

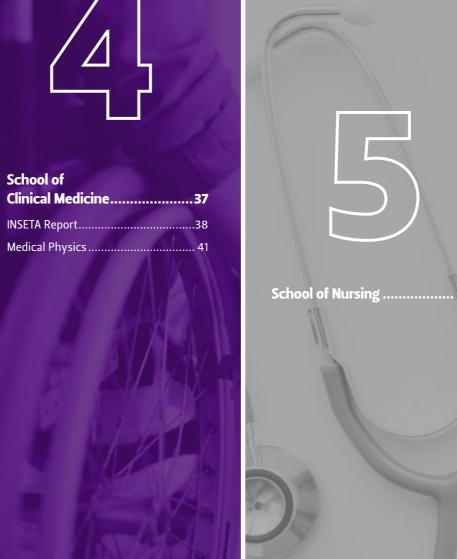
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Faculty of Health Sciences Rural Community Initiative6	// 98
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	Occupational Therap











he Kopanang le fodise – Unite to heal programme in the Kopanong local municipality, Xhariep district municipality in the Southern Free State is a community-centred collaborative initiative for sustainable, holistic healthcare and social development incorporated into the interprofessional curricula. All fourth-year students of the Faculty each spend at least a week in interprofessional groups in primary healthcare facilities in the Kopanong municipality of the Xhariep district on a community based education, interprofessional education (CBE-IPE) platform in Trompsburg and Springfontein. The initiative includes screening of grade 8-12 learners at the different schools, screening of diabetic patients, and home visits with community health workers.

Table 1 Statistics of 2019: Student placements

	Number of students in IPE
School of Clinical Medicine	89
School of Nursing	75
Occupational Therapy	37
Physiotherapy	37
Dietetics	11
Total IPE students on platform	258

This rural collaborative initiative presents students with multiple opportunities to experience transformative education, enabling them to function more effectively within the South African health system and be more responsive to the needs of the community. The initiative is taking on a more gemeinschaftlich approach as projects are becoming more community driven. Simultaneously, this initiative has also increased access to existing Free State Departments of Health (FSDoH) and Education (FSDoE) services, and added additional services (optometry).

Mobile health service

In collaboration with the Free State Department of Health (FSDoH) and three regional Agricultural unions, the Faculty of Health Sciences (FHS), University of the Free State (UFS) launched a mobile health service specifically for farming communities in the Kopanong Local Municipality, Xhariep District Municipality. The initiative forms part of the faculty's teaching and learning platform in Kopanong, where students are placed for weekly rotation at least 36 weeks of the year. It is also an extension of the scholarship of engagement as proposed in the Integrated Transformation Plan, and Town and Gown programme of the UFS.

The mobile healthcare service aims to:



Provide an innovative mobile health service for farming communities



Cultivate an inclusive teaching and learning platform for healthcare providers.



Equip healthcare providers with essential competencies for refuturing rural healthcare.



Engage in community based research.

The mobile clinic provides health service around the towns of Trompsburg, Springfontein and Philippolis on a weekly rotation, visiting each area once a month. The vehicle will spend the entire day at the specific site, five sites per week. A schedule of where the vehicle will be is provided so that farmers from the surrounding farms may transport community members from their farms to the site.

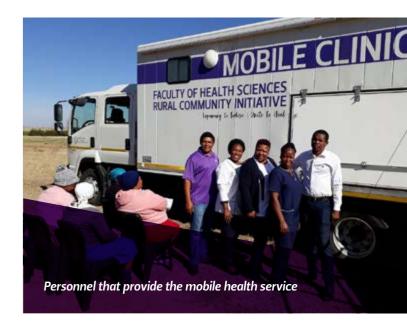
During the first six months of operation a total of 1329 patient visits were recorded (see table 2).

Table 2 Towns, farms and patient numbers

Area	Number of patient visits
Trompsburg	594
Springfontein	418
Philippolis	317

As this service is offered in collaboration with the FSDoH, personnel who man the clinic and supervise students are employed by both the FHS and FSDoH. Figure 2 shows from left to right Dr René Botha (Coordinator for Community Based Education

and Rural Health, UFS), Ms Elisa Lekula (Assistant Nurse, FSDoH), Mrs Patience Moloi (Professional Nurse, FSDoH), Ms Sinna Khabodiso (Community Healthcare Worke, - FSDoH) and Anele Mthiya (Mobile clinic operator, UFS) at Vlakfontein, 16km northwest from Trompsburg.



The distances covered by the mobile on a daily basis are vast, especially on the Philippolis route where the mobile clinic travels as far south as the banks of the Orange river.

In 2019 only students from the School of Clinical Medicine went out with the mobile. From 2020 students from the Schools of Health and Rehabilitation Services and Nursing will join the service.



Community Youth Leadership Project (CYLP)

During the past year, faculty personnel and students facilitated sport and related activities under the banner of the CYLP on Wednesday afternoons at different schools. Due to gross social and mental issues uncovered during the screening of learners, a more structured programme targeting specific learners evolved.

With the assistance of Mr Ivor Swartz (I.S. Connect), a motivational speaker who visited the two CYLP groups in Trompsburg and Springfontein, the structured programme concentrated on a specific theme - Values - for the year, and unpacked it through the following sub-themes throughout the year:



Relatability – creating hope



Interconnectedness – Responsibility for one another – belonging



Affirming goodness and worth



Consistency

Mr Swartz also assisted with the creation of videos specifically related to the sub-themes that were incorporated into the Wednesday afternoon activities.

After learners achieved the specific outcomes they were respectively awarded a back pack, a cap, and a T-shirt. Learners were also afforded the opportunity to visit the token shop were as part of the token economy they could redeem tokens collected on a weekly basis for clothes, nonperishable food, stationery, etc.





In 2019 the CYLP also became part of the Common Good network, a digital network to identify, showcase and connect community-driven social impact projects to one another – and to universities around the world for research, learning and teaching and student engagement.



The FHSRCI Common Good First satellite laboratory based in Trompsburg was launched on 16 October 2019. As part of this laboratory the faculty was equipped with a variety of digital video and audio equipment to be used by CYLP members to create videos. These video diaries of their personal development journeys will be uploaded on the online platform. Two staff members from Trompsburg attended a digital story workshop in Bloemfontein as part of this initiative.





