b>3</b>
<b>SA Cultivar and Technology Agency</b>	<b>5</b>
<b>FoodBev Seta</b>	<b>8</b>
<b>SA National Seed Organisation (SANSOR)</b>	<b>9</b>
<b>Sasol Agriculture Trust</b>	<b>10</b>
<b>Sorghum Trust</b>	<b>11</b>
<b>Winter Cereal Trust (WCT)</b>	<b>12</b>
<b>ICRISAT &amp; BMGF</b>	<b>13</b>
<b>National Research Foundation (NRF), Grain SA</b>	<b>13</b>
<b>National Research Foundation (NRF)</b>	<b>14</b>
<b>National Research Foundation (NRF), Agricultural Research Council (ARC)</b>	<b>15</b>
<b>National Research Foundation (NRF) – RTF</b>	<b>15</b>
<b>National Research Foundation (NRF), Winter Cereal Trust (WCT)</b>	<b>16</b>
<b>National Research Foundation (NRF) via SARChI</b>	<b>16</b>
<b>YPP Western Cape Department of Agriculture</b>	<b>17</b>
<b>University of the Free State Research Funding</b>	<b>17</b>
<b>Privately Funded Students</b>	<b>19</b>

*Student names listed below are grouped by the institutions bursar and are listed in alphabetical order by surname.*

## THE MAIZE TRUST

### DOCTOR OF PHILOSOPHY STUDENTS (PhD)

#### Mr. Gerhard Engelbrecht



**Research Title:** Nematode pests of soybean associated microbial communities with potential as biocontrol agents.

Research focus on soybean (in the Highveld Region, Mpumalanga) to determine the presence, abundance, diversity and spread of particularly *M. enterolobii* and *P. brachyurus*, but also that of other nematode pests. I am also looking to increase research on endemic microorganisms because I believe that it can provide a biocontrol alternative and can contribute towards food security.

**Study leader:** Prof. Hendrika Fourie (NWU)

**Email:** gerhardengelbrecht38@gmail.com

**Contact number:** 072 119 3544

#### Mr. Thabo Nkuna



**Research Title:** Evaluating potential constraints hindering Maize production under Agroforestry environment in South Africa.

Selected pathogen resistance in South African maize cultivars and the related mechanisms of resistance and responsible plant genes.

**Study leader:** Dr Zakheleni Dube (UP)

**Email:** Nkunathabo@gmail.com

**Contact number:** 078 392 9976

### MASTER OF SCIENCE STUDENTS (MSc)

#### Ms. Ingrid Marais



**Research Title:** External RNA interference against the fungus *Cercospora zeina* that causes grey leaf spot of maize.


The research is focused on the fungus called *Cercospora zeina* that causes grey leaf spot (GLS) of maize. This is an economically important disease for both commercial and small-holder farmers in South Africa. The research is aimed to optimize and test a novel approach (RNA-based fungicide) for control of GLS in maize. Application of a form of RNA called double stranded RNA has been shown to reduce disease of some fungi in barley, tomato and other plants.

	<p>There are three main objectives of the research:</p> <ul style="list-style-type: none"> <li>i) To optimize the uptake of dsRNA and silencing of a test gene, GFP in cultures of <i>C. zeina</i>.</li> <li>ii) To test whether uptake of dsRNA results in specific silencing of target genes.</li> <li>iii) To test if dsRNA treatment of maize leaves results in decreased GLS disease.</li> </ul> <p><b>Study leader:</b> Prof. Dave Berger (UP)</p> <p><b>Email:</b> maraisinge@gmail.com  <b>Contact number:</b> 083 628 5402</p>
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**Ms. Ayabulela Mkosana**

