Alumni Newsletter

Dear Alumni and Friends

Let's turn back time …..

How many computers do you think were in the Computer Science and Informatics Department in the '80s?

There were computers in the computer lab only. Lecturers did not have computers in their offices but had to go to the lab if they wanted to do computer work. The HODs, Prof Theuns Smith and Prof Hans Messerschmidt, fought for computers for the Department. In 1988, Prof Hans Messerschmidt's plea for computers for the Department was finally granted, and all the lecturers and the secretary received their first computers.

As time and years go by, we forgot where it all started. You'll think times are tough now, but remember where it all started!

As you will notice in this issue, technology developed to the extent that we, as humans can interact with a computer, not to mention the many ways in which the use of an eye tracker can help us today.

We really would like to hear what you've been busy with!

"Computers in the future may weigh no more than one-and-a-half tonnes."
Popular Mechanics, 1949

In this Issue

Prof Lizette de Wet, pioneer in the field of Human Computer Interaction

| **STORY** LEONIE BOLLEURS |

| **PHOTO** STEPHEN COLLETT |

Prof Lizette de Wet is of the opinion that there is no gender distinction between what women and men could achieve in the field of Computer Science and Informatics.

"I consider obtaining my PhD while balancing my work, my marriage, and young baby girls (who did not sleep through before reaching age four!) as one of my biggest achievements," says Prof Lizette de Wet, Associate Professor in the Department of Computer Science and Informatics at the University of the Free State (UFS).

Many firsts

Her achievements in the field include much more than the PhD referred to. On 11 February, International Day of Women and Girls in Science, the UFS celebrates her for pioneering the human-computer interaction (HCI) research environment, specifically the evaluation of usability and user experience in diverse application areas, where she has experienced and established many firsts.

Prof De Wet was one of the first students to complete a master's degree in this discipline at UNISA (1994). She says the external examiner for her master's was from the University of York in the UK, as expertise in South Africa was still lacking at the time.

In the Department of Computer Science and Informatics at the UFS, she established the HCI research area. This involved undertaking research projects in the discipline and developing curricula for a second-year module, an honours module, and a master's module.

"The second-year module was also one of two modules on campus to first use iPads in class to assist in a blended learning approach," she says.

Taking the human being into consideration is just as important (if not more) as the programming code that needs to be written. – Prof Lizette de Wet

A woman's contribution

Prof De Wet believes that in the research field of HCI, the focus is on the user and his/her overall user experience (including emotions, feelings, and competence) when using computers. "Taking the human being into consideration is just as important (if not more) as the programming code that needs to be written."

Whether the human being writing the code is male or female, does not matter. Prof De Wet believes that there is no gender distinction between what women and men could achieve in the field of Computer Science and Informatics.

"Although the students are still predominantly male, in the past few years more and more female students have enrolled for our postgraduate studies and completed it successfully, some of them with exceptional marks. In South Africa, many women are making their mark in this discipline by being heads of departments at universities or in the private sector, by chairing national and international conferences, and by publishing ground-breaking research," she adds.

Success with virtual reality

Over the past few years, Prof De Wet has concentrated on using brain-computer interfaces (BCIs) and virtual reality in her research. By the end of 2020, she had successfully supervised 11 master's students and four PhD students, with one of the master's students delivering ground-breaking research using virtual reality in the training of nursing students.

She elaborates: "The prototype involved virtually examining and evaluating a patient (with a foreign object lodged in a lung) in a virtual ward while wearing an Oculus Rift headset. The evaluation results were extremely positive and will be continued as a PhD study to investigate how to attempt to relieve motion sickness in an immersive virtual clinical simulation."

Starting as someone who never had the opportunity to lay her eyes on a computer during her school years, Prof De Wet believes that in South Africa – being a Third World country – there are numerous opportunities to make computers accessible to rural communities, and even to the large senior population who did not grow up with technology and might fear it.

With her passion for the profession, she not only delivers pioneering research but also trains professionals in computer science who will contribute to a better tomorrow.