Lifestyle groups

Patients with chronic diseases (diabetes mellitus) take ownership of their health through Lifestyle groups in Trompsburg and Springfontein that follow a patient-driven approach. Students assist community members with screenings and the planning and facilitation of Lifestyle group activities in both towns through health dialogues. Conscious reforming through community- centred collaboration secured vibrant engagement and dynamic growth. Level 1 and level 2 certificates of achievement were awarded in 2019.

In 2019 the focus of the Lifestyle groups in both towns was school environment transformation. This focus reflects an integrated communal approach to healthcare: collaboration between the school and its surrounding community.

Research

An overarching research proposal approved by the Health Sciences Research and Ethics Committee UFS (HSREC 201/2016) will enable research aligned with the objectives of the project under the banner of the project. Community participation is encouraged through the Participatory Action Learning Action Research (PALAR) approach followed. Currently two Masters projects are being conducted on the platform.

In line with the PALAR research approach, data was gathered from community members using the MMOGO method as part of article-purpose research. The purpose of the research was: To gain an understanding of the relational experiences of community members participating in a rural health initiative with interprofessional students and thereby improving teaching and learning practices.





he Department of Exercise and Sport Sciences provides a variety of services to schools within Bloemfontein. These services include wellness programs, perceptual-motor programs, baby stimulation, programs for special populations as well as sport development. We have provided services to Eersteling Primary School since 2017 where the children are exposed to a variety of sports such as netball, hockey, cricket and tennis. During 2019 Universitas Primary School (Tjokkies) assisted the Department with a joint project, where the learners played a netball- and hockey match against Eersteling. This was the first opportunity that the learners of Eersteling travelled to another school to play a match. The hockey team won 1-0 while the netball team was 5 all. The learners really enjoyed it and we are already planning matches for 2020.

EXERCISE AND SPORT SCIENCES

With regard to community outreach projects, the students and staff of the department of Exercise and Sport Sciences was awarded the winners of the FoHS Mandela Day cleaning up project.



NUTRITION AND DIETETICS

he Department of Nutrition and Dietetics celebrated a blessed 2019 with several noteworthy achievements in research, engaged scholarship and learning and teaching.

Dr Lucia Meko was selected to the Future Generation Professoriate Mentoring and Emerging Scholars Accelerator Programme of the University of the Free State (UFS). In addition, the UFS honoured Prof Corinna Walsh with a Kovsie Alumni Trust Executive Management Award for her continued leadership in nutrition and nutrition-related research. Prof Walsh continued to serve as the President of the Nutrition Society of South Africa during 2019At the 51th Faculty of Health Sciences Research Forum, 2019, she was also the winner of both the John van der Riet medal for the best publication in the clinical section and the Pathcare trophy for the best presentation.

During 2019, Liska Robb and Marizeth Jordaan both completed their doctoral studies in Dietetics. and Dr Jennifer Osei, a post-doctoral fellow associated with the department, finished data collection on 700 women at Pelonomi Regional Hospital and 100 in the rural Southern Free State. This project on the nutritional status of pregnant women in the Free State, under the leadership of Prof Walsh, will serve as the pilot for a planned birth-cohort study.

The department published seven research papers in 2019, mostly in international journals, as well as a book chapter for Paediatric Nutrition in Practice. Research generated by the departmental staff was presented at the 1st International Conference Nutrients 2019: Nutritional Advances in the Prevention and Management of Chronic Diseases (September 2019, Barcelona, Spain) (Prof Walsh); the 41st European Society of Clinical Nutrition and Metabolism (August 2019, Krakov, Poland) (Prof Louise van den Berg); and the CCSSA/SASPEN Critical Care Congress (August 2019, Cape Town (Prof van den Berg). The department hosted the Department of Nutrition and Dietetics, UFS, Continued Nutrition Education Symposium on the UFS campus (13th June 2019), in collaboration with Tiger Brands Foundation. A total of 150 delegates attended this annual event.





OCCUPATIONAL THERAPY

he department is proud of the 93% pass rate at the end of the academic year. Three final-year students obtained their degree with distinction. These results have been brought about by committed lecturers who are passionate about the profession and teaching.

The annual wheelchair rally for children with physical disabilities from Tswellang School aims to improve awareness of disability. Through fundraising, the students were able to sponsor two electric wheelchairs. Wheelchair rugby against the Mustangs, the Free State wheelchair rugby team, provided added excitement during the day.



Members of the Occupational Therapy Student Association that hosts the wheelchair rally



The race is under way with a little help from a friend, Bianca Tredoux





The department participated in the Mandala day sidewalk project of the School of Nursing. Lecturers, administrative assistants, students and even volunteers who passed by on the day joined in the fun. True to our philosophy that wellness is brought about by engaging in meaningful activity, the students even painted a Marabaraba board for pedestrians to take a break and play a game.



Photo below: Kristen Willemse and Daniella Gomes busy painting the marabaraba design



Miss Itumeleng Tsatsi attended the Occupational Therapy Africa Regional Group (OTARG) congress in Rwanda from 26-29 August 2019 where she presented a paper "An action research approach to optimizing a halfway house to meet the occupational needs of male mental health service users." Miss Tsatsi was elected on the executive board of OTARG.



Miss Tsatsi presenting her paper at the OTARG congress in Rwanda

Dr Tania Rauch van der Merwe obtained her PhD in Higher Education Studies and Occupational Therapy. The title of her thesis: "The political construction of occupational therapy in South Africa: Critical analysis of a curriculum as discourse."



Dr Tania Rauch van der Merwe

Miss Heidi Morgan was invited by community engagement offices to attend the global Appreciative Inquiry Conference in Nice, France in early 2019. The partnership with Bloemshelter and the impact within the Global University of Life-long Learning context formed the basis of the presentation.



Miss Heidi Morgan attending a discussion forum at the Appreciative Inquiry Conference in Nice, France The department's involvement in community engagement is very strong. Just a few examples of our involvement:

The Common Good First Project that was launched last year and aims to share uplifting stories of people around the world connecting people and universities towards creating a network of change makers. The OT department has a number of profiles registered on the website.

https://commongoodfirst.com/

In 2019 the annual Learning Festival was held in collaboration with the University of the Free State and Bloemshelter, a local NPO. This is the 5th year that we have been involved as a department playing key role in the coordination.