	<p><b>Research Title:</b> Assessing socio-economic impact of Fall Armyworm on smallholder maize farmers in Ehlanzeni District, South Africa.</p> <p>This study uses quantitative research method with the aim to discover the socio-economic impact of FAW on maize, mainly focusing on smallholder farmers. Experiments, observations and surveys using questionnaires are used. The results obtained will be tested and theories verified. The evidence from participants will be collected and also the observations the researcher has recorded.</p> <p><b>Study leader:</b> Mr. David Ekepu (UFS)</p> <p><b>Email:</b> ayamkosana@gmail.com  <b>Contact number:</b> 072 879 6202</p>
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**Ms. Adelaide Simelane**

	<p><b>Research Title:</b> Sequence characterization and population diversity of <i>Amaranthus palmeri</i> in South Africa.</p> <p>A palmeri is a new invasive weed from the US found in South Africa. It is important to characterise the population diversity and specifically the herbicide resistance profile of this weed in SA. It is known from the USA to be resistant to several herbicide mode of actions. To effectively manage and eradicate this weed we need to understand its biology and diversity.</p> <p><b>Study leader:</b> Dr. Juan Vorster (UP)</p> <p><b>Email:</b> simelaneadelaide@gmail.com  <b>Contact number:</b> 072 465 3141</p>
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## SA CULTIVAR AND TECHNOLOGY AGENCY (SACTA)

### DOCTOR OF PHILOSOPHY STUDENTS (PhD)

#### Mr. Sbongeleni Duma



**Research Title:** Pre-breeding of wheat for drought and low soil fertility stress tolerance

The frequency and intensity of drought stress has increased over the years due to climate change. Sub-Saharan Africa has a widespread distribution of poor degrade soils of low N fertility status. A combination of these factors causes huge losses in yield and quality of wheat. Therefore, there is an urgent need to develop wheat cultivars that can tolerate a combination of drought and low N stresses. Currently breeding programs have focused on developing only drought tolerant cultivars while neglecting improvement in low nitrogen tolerance.

**Study leader:** Prof. Hussein Shimelis (UKZN)  
Prof. Toi Tsilo

**Email:** Chillexor@gmail.com

**Contact number:** 063 356 9677

### MASTER OF SCIENCE STUDENTS (MSc)

#### Mr. Raymond Lesley Collett



**Research Title:** A Comparative study of development and reproduction of *Meloidogyne enterolobii* and other Thermophilic South African Meloidogyne.

I am currently elucidating the life cycle of the highly pathogenic root-knot nematode species *Meloidogyne enterolobii*. My interests also include assessing the host status of grain and leguminous crops to this species and identification of nematodes (morphologically and molecularly) for research and diagnostic purposes. I intend to do a PhD that will mainly focus on conservation agriculture and the use of nematodes as bioindicators of soil health. Management of nematode pests will also form an important part of the study.

**Study leader:** Prof. Hendrika Fourie (NWU)

**Email:** pi.collett.rc@gmail.com

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### Mr. Mholi Khumalo



**Research Title:** Effect of planting density and nitrogen application on grain quality and yield of three barley cultivars planted in the Western Cape, South Africa.

Different varieties of malting barley react differently to an increase in planting density and nitrogen requirements and timing thereof, viz. single top dressing or split applications and A great number of recently introduced new malting barley varieties provides reason for a systematic research on their requirements as to the optimal planting density and N application in relation to grain yield and resultant quality. The aim of this study was to examine different N rates and planting densities across different varieties in order to establish the best management practices available to maximise yield and grain quality without compromising end market objectives.

**Study leader:** Dr Morris Fanadzo (CPUT)

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### Ms. Chanel Pretorius



**Research Title:** Metabolomic analysis and metabolite profiling development for oat (*Avena sativa*) cultivar identification and evaluation.

