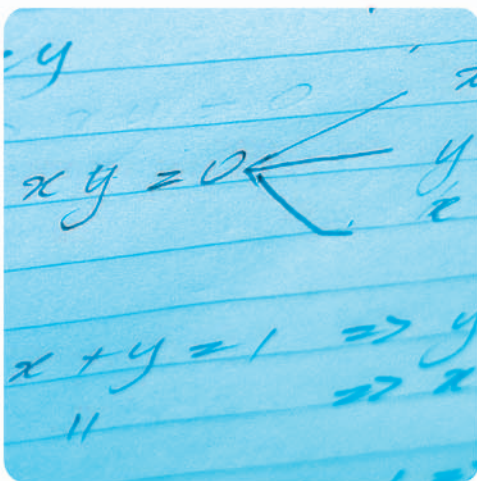


Faculty of Natural and Agricultural Sciences

Report 2008



Faculty of

**Natural and
Agricultural Sciences**

Report 2008

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Faculty of Natural and Agricultural Sciences
University of the Free State

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Preface

From the Dean's Office

In 2008 the Faculty of Natural and Agricultural Sciences once again lived up to its vision to be acknowledged as a faculty that is at the forefront of the practice of natural and agricultural science where the highest levels of quality and credibility are reflected.

During the year the faculty not only remained one of the leaders in training and career development in the natural and agricultural sciences, but it also made a concerted effort to enlarge its international footprint and to establish itself internationally. This is evident in the visits of staff from the faculty to universities such as the USA-based University of Minnesota and Virginia Polytechnic Institute and State University (Virginia Tech) and the extension of international agreements between the University of the Free State (UFS) and these institutions. The faculty also had the privilege of hosting a high-level delegation from the University of Minnesota on the Main Campus in Bloemfontein in August 2008.

The turmoil in the international markets firstly led to very high oil prices, which spilt over to the grain markets and high food prices. This, in turn, led to high inflation levels and therefore high interest rates. Eventually the exchange rate also deteriorated against the major currencies. In the latter part of the year the whole situation was turned upside down with the collapse of the financial markets. The faculty did not escape this and the price of equipment for which orders were placed sky rocketed. Innovative skills had to be applied to remain on track with our equipment strategy.

Although 2008 was an exceptionally difficult year for the UFS and the institution had to bear the brunt of the Reitz video and the reaction of the national and international community, the faculty still managed to perform and expand its core business.

The faculty offers multi-disciplinary and holistic courses to send skilled and capable students into the South African workplace and to empower the labour force. Our general and extended programmes are continuously assessed and improved in order to improve our throughput rates and quality of teaching.

The staff at the faculty worked tirelessly this year to broaden our product offering and to provide our students with the best quality teaching in the country. I applaud their efforts of expanding capacity, developing programmes and strengthening re-



Prof. Herman van Schalkwyk.

lationships both within and outside the faculty and the university.

I also want to applaud the staff and students of the faculty with their achievements this year – whether it is on a personal level, in their capacity as staff member of their respective department/centre or for the faculty. To mention a few:

- Ms Estelle Heideman HIV/Aids coordinator of the Lengau Agricultural Development Centre, received a bursary to participate in a leadership programme in the United States of America (USA), which trains female leaders in South Africa who contribute to the prevention of HIV at a local, regional and national level;
- In the Department of Agricultural Economics, Prof. Johan Willemse, known for his contribution towards agriculture, was appointed on the non-executive board of Absa;

Staff in the dean's office



The staff working in the dean's office are, from the left, front: Ms Stefanie Naborn, Manager: Marketing and Liaison, Ms René Bloem, Secretary, Prof. Neil Heideman, Vice-Dean: Faculty of Natural and Agricultural Sciences; back: Mr Clasia Claassen, Assistant Administrative Officer, Mr Johan Kruger, Faculty Manager, Ms Lorinda Rust, Secretary, and Ms Mitzie Cloete, Typist/Clerical Assistant.