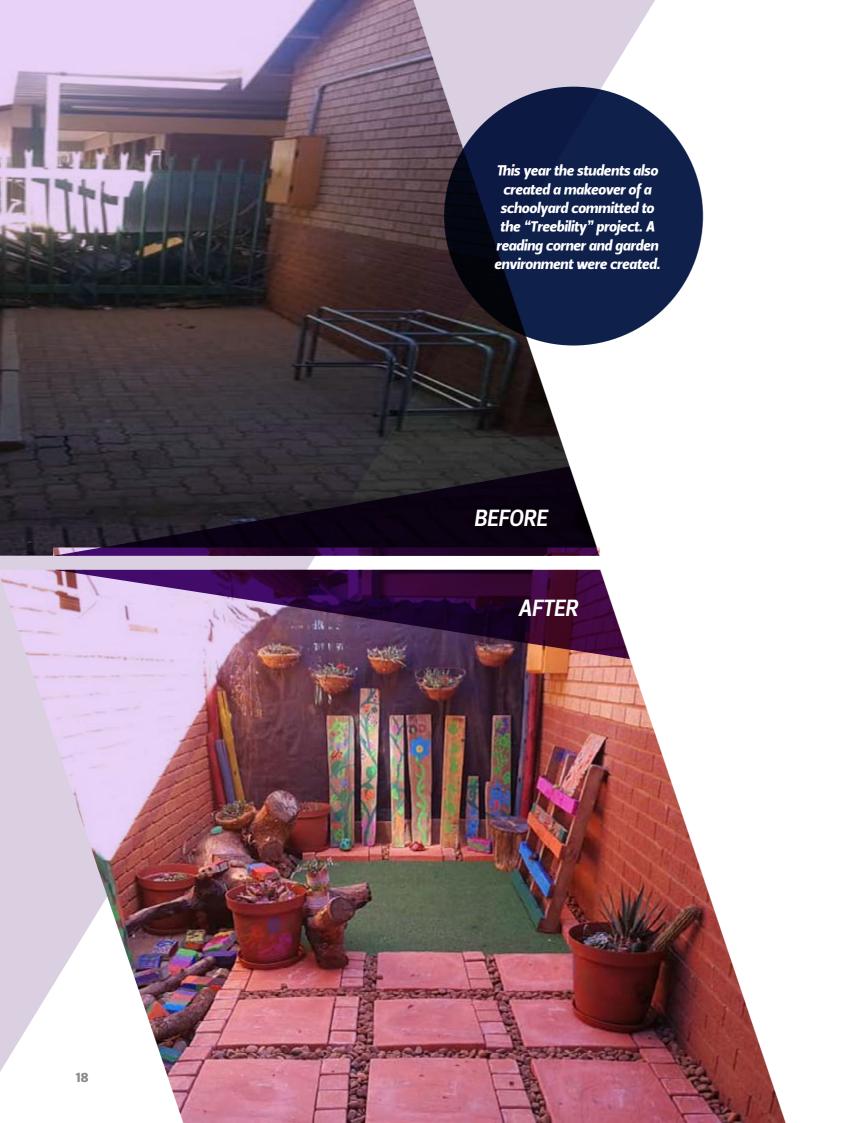
A cohort of 3rd year Occupational Therapy students annually collaborate with the Xhariep district's Inclusive Education Team through a mobile/touring Learning Festival in the Southern Free State. This event allows students the opportunity to reach out to 25 schools special needs classes and offer opportunities for mastery and exploration of a variety of different learning experiences and skills. This long standing partnership finds expression in increasingly focused activities and commitments which has elicited and earned respect for the profession amongst the public and private sector in the rural districts.



Photo below: Louis Mans teaching learners skateboarding skills during the Learning Festival



The department is extremely proud of Dr Annamarie van Jaarsveld who received a C2 level NRF rating in 2019.



PHYSIOTHERAPY

Social responsibility is one of the areas that the Physiotherapy department advocates to students and an inititiave of which the department is very proud is that the students and lecturing staff in collaboration with the Cheetah Rugby Team supported the Friends of Pelonomi project initiated by Prof N Mofolo of the School of Clinical Medicine, to collect 208 blankets for Pelonomi Hospital. The blankets, pillows and additional towelling linen to be used at the hospital were presented to Prof Mofolo.



The department also continues to support the Elanja children's project by providing not only non-perishable foods for the project to assist with providing food to the children, but the lecturers also provided soup and sandwiches to the children on a pre-arranged Saturday. A sport day was also arranged by the department where the children enjoyed playing sport, received food and got to meet the ALBANY mascot that provided the children with Tinkies.









Staff achievements include Mrs Anke van der Merwe being the runner-up in the junior division Education papers at the Faculty Forum for an interesting topic: A Framework for the integration of simulation in the South African undergraduate Physiotherapy Programme: A Narrative Systematic Review. Prof Corlia Janse van Vuuren, Head of the School for Allied Health Sciences, and Mrs Karen Bodenstein received the Kerneels Nel Medal for best educational article.



Mrs A van der Merwe

Community Service learning is a main priority of the department and the visibility of the Physiotherapy students in the community is a clear indication fo the department's commitment towards the growing need of health services in the community. Miss C Saaiman is actively involved in the planning of the community service not only at departmental level but also at School and Faculty level. The departement is also actively involved in Interprofessional training and makes use of simulation to enhance the learning experience of the more senior students in our department.

The students and lecturing staff also had a fun filled Mandela day when they attempted their hand at gardening. The outcome was impressive but unfortunately the continuing drought thwarted the good intentions.

The highlight of fourth-year students within the department is still their contribution at the yearly Comrades Marathon. This exposure to a major event also enhances the learning experences of the students in our departement. The students once again won the team spirit award at the Comrades Marathon.

Photo left: 4th-year Physiotherapy students at the strapping competition and at the Comrades



The space to become a garden during Mandela Day activities

FREE STATE

PROVINCIAL ARCHIVES

Students participating in Mandela Day activities



BASIC MEDICAL SCIENCES



Awards

- Dr Arnelle Mostert was awarded the prize for Best Educational Paper – Junior Category at the 51st Faculty Research Forum, hosted by the Faculty of Health Sciences (UFS) in 2019.
- Mrs Roné Vorster-De Wet was nominated for the 2019 Khothatsa Awards – the awards highlight inspirational lecturers at the UFS.
- Mr F Venter (MSc student) was awarded third prize at the Student Symposium in Natural Sciences, 31 October - I 1 November 2019 with a presentation on the effect of receiving text messages on the salivary cortisol levels of undergraduate Physiology students.
- Ms M Liphapang was recognized as the best 3rd year student in Physiology at the prize giving function of the Faculty of Natural and Agricultural Sciences.