The first step of any crop introduction - or breeding program requires cultivar or variety identification and characterization, therefore rapid identification methods would greatly improve registration, breeding, seed, trade and inspection processes. Metabolomics, the youngest of the -omics trilogy, has proven to be indispensable in interrogating cellular biochemistry and phenotyping. In this study, metabolomics is applied to unravel differential metabolic profiles of various oat (*Avena sativa*) cultivars (Magnifico, Dunnart, Palinup and Overberg) using an untargeted, high-resolution liquid chromatography – mass spectrometry analytical platform. From the resulting profiles signatory biomarkers will be analysed for cultivar identification.

**Study leader:** Prof. Ian Dubery (UJ)

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**Contact number:** 078 374 9955

### Ms. Nobuhle Sithembile Ndlovu



**Research Title:** Identification and characterization of viruses infecting soybean (*Glycine max.* L) in South Africa.

Viral diseases are among the main limiting factors to soybean production. Particularly seed transmitted viruses, they have great potential to reduce yields because they interfere with the plant growth from the beginning. There are also multiple viral infections which pose a greatest risk of reduced yield and grain quality. Viruses like Soybean Mosaic Virus and Bean Pod Mottle Virus act synergistically, inducing severe symptoms and may cause terminal death. This study aims to identify and characterize viruses infecting different soybean cultivars grown in South Africa. In addition, determine the incidence of seed transmitted viruses.

**Study leader:** Prof. Augustine Gubba (UKZN)

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**Contact number:** 079 154 8869

### Honours Student (Hons Dissertation)

#### Mr. Zuzumuzi Sizwe Buthelezi



**Research Title:** Effect of seed retention on soybean (*Glycine max* L.) in South Africa.

This research investigates the role of a practice by some smallholder farmers which is retaining seed from one season to plant in the following season. Problems have been highlighted with other seeds that this practice result in a loss in vigour and viability. However, there is no evidence of output when it comes to soybean seed in South Africa. This research aims to fill-in the knowledge gap by informing how this practice affects germinability, vigour and viability of the retained seed.

**Study leader:** Mr. Jerry C. Dlamini (UFS)

**Email:** zuzumuzibuthelezi@gmail.com

**Contact number:** 073 133 6204

## BACHELOR OF SCIENCE STUDENT (BSc)

### Ms. Alana Crotz



This is an extended course as I am working full-time at CenGen supporting all the wheat research activities and the services rendered to the SA commercial wheat breeding programs.

**Study leader:** Dr Rene Prins (UNISA)

**Email:** alana@cengen.co.za

**Contact number:** 083 463 5948

## FOODBEV SETA

## DOCTOR OF PHILOSOPHY STUDENTS (PhD)

### Ms. Motlagomang Khantsi



**Research Title:** Effect of intercropping inoculated *Vigna unguiculata* and *Zea mays* yield components - screen house pot experiment.

Agricultural yields in sub Saharan Africa remain lower than other developing regions and food safety remains a significant challenge. Knowledge of nutritional leguminous crops is still limited. Effective technologies and innovations needed to promote and enhance production are very slow for farmers and in turn resort to expensive and harmful chemicals. There is thus a need for alternative environmentally friendly and cost-effective means such as the use of biological innovations to improve sustainable agricultural and improving consumption of nutritious food. Identifying novel growth promoting genes for exploring other species genetically to promote their potential of contributing to agricultural crop development mostly in arid environments is important. The quest for suitable environment-friendly options to supplement the chemical fertilizers remains a challenge especially to underprivileged farmers. However, in the light of functional redundancy in most soil microbiome, research states that finding specific keystone markers, the rhizobacteria is not so much a labour-intensive task. Progress in development of molecular methods that facilitate identification of rhizobacteria w.r.t. key functions enable the development of improved criteria by which molecular information can be tuned to yield molecular markers of soil microbiome.

**Study leader:** Prof. Olubukola O Babalola (NWU)

**Email:** mamsikhantsi@gmail.com

**Contact number:** 073 893 1323



### Ms. Thembekile Kheswa



**Research Title:** Alleviation of food and nutrition insecurity in UMkhanyakude District by promoting the utilization of nutrient rich cowpea.