Courtesy of me Leonie Bolleurs

Eye tracker in UFS sensory laboratory provides world-class service to the food industry

Prof Pieter Blignaut

Eye tracker in UFS sensory laboratory provides world-class service to the food industry.

The Sensory Laboratory is part of the Department of Sustainable Food Systems and Development. The laboratory performs sensory analysis, a scientific discipline used to evoke human reactions regarding the five senses of sight, smell, touch, taste, and hearing. These reactions can be captured from the first bite to complete mastication and are then statistically analysed and interpreted by a sensory analyst.

Prof Pieter Blignaut, an affiliated researcher at the Department of Computer Science and Informatics, assists the Sensory Laboratory to establish eye tracking as part of its services. The laboratory has recently acquired Tobii eye trackers, which can, among other things, measure computer interaction in consumer environments. The belief is that this addition is placing the UFS sensory laboratory at a completely different level than their competitors when it comes to profiling and comparing food products against each other.

In an eye-tracking study with a sample of consumers, we record the eye activity with an eye-tracker and a webcam with a built-in microphone. The study is to capture participants' facial expressions and think-aloud to stimuli that are presented as, for example, advertisements on websites, television commercials, magazines and newspapers, and shelf displays.

The eye tracker will indicate where a person looked and what he overlooked in terms of marketing food products. It will establish whether the person saw a specific advertisement, how much time he spent reading it, whether he saw the product name and if he read the fine print in the advert.

The tracker then also provides access to raw data with various export and data filtering options. The resulting data is statistically analysed and graphically rendered to provide evidence of specific visual patterns.
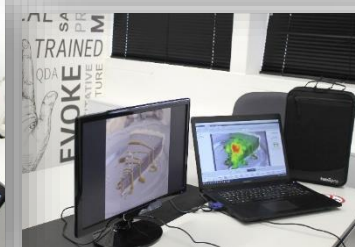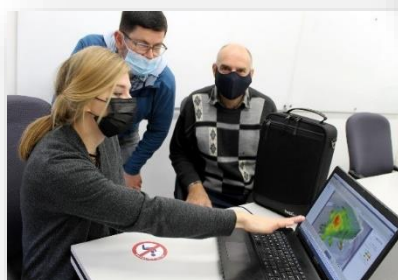
One can learn a great deal about the effectiveness of an advertisement in a given medium. The eye tracker thus, not only places the UFS sensory laboratory in a unique position from its competitors, but it also adds value to the services offered by the laboratory.

Photos courtesy of Prof Pieter Blignaut

Celebrating Departmental highlights
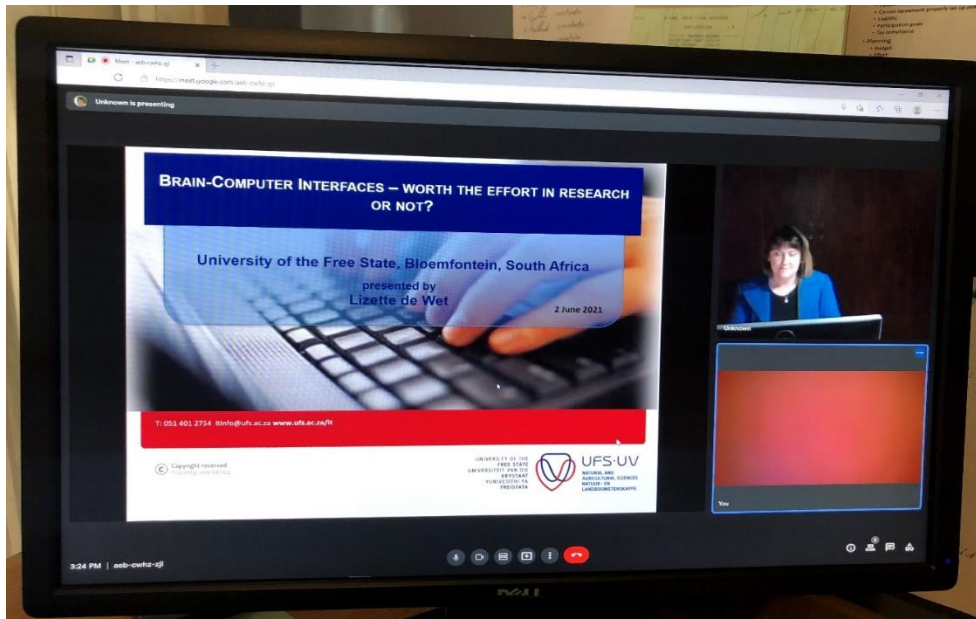
Prof Lizette de Wet from the Department of Computer Science & Informatics was invited as a guest speaker at the quarterly meeting of the South African Protea chapter of SIGCHI, the Special Interest Group for Computer-Human Interaction, of the Association for Computing Machinery (ACM). SIGCHI is the premier international society for professionals, academics and students who are interested in human-technology and human-computer interaction (HCI).