- Prof. James du Preez, Departmental Chair of the Department Microbial, Biochemical and Food Biotechnology, received the silver medal for exceptional published research awarded at the biennial conference of the South African Society for Microbiology hosted in Graham's Town. It was only the seventh time since 1986 that the medal was awarded;
- A study of the UFS about how the change in the packaging of DNA with cellular development is influenced by the expression of genes, in which Prof. Hugh Patterson played a leading role, was published in a leading peer-reviewed scientific journal *Proceeding of the National Academy of Sciences* of the USA (PNAS). The PNAS journal has an impact factor of 10, which means that studies published in this journal are referred to by ten other scientific studies within the scope of two years;
- Prof. Riaan Luyt, professor in Chemistry and head of the Natural Sciences Programme at the Qwaqwa Campus, received an honorary medal from the Polymer Institute of the Slovak Academy of Sciences during a conference hosted in the High Tatras mountains of Slovakia;
- Prof. Maryke Labuschagne from the Department of Plant Sciences was the recipient of the National Science and Technology Forum's (NSTF) research capacity-development award. A team consisting of Prof. Jan van der Westhuizen and Dr Susan Bonnet from the Department of Chemistry, Prof. Kenneth Swart and Prof. Thinus van der Merwe from FARMOVS-PAREXEL also

received the innovation award for an outstanding contribution to science, engineering and technology by either an individual or a team over the last ten years from the NSTF;

- Prof. Maryke Labuschagne received a second prestigious national award for her research when the 2008 Cereal Science and Technology - SA's (CST-SA) Award for research and development was awarded to her; and
- Prof. Ivan Horak, extraordinary professor at the university's Department of Zoology and Entomology, became the third person in the history of the UFS to receive the D.Sc. degree.

In closing I would like to thank the faculty's lecturing staff for their support and enthusiasm during the past year. However, none of these achievements would have been possible without the interest and hard work of the administrative staff.

During 2008 we have all worked together to live up to the faculty's motto: "There is no substitute for excellence!" This report covers the activities of the faculty in 2008. It is a reflection of a year's commitment from a team of highly skilled academic and support staff.

Prof. Herman van Schalkwyk
Dean: Faculty of Natural and Agricultural Sciences
University of the Free State

Faculty news

Successful visit from delegation of the University of Minnesota

A senior delegation from the University of Minnesota in the United States of America (USA) paid a very successful visit to the University of the Free State (UFS) in May 2008 to explore ways of strengthening already existing ties between the two institutions.

Teacher training, capacity building in health sciences and student preparedness were among the areas of cooperation that were investigated, within the context of the Strategic Academic Cluster initiative of the UFS. Poverty reduction strategies were also a strong focus area.

The Faculty of Natural and Agricultural Sciences has had a cooperation agreement with the University of Minnesota's Department of Applied Economics since 2002 and the exchange of staff



During the visit are, from the left: Prof. Herman van Schalkwyk, Dean: Faculty of Natural and Agricultural Sciences at the UFS, Prof. Robert Jones, Senior Vice-President: System Academic Administration at the University of Minnesota, Dr Meredith Quiad, Associate Vice-President and Dean: International Programmes, University of Minnesota, Prof. Teuns Verschoor, Acting Rector of the UFS and Prof. Ezekiel Moraka, Vice-Rector: Student Affairs at the UFS.

has been taking place on a regular basis. This agreement will be expanded and both institutions are now exploring the possibility of

applying it across faculties. Both institutions have committed seed funding to formalise the cooperation agreement.

50 years of Agriculture celebrated



The faculty celebrated 50 years of the teaching of agriculture at the UFS in November 2008. Part of the celebrations was a seminar with the theme "Challenges in a changing agricultural environment". Some of the guest speakers are, from the left: Mr Corwyn Botha, Chairman: Agri Business Chamber and Managing Director of the Cape Agri Group, Mr Motsepe Matlala, President of NAFU, Mr Hans van der Merwe, Executive Head: Agri SA, Prof. Herman van Schalkwyk: Dean: Faculty of Natural and Agricultural Sciences at the UFS, and Mr Sugar Ramakarane, Head: Department of Agriculture, Free State Province.