Efforts in developing countries to alleviate food insecurity have overlooked nutrition considerations, including South Africa. Cowpea is one of those traditional legumes that have a huge food and nutrition security potential. Cowpea (*Vigna unguiculata*) is an underutilized, climate smart indigenous legume in South Africa with a potential to curb malnutrition and food insecurity. However, the youth's negative perceptions towards indigenous food decline its utilization. The study interfaced cowpea by developing a biscuit from two local landraces by producing a blend of cowpea and wheat biscuit. The study aimed to determine the quality characteristics of the biscuit and sensory acceptability by rural youth.

**Study leader:** Prof. Unathi Kolanisi (UKZN)  
Prof.M Siwela

**Email:** KheswaT@unizulu.ac.za

**Contact number:** 082 875 8831

## SA NATIONAL SEED ORGANISATION (SANSOR)

### MASTER OF SCIENCE STUDENT (MSc)

#### Ms. Ncebakazi Mathiso



**Research Title:** Investigation into tolerance of Quality Protein Maize germplasm to low soil pH.

Checking for tolerance of QPM genotypes (inbred lines and hybrids) to low soil pH, using the field and glasshouse methods to screen the genotypes as well as accessing tolerance mechanism of genotypes in the laboratory. The combining abilities of genotypes will be estimated for future uses in the breeding program.

**Study leader:** Prof. Charles Mutengwa (UFH)

**Email:** nceshmathiso@gmail.com

**Contact number:** 073 705 8160

## Honours Student (Hons Dissertation)

**Ms. Nozibusiso Maphumulo**



**Research Title:** Surveillance for vectors of Maize Lethal Necrosis Disease (MLND) in South Africa.

Maize Lethal Necrosis Disease (MLND) is a disease of maize that was recently introduced into East Africa (Kenya in 2011) from where it spread to several surrounding countries. It threatens maize production and can result in yield losses up to 100%. MLND is caused by the synergistic effects of Maize Chlorotic Mottle Virus (MCMV) and potyviruses such as Maize Dwarf Mosaic Virus (MDMV), Wheat Streak Mosaic Virus (WSMV) or Sugarcane Mosaic Virus (SCMV). It is transmitted by thrips and *Chrysomelidae* beetles. Fortunately, it is not yet present in SA. This study is aimed at surveying grain transport routes and identifying potential vectors that can introduce or transmit MLND in SA. The study will provide information on the incidence and distribution of vectors. The results of the study will benefit food security and maize industry by ensuring production of disease-free maize.

**Study leader:** Prof. Johnnie van den Berg (NWU)

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**Contact number:** 076 978 7467 / 074 699 5016

## SASOL AGRICULTURE TRUST

### DOCTOR OF PHILOSOPHY STUDENT (PhD)

**Ms. Marlese Meiring**



**Research Title:** *Sclerotinia sclerotiorum* disease potential and management responses in soybean and sunflower.

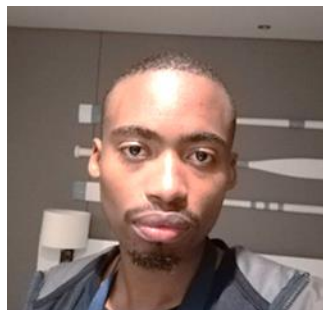
A major constraint in effective control of *Sclerotinia* is the absence of resistance. Cultivar selection is the foremost pre-season management decision in the reduction of *Sclerotinia* outbreaks among producers who are also dependent on fungicides and alternative management strategies, as intervention for in-season losses. Quantifying cultivar responses to pathogen and environmental stimuli will assist in the selection and breeding of cultivars with tolerance to high *Sclerotinia* disease potentials. The evaluation of differences in tolerance of soybean and sunflower cultivars to *Sclerotinia* under field conditions will assist in standardising *Sclerotinia* disease potential. The soybean cultivar evaluation results will also feed into a parallel