The virtual presentation took place on 2 June 2021 and the title was: Brain-computer Interfaces – worth the effort in research or not?

The 50th Annual Conference of the Southern African Computer

Lecturers' Association took place as a virtual conference on 15 and 16 July 2021. This year, two papers authored by colleagues from the Department of Computer Science and Informatics were selected for presentation at the conference.

Mr Ben Mase & Prof Liezel Nel

Mr Ben Mase (QwaQwa campus) presented a paper titled "*Common code writing errors made by novice programmers: Implications for the Teaching of Introductory Programming*", which was co-authored by Prof Liezel Nel (Bloemfontein
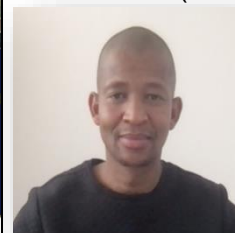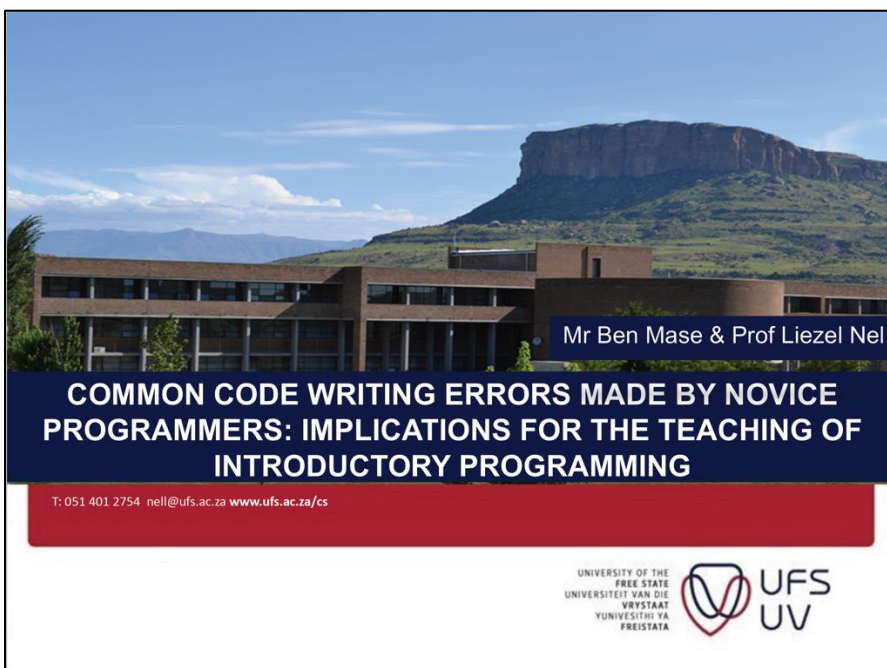
Dr Pakiso Khomokhoana (Bloemfontein campus) presented a paper titled "*Mapping the problem-solving strategies of novice programmers to Polya's framework: SWOT analysis as a bottleneck identification tool*", which was also co-authored by Prof Liezel Nel.