Degrees conferred

Dr Arnelle Mostert received her Master's in Health Professions Education (MHProfEdu) degree for her study "The quality of life of University of the Free State first-year Health Sciences Students". She aims to expand her Master's work to other student groups at the university.

Photo on left: Dr Arnelle Mostert during her MHProfEdu graduation ceremony



Three students, Amanda Smal, Lebogang Matutule and Masego Nkosi received their BMedSc Honours degrees in Physiology during the April graduation

Mr F Venter's MMedSc degree in Physiology was awarded at the graduation ceremony on the 12th of December 2019.

Photo on left: Postgraduate student, Ms Amanda Smal, ready to receive her BMedSc Honours degree at graduation

2019 UFS Open Day

The annual UFS Open Day was held on 11 May 2019, with the Department of Basic Medical Sciences again attracting a lot of attention from prospective students. The department was represented at both the Faculty of Health Sciences and Faculty of Natural and Agricultural Sciences exhibits. The anatomy and anthropology stall was managed by Dr Petra Maass and two postgraduate students, Ms Luyanda Malangeni and Ms Amanda Smal. While aimed at providing visiting high school pupils with information about the available courses, much of the day was also spent sharing interesting facts about the human body (both living and dead) with the learners and their accompanying family members.



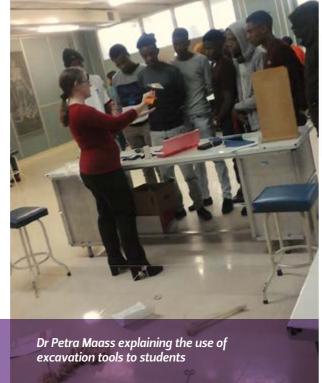


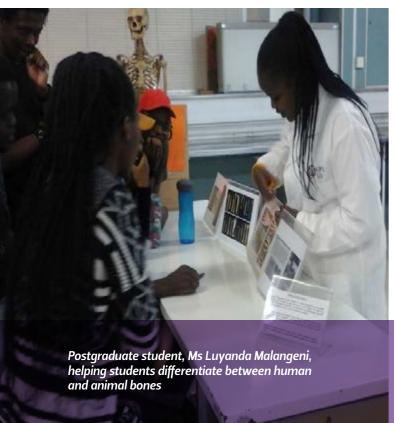


Forensic Workshops

The department again hosted the annual two-part workshop for second-year Forensic Science students in April and May of this year. During the first session, Ms Tshegofatso Ramphaleng guided students through basic human osteology, followed by a practical session with exciting challenges such as sketching bones and sorting different bones into labelled boxes. The second session, presented by Dr Petra Maass, gave students practical tips to dealing with bones in a forensic or archaeological context. The final practical session allowed students to apply their obtained skills in solving several "real" forensic anthropology cases through interpreting a crime scene and the evidence at the scene. Popularity of the workshop has grown so much that our departmental colleagues from anatomy and physiology – Dr Jenelle Govender, Ms Shivani Govender and Ms Shannal Pillay – also participated in this year's workshop.



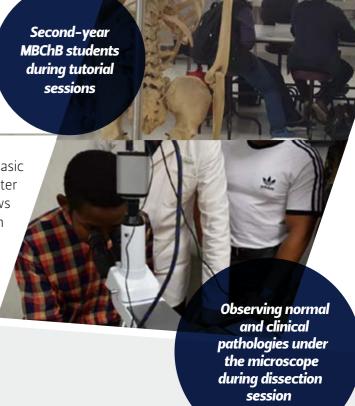






New dissection hall facilities

The spacious dissection hall in the Department Basic Medical Sciences houses high-quality sound, computer equipment, a unique camera system that allows students to follow dissection demonstrations on ten screens in the hall, and a microscope for integrated teaching activities.



Sharing the dissection hall experience

Second-year MBChB students who had completed their dissection module in the department took part in the Cadaver Case Study Presentations. In groups of 6-8 students, each of the 27 dissection groups had to give an oral presentation to their peers, providing a description and researched background on an anatomical abnormality, variation or interesting pathology that they observed on the cadaver they had been dissecting over the past 10 months. Topics presented ranged from lymphomas to patent ductus arteriosus to accessory lobes of the liver, making the work of the adjudicators - Drs Henk Potgieter and Petra Maass and Mr Gerhard van Zyl - very difficult. In the end, the presentation on inguinal lymphadenopathy, which was presented like a live television news report, stole the show, and the group was named the clear winners of the day.



Second-year MBChB students ready to present interesting variations or pathologies observed during dissection



In June, Drs Mada Ferreira and Petra Maass were responsible for the production of a short video based on interviews with secondyear medical students. The video features several students describing their dissection hall experiences and providing future students with advice on how to approach the daunting task of full body dissection.

> Second-year MBChB students shared their dissection hall experiences in a short video, describing the process and giving advice to future classes

The department also hosted the Teleflex EZ-10 (interosseous) workshop in August 2019. The workshop was used to demonstrate a new procedure for the administration of emergency fluid directly into the proximal humerus or anterior tibia of a patient. Over the two days, the technique was demonstrated to several groups of participants, including anaesthetists, ambulance workers and emergency care doctors from the Free State and Northern Cape.





In November 2019, the Department of Basic Medical Sciences along with specialists from the UFS Department of Otorhinolaryngology hosted the annual temporal bone workshop. This weeklong course saw 15 participants work through a series of advanced surgical techniques using state of the art equipment under the guidance of both local and international experts.





Staff members Jenelle Govender, Simone Gordon, Arnelle Mostert, Annelize Vorster, Petra Maass and Yolani Benadé wearing their colourful and silly socks for mental health awareness



Mental health awareness

Members of the department participated in the Crazy Socks for Docs Day on 7 June 2019 by wearing some silly and playful socks to work. The initiative aims at raising awareness and support for health professionals dealing with mental health issues.

The department also participated in Mental Health Awareness, in cooperation with the MBChB Programme Director's office, and inspirational and mental health educational quotes were posted on boards in the faculty foyer, lecture venues and in the administrative building.

The department of Basic Medical Sciences was involved in engaged citizenship through community service projects in 2019. The main aim of the committee was to support the CF Visser School and old age homes by providing food and basic products and health information. Initiatives launched in the department served as fundraising activities for various projects throughout the year.

Donations from members of the department enabled the department to deliver freshly-baked bread loaves every second week throughout the year to the CF Visser School. Cupcakes and sweet treats were sold on Valentine's Day to raise funds for the winter warmer project in June 2019. Easter eggs, accompanied by an Easter message, were distributed to learners at the CF Visser School. An easter hunt at the pre-primary school formed part of this activity.