	<p>UFS project and have an impact beyond the direct scope. It will contribute to the accuracy of a regional <i>Sclerotinia</i> risk model by introducing a genetic coefficient. The need to determine genotype field responses is pertinent to ensure cultivars are stable across localities, inoculum potentials and management strategies. The identification and evaluation of new active ingredients and the timing of application would be beneficial for producers and contribute to the risk model. Four fungicides with different active ingredients which are not registered for managing <i>Sclerotinia</i> will be evaluated across multiple soybean cultivars. This will also assist with possible registration of potentially new fungicides. Other management strategies such as exposure of sclerotia to extreme temperatures and the digestive system of cattle will also be evaluated.</p> <p><b>Study leader:</b> Prof. Neal McLaren (UFS)</p> <p><b>Email:</b> mcbester6@gmail.com  <b>Contact number:</b> 072 954 3553</p>
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## THE SORGHUM TRUST

### MASTER OF SCIENCE STUDENT (MSc)

#### Mr. Thabiso Masisi



**Research Title:** Comparative virulence of stripe rust pathotype 6E22A+ and field isolate GWK2015\_56".

Rusts associated with small grains are economically important diseases in South Africa. The occurrence of wheat stripe rust, caused by *Puccinia striiformis* f. sp. tritici, on cultivars classified as stripe rust resistant and grown under irrigation in the Northern Cape Province necessitated this study. The objectives of the study are: (1) Determining whether stripe rust isolate GWK2015\_56, sampled from the infected leaf material send to the UFS, shows increased virulence on seedlings when compared with Pst race 6E22A+ on the standard stripe rust differential set or on any of the implicated cultivars, (2) Checking if there is a change in virulence for adult plant resistance in any of the implicated cultivars occurred using spray and point inoculation and (3) To study the possibility of temperature sensitivity of the resistance sources in any of the implicated cultivars using two post-inoculation temperature regimes.

**Study leader:** Mrs. Lisa A Rothmann (UFS)

**Email:** masisi.tv@gmail.com  
**Contact number:** 081 769 8081

## WINTER CEREAL TRUST (WCT)

### DOCTOR OF PHILOSOPHY STUDENTS (PhD)

#### Mr. Zandr  Germishuys



**Research Title:** X-ray micro-computed tomography evaluation of bubble structure to determine quality of dough and bread made from roasted wheat flour.

My field of study is cereal science, specifically the bubble structure of dough and bread by means of X-ray micro computed tomography. I am investigating the effect of roasting of wheat on the rheological properties of the subsequent white flour. I am also studying the effect of the roasted wheat flour on the bubble structure of dough during proofing as well as baking by means of X-ray micro computed tomography. The last part of my study involves studying the shelf life of bread loaves baked from roasted wheat flour by means of C-Cell and texture analysis.

**Study leader:** Prof. Marena Manley (US)

**Email:** 16542673@sun.ac.za

**Contact number:** 071 855 3929

#### Ms. Zamalotshwa Thungo



**Research Title:** Genetic analysis of bread wheat (*Triticum aestivum*) for terminal drought tolerance through phenotype, molecular and marker-based techniques.

Phenotypic evaluation: agronomic & physiological yield traits. Grain protein quality traits: total protein content, gliadin, glutenin and gluten to discriminate among genetic resources. Marker-based evaluation of genetic resources was performed using a mixture of yield and protein content-based SSR markers. Genetic resources were crossed, and parents and first filial generation progeny evaluated for combining ability using agronomic and physiological plant traits.

**Study leader:** Prof. Hussein Shimelis (UKZN)

**Email:** thungozama@yahoo.com

**Contact number:** 066 521 0869

## ICRISAT & BMGF

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### DOCTOR OF PHILOSOPHY STUDENT (PhD)

Mr. Muhammad Ahmad Yahaya



**Research Title:** Molecular diversity and population structure of African sorghum using DArT markers.

My research interest is on crop genetic improvement with an emphasis on variety development for disease resistance and stress tolerance using molecular techniques and conventional breeding approaches. My PhD research focuses on developing climate-resilient sorghum hybrids that are particularly tolerant to drought and suitable for production in the drought-prone areas of Africa and the world.