The paper co-authored by Dr Pakiso Khomokhoana and Prof Liezel Nel received the best paper award. Both papers have also been selected for publication in a Springer book as part of the Communications in Computer and Information Science series on ICT Education.
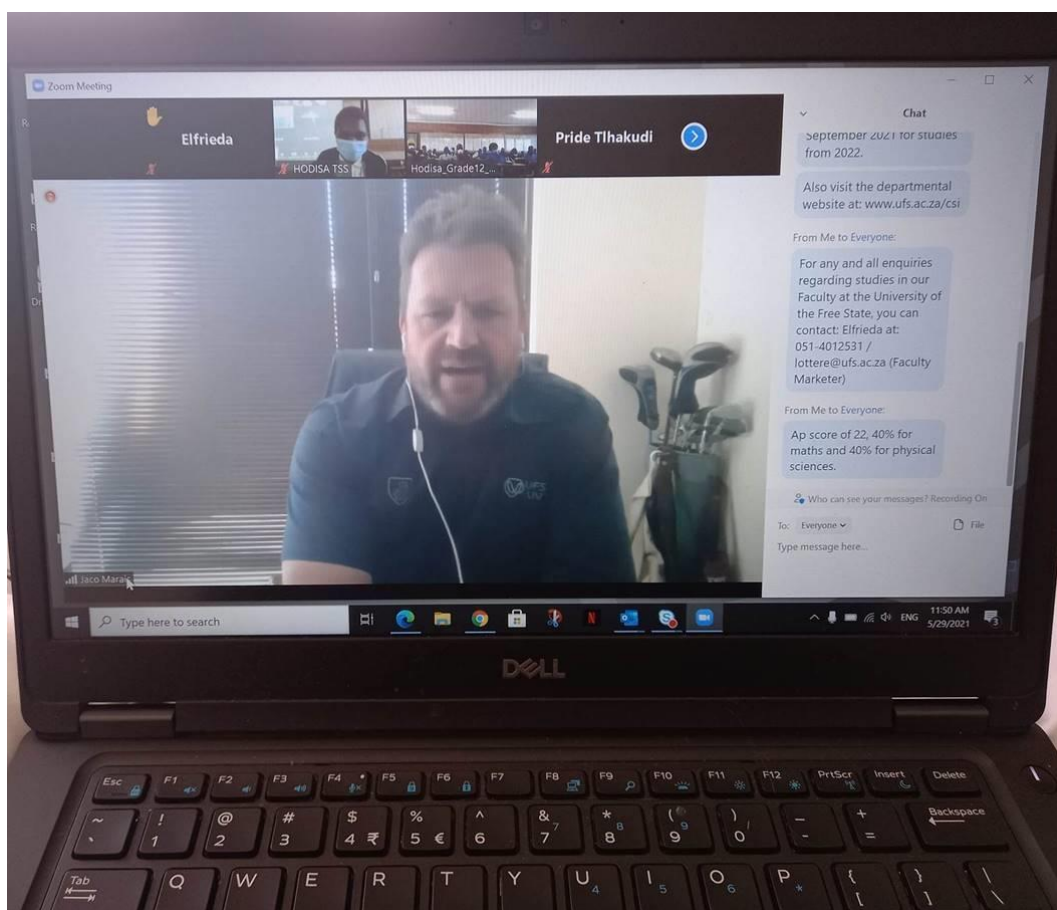
Mr Jaco Marais (lecturer and academic programme director in the Department of Computer Science and Informatics) and Mrs Elfrieda van den Berg (Faculty Marketing Manager) attended the **virtual career exhibition for Hodisa Technical Secondary School in Rocklands**, on Saturday, 29 May 2021.