BIOSTATISTICS

Mr Mamba received his MSc in Risk Analysis in the Department of Mathematical Statistics and Actuarial Science in June 2019.

Prof Joubert was an external examiner for the Biostatistics II module in the Public Health Programme at University of Stellenbosch.

As part of the statistical consultation service offered by the department, 175 new research projects were handled: 110 postgraduate projects, 51 undergraduate projects, 11 research projects, one institutional project and two community service doctor projects. Staff members were co-authors of 23 full-length articles published during 2019.

Staff members were co-authors of a number of prize-winning presentations and a medal-winning article at the annual Faculty Research Forum as well as co-authors of a number of prize-winning presentations at the Free State Health Research Day in November 2019. A presentation, titled "Timeliness of Administration of the Combination Vaccine (DTaP-IPV-HepB-Hib) amongst Children < 5 Years of Age at Public Health Care Facilities in Bloemfontein" received the prize as second best presentation.

With the ever-increasing emphasis on research within the school, faculty and university, the teaching and consultation load of the department is expanding continuously. The department is looking forward to the appointment of an additional senior lecturer in 2020. More emphasis will be placed on the enhancement of the field of biostatistics in future.



CLINICAL SKILLS AND SIMULATION UNIT

he Clinical Simulation and Skills Unit (CSSU) provides educational opportunities to undergraduate students in the undergraduate MB ChB Programme, and to a lesser degree to students of the School for Allied Health Professions and School of Nursing through experiential learning. Simulation training provides a hands-on practical training and learning opportunity allowing for deliberate practice and mastery of learning.

The use of human patient simulators, mediumand low-fidelity simulators, as well as standardised patients in various scenarios, provides a tool to enhance the education and training of medical students by expanding the teaching platform, address the change in case mix and provide a safe and non-threatening learning environment.

CSSU also provide training opportunities for postgraduate registrar and interns, using the same educational principles.

Donation of Samsung Ultrasound System for student training

Medical students in the Faculty of Health Sciences at the UFS will now be able to learn how to perform procedures such as the precise location of a vein for intravenous lines and for diagnostic procedures such as detecting abnormalities in pregnancies, identifying gallstones, and diagnosing traumarelated injuries with ease. This was made possible by the placement of a one-of-a-kind ultrasound machine – putting them on par with cutting-edge global medical technology.

A first ever in the medical curriculum of undergraduate students at the UFS

The state-of-the-art, compact HS70A Samsung ultrasound system to the value of R1,4 million was unveiled in the Faculty of Health Sciences' Clinical Simulation and Skills Unit on 19 November 2019. A first ever in the medical curriculum of undergraduate students at the UFS, it is set to revolutionise the delivery of health-care education in the faculty, said Prof Lomby Odendaal, Teaching and Learning Coordinator for undergraduate anaesthesiology training in the Department of Anaesthesiology.

The ultrasound system was donated by SSEM Mthembu Medical and Samsung Korea. Prof Odendaal said for the first time in the history of the undergraduate MB ChB curriculum, the ultrasound will be available to medical students from their third year. Students have never had the opportunity to be trained in using ultrasound this early in their careers.

Improved clinical training experience of students

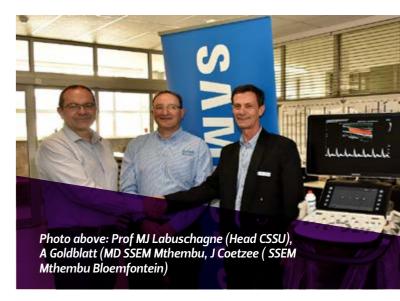
Ultrasound is a diagnostic medical tool that uses sound waves to produce images of internal structures of the body. Prof Odendaal said ultrasound is important to determine pathology and diseases in the body and to provide point-of-care ultrasound. Having the ultrasound in the unit will transform the clinical training experience of students, training them to provide better treatment and medical care, even in constrained environments, to improve patient care.

Streamlined workflow for patient care

"The cutting-edge technology and rich image quality of the ultrasound will deliver top-notch diagnoses to suit the diverse departments within the faculty," said Chase Hutchinson, National Product Manager at SSEM Mthembu Medical. It comes with various pre-set models to cater for different needs and applications, allowing streamlined workflow for higher efficiency and patient care.

According to Prof Mathys Labuschagne, the Head of the Clinical Simulation and Skills Unit, ultrasound training will improve the quality of doctors graduating in the faculty. "We are really excited about this. You can diagnose many conditions using ultrasound and deliver point-of-care ultrasound; this will become a natural part of students' training and clinical practice in future."





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Endoscopic simulation course presented at UFS

The Clinical Simulation and Skills Unit, in collaboration with the Gastroenterology Units of Departments of Internal Medicine and Surgery presented the first Basic Endoscopy Simulation Course in March 2019 in Bloemfontein, South Arica. This two day interactive simulator based course was aimed at the novice/beginner endoscopist wanting to feel more comfortable with the practice before commencing formal endoscopy training. The theoretical basis of performing a safe endoscopy and effective periendoscopy management was covered. The course included a morning of interactive lectures followed by a day and a half of practical experience using the EndoSim simulator. Each trainee undertook a number of gastroscopies and colonoscopies (minimum of 3 per trainee) under the supervision of expert trainers.

This was the first simulator-based endoscopic course of this kind presented in South Africa. SurgicalScience, a Swedish company and leader in development of virtual reality simulators, provided two Endosim simulators for the workshop. Anders Melander came from Sweden to assist with the course. Boston Scientific, a company providing equipment for endoscopy, sponsored part of the course.

Feedback from facilitators and participants was overwhelming positive. Prof Jan van Zyl said: "Only in the 2 hour session with gastroscopic biopsies, the group performed biopsies equivalent to train on 30 patients". Courses like this will improve the patient safety, reduce procedure time and will impact positively on the instrument upkeep in the real life.





INSETA REPORT

The gala dinner

The Gala Dinner was the first official event as in-service training interns in the School of Clinical Medicine at the University of the Free State. The event was a fundraising gala dinner hosted by the university on behalf of the Friends of Pelonomi, a non-profit organisation which aims to raise funds to help improve the services at Pelonomi Hospital. In preparation for the event we were tasked with the activities of looking for sponsors, assisting in organizing the actual event and helping with setting up the décor and the hosting of the people in attendance.