**Study leader:** Prof. Hussein Shimelis (UKZN)

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**Contact number:** 063 505 9987

## NATIONAL RESEARCH FOUNDATION (NRF) GRAIN SA

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### MASTER OF SCIENCE STUDENT (MSc)

Ms. Carlynn Jacobs



**Research Title:** In vitro evaluation of commercial fungicides against *Fusarium* and *Alternaria* species associated with wheat grain in South Africa.

I am a 1st year MSc student within the Department of Plant Pathology, Stellenbosch University and am currently doing research on *Fusarium* head blight (FHB) of wheat. This study undertakes to evaluate the efficacy of foliar fungicides, registered for the control of other fungal diseases, to reduce FHB and mycotoxin accumulation in wheat grain.

**Study leader:** Dr Lindy Rose (US)

**Email:** carlynn@sun.ac.za

**Contact number:** 021 808 4799

## NATIONAL RESEARCH FOUNDATION

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### DOCTOR OF PHILOSOPHY STUDENT (PhD)

#### Ms. Keneuoe Phakela



**Research Title:** Durum wheat gluten protein response to drought and heat stress as measured by size exclusion-high performance liquid chromatography.

Currently a PhD student in Plant Breeding with a keen interest in crop quality improvement. My research focuses on durum wheat glutenin proteins responses to drought and heat stress. My research involves the use of proteomics and protein-based approaches. I hope my research would contribute to resolving fluctuations in durum wheat quality.

**Study leader:** Prof. Maryke Labuschagne (UFS)

**Email:** keneuoephakela@gmail.com

**Contact number:** 078 469 8421

### MASTER OF SCIENCE STUDENT (MSc)

#### Ms. Avesha Shaikh



**Research Title:** Fumonisin deposition by *Fusarium verticillioides* depends on timing and progress of fungal infection.

Plant Pathology is the study of microbes that cause disease in plants, the mechanisms by which this occurs, the interactions between causal organism and the plant, and the methods of managing/controlling plant disease. My study focusses on a fungus commonly associated with maize known as *Fusarium verticillioides*. It also produces harmful toxins called fumonisins that have noxious effects on both humans and livestock, once ingested. My work aims to gain a better understanding of the infection cycle and toxin production, including masked fumonisins, of this fungus by identifying physico-chemical changes, during kernel maturation.

**Study leader:** Dr. Lindy Rose (US)

**Email:** ayesha@sun.ac.za

**Contact number:** 073 460 5544

**NATIONAL RESEARCH FOUNDATION (NRF)  
& AGRICULTURAL RESEARCH COUNCIL (ARC)**

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**DOCTOR OF PHILOSOPHY STUDENT (PhD)**

**Ms. Marylyn Christian**



**Research Title:** The effect of silicon fertilizers on agronomic traits and drought tolerance of wheat

My research is focused on improving the quality of crops using silicon fertilizers. Silicon is naturally found in the environment and is increasingly considered as essential in crop nutrition. Silicon has been shown to aid crops in overcoming abiotic stresses including drought. It has also been shown that silicon improves crop nutrition, yield, and quality. Breeding for silicon utilizing crops is the next step in improving both drought tolerance and improved quality.

**Study leaders:** Prof. Hussein Shimelis (UKZN)  
Prof. Mark Laing; Prof. Toi Tsilo

**Email:** marylynchristian@gmail.com

**Contact number:** 082 339 5116

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**NATIONAL RESEARCH FOUNDATION (NRF) - RTF**

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**MASTER OF SCIENCE STUDENT (MSc)**

**Ms. Christinah Lephuthing**



**Research Title:** Genetic analysis of Fe & Zn concentrations in grains and their relationship to yield-related traits in South African bread wheat (*Triticum aestivum L.*) genotypes.