The UFS LIS 2020 Best Assignment Project

Compiled by the Teaching and Learning Division of the Library

The Best Assignment project, headed up by the UFS Library and Information Services (LIS), is a collaborative flagship project between the UFS LIS and the faculties of the UFS. The purpose of the project is to encourage research skills at an undergraduate level, and to ensure that these skills are celebrated. In the year of its launch (2019), the project received 2 assignments with this increasing to 13 in 2020 from two faculties, including the Natural and Agricultural Sciences Faculty. There were 12 individual assignments and 1 group assignment.

Sponsors for the Best Assignment Project include SABINET, Protea Books, Van Schaik Book Stores, LexisNexis, EBSCO, and Exclusive books.

Three students from the Department of Computer Science and Informatics are among the winners in the group assignment category for their Software Engineering project. The module was presented by Mr Rouxan Fouché.

The Group Assignment titled: Software engineering project

Description: The project outlines the deliverables for the Requirements, Analysis and Design workflows of the Unified Process for the UFS COVID-19 Screening System. The UFS COVID-19 Screening System serves to automate the process of screening campus staff, students and visitors for COVID-19 symptoms before they access the campus.

Winners: Shayne Hassett, Tshegofasto Mochaki, and Reba Phuthi

TECHNOLOGY WON'T REPLACE TEACHERS.....
BUT TEACHERS WHO
USE TECHNOLOGY
WILL PROBABLY
REPLACE TEACHERS
WHO DO NOT.

My verblyf op die Bult

En toe, in Maart 1987, kom die nuwe Professor en Departementshoof uiteindelik aan by die Departement. Hy moes al in Januarie gekom het, maar sy aankoms is vertraag deur gebeurtenisse by IBM wat in die jaar Suid Afrika verlaat het.

Hy is 'n groentjie in die akademie. Twintig jaar ervaring in die rekenaarbedryf en 'n paar nagraadse klasse by Tuks en 2 jaar klasgee by Wits weeg nie op teen die ander departmenthoofde met jare ervaring en ellelange publikasielyste nie. Gelukkig is die dekaan, Prof. Hans Potgieter, 'n groot ondersteuner van Rekenaarwetenskap en die ander departementshoof by Wiskundige Wetenskappe, ondersteunende kollegas. Dan is daar natuurlik Prof. McDonald, my eerste Ph.D. student, Johan du Plessis, en Mev. Grant wat in die tyd nadat Prof Theuns weg is die teuels goed vasgehou het.

Rekenaarwetenskap was en is nog steeds 'n veld wat verbasend vinnig verander en jy moet vinnig op jou voete wees om relevant te bly. Die nuwe prof was 'n sterk voorstander van praktiese toepassings en het ge-ywer vir die beskikbaarstelling van die nuutste rekenaars vir die personeel en laboratoria waar die studente praktiese ondervinding van rekenaargebruik kon kry. Tot Mev Grant moes haar tikmasjien opgee en vir 'n rekenaar verruil. Die ander Wiskundige Wetenskappe is nie juis laboratorium vakke nie en dit was maar moeilik om die nodige fondse in die jaarlikse begroting te bekom. Veral die tradisonele laboratoriumvakke soos Chemie en die Biologiese wetenskappe het gestoei oor die koste van rekenaarlaboratoria.

Gelukkig het die studente aantalle jaarliks flink gestyg. Die kurrikulum is aangepas en veral die aantal Honneursstudente het drasties toegeneem. Die jaarlikse honneursprojekte was 'n groot bron van innovasie en selfstandige denke deur die studente. Die personeel is ook uitgebrei en veral die dames wat aangestel is, was vir baie jare die ruggraat van die doserende personeel.

My stay on the Bult

And then, in March 1987, the new Professor and Head of Department finally arrived at the Department. He should have come in January, but events at IBM that left South Africa during the year delayed his arrival.

He's a freshman in academia. Twenty years of experience in the computer industry, a few postgraduate classes at Tuks, and 2 years of teaching at Wits did not weigh up against the other department heads with years of experience and lengthy publication lists. Fortunately, the dean, Prof. Hans Potgieter, a big supporter of Computer Science and the other head of the Department at Mathematical Sciences, were supporting colleagues. Then, of course, there was Prof. McDonald, my first PhD student Johan du Plessis, and Mrs Grant, who held the reins well after Prof Theuns left.