Our second event was the blanket drive. In preparation for the blanket drive we were tasked with finding sponsors and promoting the event on and off campus. The blankets which were received from various donors were later handed to Pelonomi Hospital on two different occasions.

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The fun walk

The fun walk was our opportunity to showcase the skills and knowledge we had learned over the period of our internship.

For this event we had to do everything on our own, from the planning, organising, marketing and coordinating with the different university departments to make the event possible. We took of care of important activities such as contacting sponsors, coordinating with the university's traffic department, getting the relevant permission for hosting the event and making sure that everything was according to the rules and regulations of the university.

We also took care of the marketing side of things, which included promoting the event, designing the posters and banners as well as selling the tickets for the event. We also attended radio interviews to promote the event as we were trying to get as many people as possible to attend.

MEDICAL PHYSICS

During 2019 we had 6 PhD students, 8 MMedSc students and 2 postdoctoral students. We also provided study guidance for 2 students from the CUT. Co-supervision was also provided for one PhD student from UCT.

As part of the Cancer research group, Medical Physics contributed to 8 peer reviewed papers. We are also actively involved in Gafchromic film dosimetry for radionuclide dosimetry applications. The MRC Flagship programme also concluded on 28 February this year after 5 years with over 25 research papers produced to date from funding with 3 postdoctorals, 5 PhD's and 9 Master's students.

We hosted a national course on internal organ dosimetry in collaboration with scientists from Lund University in Sweden under the STINT NRF funded programme during August 2019.

With additional funding from the UFS it is possible to keep our postdoc candidates for another year. The MRC HARD project formally concluded at the end of February and up to date we have 25 publications. This group published 5 papers in peer reviewed journals for 2018 and we stand at 9 for 2019.

The Nuclear Medicine group focuses on a field of brachytherapy known as teranostics which is a combination of imaging and radiation therapy. The focus is on Monte Carlo simulation studies to prototype radiation dose effects using different ligands and isotopes linked to it. Our Medical Physics group is the only one in the country that can utilize Monte Carlo software to accurately quantify radiation dose of therapeutic ligands for certain cancer treatments. Diagnostic radiology are doing studies in conjunction with Oncology and the Radiotherapy group in MP that look into radiomics to uncover disease characteristics e.g. cancer. These studies show promise into radiation dosages in tissue and the effects they are causing.

It is also with great excitement that we see the realization of a five year tendering process that will bring forth 2 new state-of-the-art linear accelerators with advanced radiation treatment capability at Oncology. Also included are several advanced biologically optimized treatment planning systems with very accurate dose calculation and a 4D CT scanner for organ motion correction during radiation treatment. Installation and commissioning is expected to end in March 2020.

Dr Freek du Plessis received a C2 NRF rating.

We are excited to be part of the cancer treatment research group in the UFS and look forward to make future contributions in cancer therapies, imaging, and dosimetry.

Dr Acho obtained her PhD degree.

The NRF Stint project collaborates with Prof Micheal Ljungberg and Dr Johann Gustafsson from Lund University. A workshop was held during 13 – 17 August 2019 that focused on training on the Lundadose Monte Carlo code for internal patient dosimetry using isotopes.

A collaboration with Texas MD Anderson Cancer Center is also active with Prof Lawrence Court as an international collaborator. This group focuses on image segmentation and radiomics for cancer imaging and response analysis.







The School of Nursing celebrates 50 years of excellence

"The School of Nursing is one of the flagships of the University of the Free State," said Prof. Francis Petersen, Rector of the UFS, during the 50th anniversary of the School of Nursing. The celebrations, which lasted over three days in April 2019, showcased the history of the School of Nursing and its influence in the development of the nursing profession in South Africa. Delegates from all over Southern Africa, including Lesotho, graced this milestone celebration at the Centenary complex on the Bloemfontein campus. The celebrations included an exhibition of the state of the art facilities of the School of Nursing which stand as a hallmark of its achievements over the last 50 years. The future looks bright for the School of Nursing as it continues to inspire excellence in nursing education.

Accreditation of the Bachelor of Nursing programme

The Bachelor of Nursing programme was accredited for five years by the South African Nursing Council (SANC) and the Council on Higher Education (CHE). This is a significant milestone for the School of Nursing, which had to re-structure the programme to align with new nursing education regulatory requirements. The University of the Free State is one of the few universities in South Africa with an accredited Bachelor of Nursing programme for 2020.

AfriPEN and SAFRI Board Chairperson at the School of Nursing

Dr Champion Nyoni has been elected to be Chairperson of the Board of Directors (BoD) for the prestigious Sub-Saharan Africa FAIMER Regional Institute (SAFRI). SAFRI is linked with Foundation for the Advancement in International Medical Education and Research (FAIMER) based in the United States and focuses on faculty capacity development specifically for lecturers in the Health Sciences faculties in Africa. AfrIPEN is the Africa Interprofessional Education Network focused on promoting and advocating for interprofessional education (IPE) and collaborative practice in the African Region. We congratulate Dr Champion N Nyoni from the School of Nursing for being elected as the new Chairperson of the Board and Facilitator of AfriPEN.



Dr C Nyoni



Dr L Hugo-Van Dyk is the content expert during the development of the online programme for the Online Training in Clinical Facilitation for Health Professionals programme. She is also the first nurse in the School of Nursing who is awarded the prestigious Sub-Saharan Africa FAIMER Regional Institute (SAFRI) fellowship for her research in nursing education and emotional intelligence.