People with cereal-based diets may suffer from dietary deficiency of important minerals such as Fe, Zn, vitamin A and iodine, termed as “hidden hunger” or “mineral malnutrition”. Because the world population is constantly increasing, yield improvement is an on-going endeavour in wheat breeding. We report on the levels of Fe and Zn concentrations and determine which genomic regions influence their genetic variation in South African bread wheat genotypes. The ultimate goal of this research is aimed at assisting the wheat industry by contributing towards the development of new high-yielding cultivars with improved nutritional quality.

**Study leader:** Dr. Vicki Tolmay (ARC – Small Grain)  
Prof. Toi Tsilo

**Email:** LephuthingM@arc.agric.za

**Contact number:** 081 096 0770

**NATIONAL RESEARCH FOUNDATION (NRF)  
& WINTER CEREAL TRUST (WCT)**

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**DOCTOR OF PHILOSOPHY STUDENT (PhD)**

**Mr. Lamula Siphamandla**



**Research Title:** Plant-parasitic nematodes associated with wheat crops in South Africa.

Data obtained from this study will assist in identifying problematic nematodes for wheat plants and how we can formulate their control measures.

**Study leader:** Prof. Oriel Thekiso (NWU)

**Email:** lamulasqn@gmail.com

**Contact number:** 078 421 8655

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**NATIONAL RESEARCH FOUNDATION via SARChI**

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**DOCTOR OF PHILOSOPHY STUDENT (PhD)**

**Ms. Schae-Lee Olckers**



**Research Title:** Structure-function properties of zein proteins of QPM grown under low nitrogen conditions.

The aim of my PhD project will be to determine the influence of abiotic stress conditions on LMW glutenin subunits and how this is reflected in bread-baking quality. The effect of stress will be measured using RP-, SE-HPLC and proteomics. The study of the up- and down-regulation of protein spots using 2D SDS-PAGE will be done and the spots excised for LC-MS/MS followed by protein library identification. The outcome is how this knowledge can be implemented to improve drought stress tolerance in breeding programs to ensure stable baking quality.

**Study leader:** Dr Angie van Biljon (UFS)

**Email:** olckerss@gmail.com

**Contact number:** 073 276 4119



## YPP WESTERN CAPE DEPARTMENT OF AGRICULTURE

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### MASTER OF SCIENCE STUDENT (MSc)

#### Mr. Fagrie Arnold



**Research Title:** Population analysis of *Fusarium pseudograminearum* associated with Fusarium crown rot and Fusarium head blight of wheat in the Western Cape.

My current research focuses on the management of fusarium crown rot (FCR) of wheat that is predominantly caused by *Fusarium pseudograminearum* in the Western Cape. The disease is exacerbated by dry climate conditions which makes this an emerging disease in the drought stricken Western Cape. Furthermore, I have a great interest in plant-pathogen interactions and the underlying mechanisms of plant resistance. With my background in molecular biology and plant pathology I hope to develop and apply modern crop protection techniques which could enhance crop production.

**Study leader:** Dr. Lindy Rose (US)  
Dr. Gert Van Coller

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**Contact number:** 083 427 3650

## UNIVERSITY OF THE FREE STATE RESEARCH FUNDING

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### DOCTOR OF PHILOSOPHY STUDENT (PhD)

#### Mr. Isaac Kodzo Amegbor



**Research Title:** Assessment of yield reduction in quality protein maize.

I aspire to touch farmers by developing resilient crop varieties that address the factors affecting crop production and productivity. My passion led me to study Agriculture and currently a PhD fellow at the University of the Free State. My research seeks to create sustainable maize production in Africa by identifying high yielding QPM hybrids with enhanced amino acids that are tolerant to biotic and abiotic stress as well as help combat hunger and malnutrition.