Computer science is a field that is changing surprisingly fast, and one has to be on one's feet quickly to stay relevant. The new prof was a strong supporter of practical applications and endeavored to provide the latest computers for the staff and laboratories where students could gain practical experience of computer use. Even Mrs Grant had to give up her typewriter and exchange it for a computer. The other Mathematical Sciences were not exactly laboratory subjects, and it was not easy to obtain the necessary funds in the annual budget. Especially the traditional laboratory subjects such as Chemistry and the Biological Sciences argued over the cost of computer labs.

Fortunately, the number of students has risen sharply every year. The adjusted curriculum and especially the number of Honors students increased drastically. The annual honours projects were a great source of innovation and independent thinking by the students. The staff was also expanded, especially the appointed ladies who were the backbone of the teaching staff for many years.

Rekenaarwetenskap vir die studente van die ekonomiese wetenskappe het ook grotendeels bygedra tot die sukses van die Departement. Die ongelukkige lomp naam Bedryfsdataverwerking ten spyt. Die werklike ontploffing in die getalle en die druk op die laboratoria het veral drasties toegeneem met die instelling van Rekenaargeletterdheid as 'n verpligte steunvak vir die meeste studente. Mev Dednam en Juf. Dippenaar verdien melding vir hulle toegewydheid en volharding onder enorme druk.

'n Dosent se genoegdoening moet gesoek word in sy studente. Dit was vir my 'n groot vreugde om te hoor dat Prof. Eduan aangestel is as die nuwe departementshoof.

Op my ouderdom, ek is nou 81, is dit skynbaar normaal as jy selfs belangrike dinge heeltemal vergeet, of erger nog, persone en gebeurtenisse verwar. Jammer daaroor, maar dit is hoe dit is en jou tyd sal kom.

Groete aan almal.
Prof. Hans Messerschmidt

Computer science for the students of the economic sciences also largely contributed to the success of the Department. Despite the unfortunate clumsy name Business Data Processing. The real explosion in numbers and the pressure on the laboratories have increased drastically with the introduction of Computer Literacy as a compulsory support subject for most students. Mrs Dednam and Ms Dippenaar deserve mention for their dedication and perseverance under enormous pressure.

A lecturer's satisfaction must be found in his students. I was pleased to hear that Prof. Eduan is now the new head of the Department.

At my age, I'm 81, it is seemingly ordinary to forget essential things or confuse people and events completely. Sorry about that, but it's the way it is, and your time will come.

Greetings to all of you.
Prof. Hans Messerschmidt

Mrs Ilona Grant (Secretary)

1983 – 2004 - 21 year service

I had the privilege of visiting Mrs Grant and talk to her about her years as secretary of the Department. She started working at the Department of Computer Science and Informatics in October 1983 as secretary to Prof Theuns Smith. Laughing, she recalled that she went for an interview for this position, but no one informed her that she got the job. On 1 October, she received a call from Prof Theuns, saying, "Mrs Grant, you did not show up for work today?" She then mentioned that she had no knowledge about this, so it was a big surprise. At that time, she was working part-time at Provisioning. She then had to work at Provisioning in the mornings and at the Department of Computer Science in the afternoons for a full month because she had to give a month's notice at Provisioning. In effect, she started working full-time at the Department on 1 November 1983. There were no computers in the Department. She remembers that the lecturers did not have computers and had to go work in the computer lab, and that Prof Theuns was not very happy with the setup. She typed on a golf ball typing machine. There was also a telex machine, but she did not work much on it. Three months after she started, Prof Theuns left. She remembers Prof Theuns as a very quiet and withdrawn person.