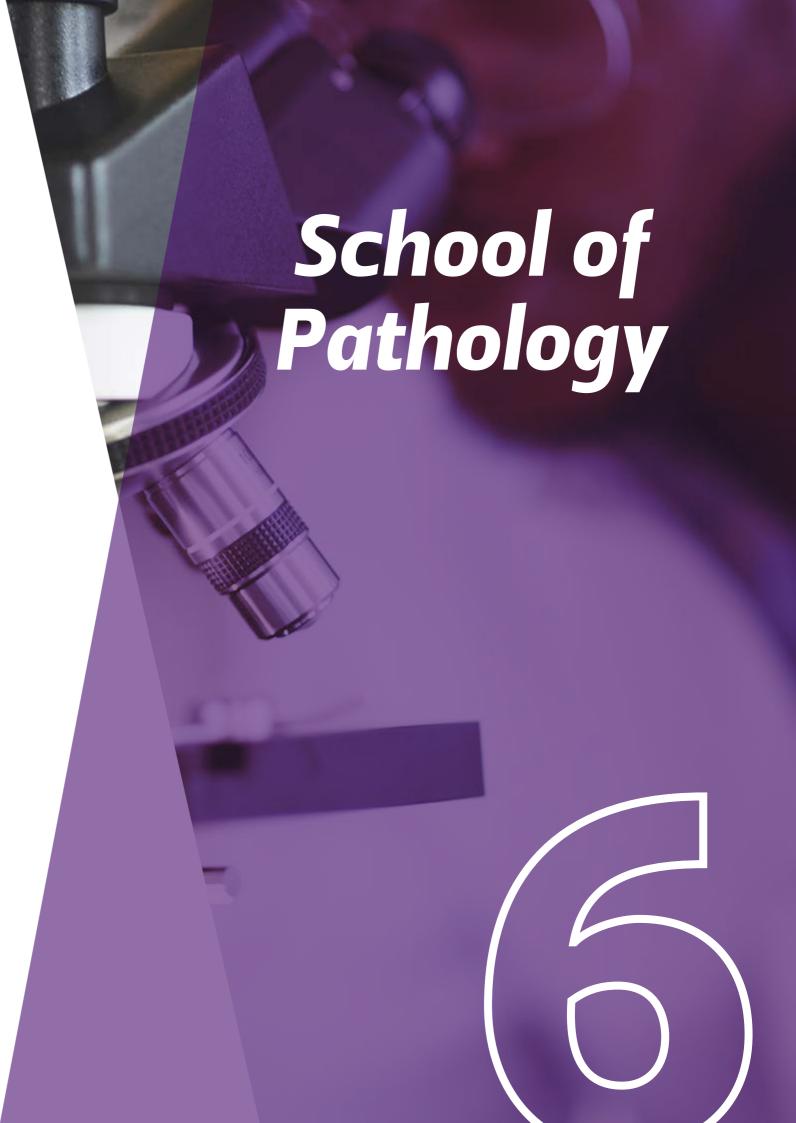
Dr L Hugo

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MEGA Project

Mrs Ronelle Jansen heads the Free State's (UFS) leg of the MEGA project, a large European Union-funded project on mental health care. The aim of the project is to build mental health capacity among primary health care nurses in South Africa and Zambia by developing and piloting a mobile application to screen adolescents for mental health. Mega partners include nurses, psychiatrists, psychologists, sociologists, researchers, and IT specialists from Finland, Latvia, Germany, Zambia (LAMU & UNZA) and four SA universities (UFS, UCT, US and UP).





ANATOMICAL PATHOLOGY

Members of the Department of Anatomical Pathology presented at local and international pathology congresses during 2019. Dr A Roets and Dr E Morrison presented cases at the NHLS PathRed congress held in Johannesburg and Dr J Duncan and Dr HA van Niekerk presented cases at the International Academy of Pathology (IAP) congress held in Johannesburg. Prof J Goedhals was an invited speaker at the Society of Medical Laboratory Technology of South Africa (SMLTSA) congress held in Bloemfontein and attended the IAP congress in Johannesburg as well as the Ivo Leuschner Memorial Advanced Course in Paediatric Pathology held in Sicily.

Prof Rod Wallace Simpson from the University of Calgary, Alberta, Canada, visited the department in September 2019 and gave two talks on head and neck pathology. Prof Lorenzo Leoncini from the University of Siena, Italy and Prof Martine Raphael from the Université Paris-Sud, Paris, France also visited the department in September 2019 and presented talks on haematopathology.

Two registrars passed the FC Path (SA) Anat part I exam.

CHEMICAL PATHOLOGY



Dr Anand Krishnan, a postdoctoral fellow in Chemical Pathology, edited a book titled "Integrative Nanomedicine for New Therapies" with Springer-Nature Publisher.

The book presents current laboratory, scientific and clinical aspects of nanomaterials used for medical applications in the fields of regenerative medicine, dentistry and pharmacy. It gives a broad overview of the *in vitro* compatibility assessment of nanostructured materials implemented in the medical field by the combination of classical biological protocols. The chapters cover all aspects of integrative medicine, such as green derived nanomaterials for biological applications; synthetic and nature-derived lipid nanoparticles and polymer nanoparticles.

HAEMATOLOGY AND CELL BIOLOGY

The department maintained its high standard of service delivery in 2019 – all the laboratories maintained their SANAS accreditation during the 2019 inspections. Dr André De Kock and Mr Jean Kloppers of the tissue typing laboratory are actively involved in the MISTRAL project of the South African National Defence Force (SANDF) that types the STR profiles of more than 1000 soldiers per year. The department bought an Applied Biosystem 3500 genetic analyser in 2019 to further enhance this testing capacity.

High quality teaching & training and assessment have always been important to the department. Two registrars passed the FC Path(SA) Haem Part I. The HPCSA maintained our accreditation to train eight registrars for the next five years. A record of 12 candidates were accommodated in the practical exams. Ms Rethabile Maleka registered as a medical scientist in 2019, reiterating the department's commitment to also producing HPCSA-registered medical scientists.

Academically, 2019 was a very productive year as well. Dr Van Marle arranged and presented a clinical flow cytometry and leukaemia workshop and Prof Muriel Meiring and Prof Coetzee presented a coagulation workshop at the national 2019 NHLS PathReD congress. Four members of the department were also invited speakers at this congress in Johannesburg: Prof Coetzee ("Vascular bleeding disorders" and "Tips on improving your ethics submissions"), Dr Joubert ("Thrombotic Thrombocytopenic Purpura - Advances and research opportunities"), Dr Van Marle ("How to go about haematogones") and Prof Meiring ("Platelet function testing"). Mr Kloppers won Best Poster Presentation in Haematology and Immunology at PathReD 2019. Prof Coetzee and Dr Joubert were also co-investigators in a study on the prevalence of comorbid psychiatric illness and quality of life in adults with inherited bleeding disorders in central South Africa, which was presented at the SA Haemophilia Foundation Medical and Scientific Advisory Committee Educational Symposium in Johannesburg.

Internationally, Dr Haupt represented the department at the Hemlibra Global Exchange meeting in Dublin, Ireland. Dr Van Marle also successfully completed the Royal Microscopical Society Distance Learning Course in Flow Cytometry, in 2019.

The department is also involved with numerous long-term research projects, both nationally and internationally. The department started working on the vascular bleeding disorder hereditary haemorrhagic telangiectasia (HHT) a few years ago, and has teamed up with the Dutch Centre of Excellence for HHT at the Utrecht University Medical Centre. Dr Terence Mutize presented some of this research at the 2019 Faculty of Health Sciences Faculty Forum, and won Runner-up Junior Clinical Poster Presentation.