**Study leader:** Prof. Maryke Labuschagne (UFS)

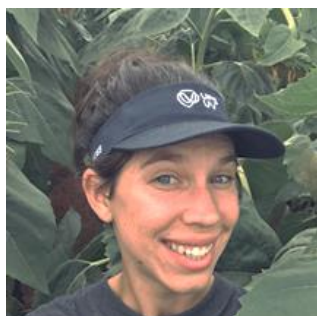
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## PRIVATELY FUNDED STUDENTS

### DOCTOR OF PHILOSOPHY STUDENTS (PhD)

#### Ms. Lisa A. Rothmann



**Research Title:** A quantitative summary and spatial hierarchy characterisation of white mold prevalence in South Africa from a decade of observations.

Lisa Rothmann is finalising her doctorate in Plant Pathology at the University of the Free State. Her co-supervisor is Professor Emerson Del Ponte from the Federal University of Viçosa, Brazil. Lisa enjoys focusing on applied and computational epidemiological research. Her studies involve field trials, disease monitoring and measuring, as well as data science. She has the hope of generating regional risk models for *Sclerotinia* disease onset in South Africa. Lisa is an advocate of open and reproducible research and a junior leader at Open Plant Pathology.

**Study leader:** Prof. Neal McLaren (UFS)

**Email:** CoetzeeLA@ufs.ac.za

**Contact number:** 079 270 9691

#### Ms. Boluwatife OlaOlorun



**Research Title:** Optimising the dosage of ethyl methane sulphonate mutagenesis in selected wheat genotypes.

Boluwatife has a keen interest in creating genetic variability in crops for further improvement and impacting knowledge to the younger generation on solving one of Africa's major future problems — Food Insecurity. Her research areas of interest are plant breeding, crop production and mutagenesis on crops like cowpea and wheat. Her current research is based on developing wheat genotypes with drought tolerance and improved biomass allocation through chemical mutagenesis.

**Study leader:** Prof. Hussein Shimelis (UKZN)

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**Contact number:** 063 825 9030

### Mr. Kwame Shamuyarira



**Research Title:** Correlation and path coefficient analyses of yield and yield components in drought tolerant bread wheat populations

I am focusing on improving carbon sequestration capacity and drought tolerance in wheat under dry land farming systems. The aim of the research is to increase the root biomass in wheat genotypes to ensure that a high proportion of the plant biomass is retained in the soil profile and converted to soil carbon. The higher root biomass will also translate to efficient water uptake. Identification of genotypes with high carbon sequestration capacity will contribute to wheat production systems becoming more sustainable in a world already under threat from the detrimental effects of climate change.

**Study leader:** Prof. Hussein Shimelis (UKZN)

**Email:** kwameswilson@yahoo.com

**Contact number:** 078 242 9470

### MASTER OF SCIENCE STUDENT (MSc)

### Mr. Athenkosi Makebe



**Research Title:** Genetic interrelationship of elite sorghum (*Sorghum bicolor* (L.) Moench) genotypes selected for *Striga asiatica* (L) kunzite resistance and compatibility to a biocontrol agent (*Fusarium oxysporum Strigae*) using agronomic traits.

My research interests focus on plant protection, using biological control and introgression of host resistance to economically important disease, weeds and tolerance to environmental stresses. This extended to nutritional improvement of field crops.

**Study leader:** Prof. Hussein Shimelis (UKZN)  
Prof. Mark Laing

**Email:** athenkosimakebe@gmail.com

**Contact number:** 083 567 9430

# THANKS TO OUR SPONSORS

## INDUSTRY MEET & GREET



THE MAIZE TRUST



THE SORGHUM TRUST

**SASOL  
AGRICULTURE  
TRUST**

## NEW VOICES SYMPOSIUM



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*Compiled by: Annelien Collins*