For more than a year, there was no head of the Department, and Prof Theo McDonald then took over as acting head of the Department. She describes her times with Prof Theo as wonderful times. She was very nervous when Prof Messerschmidt was appointed. He was appointed from outside the University, so no one knew him. She remembers upon greeting her, he immediately peeked at her desk and asked: "Now, where is your computer?" She then mentioned to him that no one in the Department had a computer. Soon after, everyone, including her, received a computer.

It was a big adjustment to start typing on a computer. There was no tutorial, and Mrs Grant had to learn fast. She typed Prof Messerschmidt's dissertations and was also his editor. Prof Messerschmidt's nickname was "Airplane".

She enjoyed working with him. He was very strict, but her memory of her time working with Prof Messerschmidt is just pleasant, she says. She speaks with great praise of Johan du Plessis, Johan van Rooyen, Lizette de Wet, Liezel Nel, Tanya Stott, Andries Burger, Prof Theo Mc Donald, Prof Pieter Blignaut and many other honours students and lecturers she can remember.

She also remembers that Liezel had to help with departmental invitations on "that machine" because she was not so clued up with the computer.

Mrs Grant mentioned that everyone described her as their mother. I could see that there was a very close bond between them and that they are in contact even after all these years. She can tell you about each one, how many children they have and where they live.

She sent her regards to everyone that remembers her still!

Compiled by Suretha de Klerk

News from the UFS Alumni Office

The UFS Alumni Office recently announced the launch of the **Voices from the Free State** podcast series. François van Schalkwyk and Keenan Carelse (UFS alumni leading the United Kingdom Alumni Chapter – the hub of a developing UFS international programme) have put their voices together to create and co-host the new podcast series.

For further information regarding the podcast series, or to propose other alumni guests, please email alumnipodcast@ufs.ac.za.

Please **update your information** on the Alumni website. Go to:

https://www.ufs.ac.za/alumni

Click on the Keep in touch tab and then Update your details
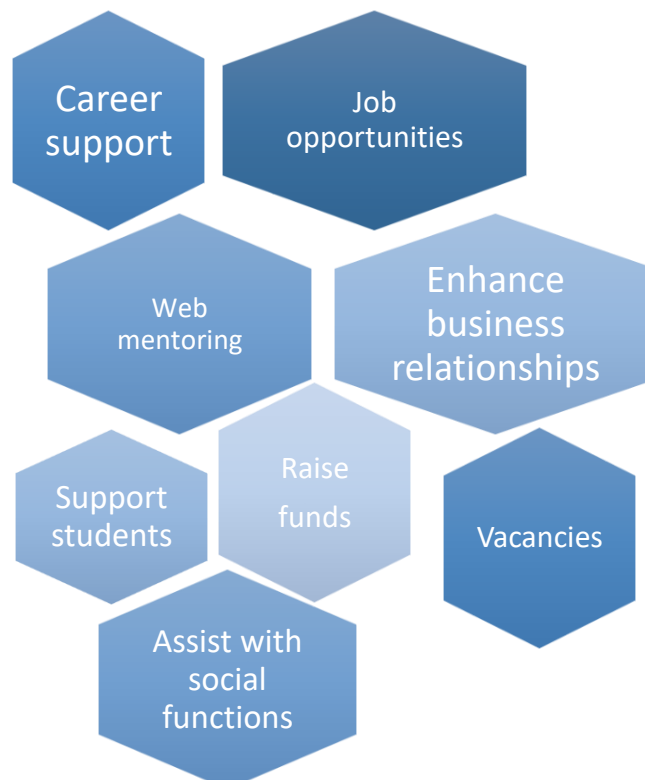
Our Mission

Our mission is:

To maintain a lifelong relationship with our Alumni

To facilitate the contributions of our Alumni to the advancement and success of the Department

How you can help

Let's stay connected

❖ Tell us your story – where you are and what you are doing

❖ Share your updated email address to receive the latest news

❖ Make suggestions of what to include in the Newsletter

You can send an email to Mrs Suretha de Klerk at deklerks@ufs.ac.za

www.ufs.ac.za/it