The department, through Prof Meiring and Dr Wattie Janse Van Rensburg, also forms part of the South African Thrombotic Microangiopathy (TMA) Network where research on thrombotic thrombocytopenic purpura (TTP) is conducted on a national level.

The special haemostasis laboratory headed by Prof Meiring obtained NRF funding of R2.5 million for a micro-plus flow cytometer. Prof Meiring obtained her D Med Sc degree in 2019, whilst also producing a PhD graduate – Dr Mmakgabu Khemisi.

Despite heavy routine service delivery demands (the Haematology academic laboratory completed 132 285 tests in 2019), the department still managed to produce six full-length articles in accredited journals in 2019.

The department's proven ability to balance the demands of service delivery, teaching & training, research, and engaged scholarship, augurs well for its continued prosperity in future.

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MEDICAL MICROBIOLOGY



Department of Medical Microbiology staff members, postgraduate students, together with one of the MBChB MSSM students, showcasing awards received at:

PathRed 2019 Congress: 18 – 21 July 2019, Johannesburg, "Tuberculosis and MTB strains among adolescents, Free State."

51st University of the Free State, FoHS Faculty Research Forum: 29 - 30 August 2019 "Multi-drug resistant profiles and Carbapenemase determinants of Acinetobacter baumannii isolates from the Universitas Academic Hospital, Free State."

The 8th Annual Free State Provincial Health Research Day: 7 November 2019 *"The bacterial distribution of peritonitis among adults undergoing continuous ambulatory peritoneal dialysis at Universitas hospital"*

(Photo taken in 2019)

Division of Virology

The division of Virology will be responsible for managing the new biosafety level 3 (BSL 3) facility established at the University of the Free State. Research and handling of infectious viruses and bacteria requires appropriate biosafety and containment measures to prevent laboratory workers, personnel and the environment being exposed to potentially biohazardous agents. There are four distinct levels of biosafety (levels one to four), with each having specific biosafety requirements. A BSL 3 laboratory is designed and precision-built to operate under negative pressure and sees all exhausted air passing through a dedicated filter system to ensure that no pathogens escape into the environment. In addition, researchers wear appropriate personal protective equipment suited to the pathogens under investigation. Biosafety and biosecurity are essential in the investigation of emerging and infectious pathogens that cause significant disease and fatalities. The current pandemic of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) highlights the need for training of young scientists in the field of emerging pathogens with potential for significant public health consequences.

The UFS-NGS unit enjoys longstanding networking and collaborative ventures with researchers in Africa, the USA, Australia and Europe, and has received research awards from the World Health Organisation, South African Medical Research Council, Poliomyelitis Research Foundation, and the National Research Foundation for different aspects of genomics research. Most prominently, a project funded by the Bill and Melinda Gates Foundation for the African Enteric Viruses Genome Initiative (AEVGI), involving four African countries (South Africa, Ghana, Malawi, and Cameroon), is investigating the long-term effects of the introduction of monovalent rotavirus vaccine. Furthermore, in 2019, the Centers for Disease Control and Prevention (CDC) and the UFS-NGS Unit identified areas of mutual cooperation to acquire subsidized reagents from the International Reagent Resource (IRR) that will assist in capacity building.

Three staff members of the division currently hold NRF ratings, namely Prof FJ Burt (B3), Prof D Goedhals (Y2) and Dr MM Nyaga (Y2). Prof Burt also holds a South African Research Chair in vector-borne and zoonotic diseases research. In 2019, Dr Nyaga joined the Transforming the Professoriate mentoring programme 2019–2021.

An NRF STINT funded workshop was hosted on Crimean-Congo haemorrhagic fever: detection diagnosis and tick vectors. The workshop was attended by participants from the UFS, Lesotho and Sweden. It was part of an ongoing collaboration with Sweden and was presented by an entomologist from the University of Pretoria. Staff and students also presented at several local and international workshops in 2019, including Training on sequence data and bioinformatics workshop 2019, Nairobi Kenya (Dr Nyaga); NGS and viral metagenomics studies: African perspectives and funding opportunities, 2019, DUT, Durban, South Africa (Dr Nyaga); Training on genome assembly and NGS data analysis using customised bioinformatics tools/pipelines, 2019, DUT, Durban, South Africa (Dr Nyaga); Training on sequence and analyses of genomic data for cytochrome P450 research, 2019, University of Zululand, South Africa (Dr Nyaga); Rabies and VHF FS DOH roadshow, Bloemfontein and Kroonstad, South Africa (Dr S Vawda). In addition, Dr Nyaga was a member of the local organizing committee of the African Rotavirus Symposium held in Johannesburg in 2019.

Staff and students presented and attended various local and international congresses. Amongst these were Dr MM Nyaga and Dr JG Vermeulen (postdoctoral fellow) who were invited speakers at the 3rd pathology research and development congress (PathReD), Johannesburg; M Litabe at the Tofo 4th Advanced Study Week on Emerging Viruses, Mozambique; Dr S Vawda presented an e-poster at the FIDSSA congress, Johannesburg; Prof D Goedhals and I Barakzai at the XXVIII International Workshop on HIV Drug Resistance and Treatment Strategies, Johannesburg.

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Through its collaborative projects, the UFS-NGS Unit frequently hosts visitors from local and abroad including:

- Dr Mathew Esona. Rotavirus Surveillance and Molecular Epidemiology Team Viral Gastroenteritis Branch, Division of Viral Diseases, NCIRD, CDC, USA, (3-10 August 2019).
- Dr Benjamin Kumwenda. Faculty of Biomedical Sciences and Health Professions, College of Medicine (COM), University of Malawi, (27 October to 6 November 2019).
- Dr Saheed Sabiu. The Drug Discovery, Development and Detoxification, and Viral Metagenomics Research (D3VMR) Unit of the Department of Biotechnology, Durban University of Technology (01–10 August 2019).

Staff and students participated in the Faculty of Health Sciences Research Forum, with Dr MM Nyaga as the winner of the Muller Potgieter medal and S Rasebotsa who won the Best Junior Laboratory Paper.

The One Health Initiative community outreach activities continued in 2019, where pamphlets were obtained from the Department of Health for tuberculosis, brucellosis and rabies. The pamphlets were distributed to farm workers to raise awareness on medically significant infections found in South Africa.