Winners of NSTF awards assist with recruitment of students



Here are, from the left: Dr Martin Ntwaeaborwa, senior lecturer at the Department of Physics and finalist in the category for black researchers, Prof. Kenneth Swart, FARMOVS-PAREXEL, Prof. Maryke Labuschagne, head of Plant Breeding at the UFS's Department of Plant Sciences and female recipient of the award for the development of research capacity over the past five to ten years, and Prof. Jan van der Westhuizen, Department of Chemistry at the UFS; front: Ms Kedibone Aphane, MRC. Prof. Swart and Prof. Van der Westhuizen were the leaders of the team who received the award for the development of innovation by a corporate organisation or institution.

Representatives of the South African Medical Research Council (MRC) visited the UFS to recruit students who want to study in the fields of sci-

ence, engineering and technology. To assist with the recruitment, the winners of awards made by the National Science and Technology Forum (NSTF) earlier this year,

made presentations to create an interest amongst students. The UFS had four finalists of whom two were the winners in their respective categories.

Young scientists learn what faculty can offer



Young science lovers gathered in Sasolburg for the annual Sasol TechnoX in August 2008. The faculty's exhibition captured the learners' attention through an interactive representation of the application fields of science. Delegates from the Departments of Mathematics and Applied Mathematics, Chemistry, Zoology and Entomology, as well as UFS Marketing stood ready to answer the questions of the 20 832 learners who attended the event. Pictured here is Theo Viljoen, M.Sc. student in Forensic Entomology, sharing interesting facts regarding insects with learners.

Two UFS academics appointed on the Land Bank Board



Prof. Herman van Schalkwyk (left), Dean: Faculty of Natural and Agricultural Sciences, and Mr Theo Potgieter from the UFS School of Management were appointed on the Land Bank Board in March 2008. Prof. van Schalkwyk was appointed as Director and Deputy Chairperson and Mr Potgieter as Director of the Board. The appointments were made by the Minister of Agriculture and Land Affairs, Ms Lulu Xingwana, and are effective for a period of four years.

UFS extends exchange agreement with USA university



Here are, from the left, front: Dr SK de Datta, Vice-Rector: International Affairs, VT, Prof. Herman van Schalkwyk, Dean of the Faculty of Natural and Agricultural Sciences, UFS, Dr Martin Ntwaeaborwa, senior lecturer at the Department of Physics, UFS; back: Prof. Jim McKenna, Department of Crop, Soil and Environmental Affairs, VT, Prof. Izak Groenewald, Director of the Centre for Sustainable Agriculture and Rural Development at the UFS and responsible for the faculty's international liaison, Dr Michael Bertelsen, VT's international office, Dr Aldo Stroebel, Head: Internationalisation at the UFS and Dr Liesel Herselman, senior lecturer at the Department of Plant Sciences, UFS.

A delegation from the faculty visited the Virginia Tech University (VT) in the USA in June 2008 to confirm and extend the existing student exchange agreements between the two institutions.

During the visit the agreement, which started in 1997, was extended for the next five years. More than 150 students from both institutions have already taken part in this exchange agreement and it is the most successful student exchange agreement that VT is involved in. Although agricultural students from the UFS initially took part in the agreement, it was extended to other departments in the faculty and also to the rest of the UFS.

Itjoriseng Project launched



The faculty launched the Itjoriseng Project on the Main Campus in Bloemfontein in March 2008. The aim of the project is to improve the skills of teachers in the subjects Mathematics and Physical Science for Grades 10–12. "Itjoriseng" is the Sotho word for "sharpen yourself". At the launch were, from the left: Mr Mzamo Jacobs, Director: Curriculum Development for Further Education and Training, Free State Department of Education, Mr Johan Kruger, Faculty Manager, Ms Elna Marais, Chief Education Specialist: Curriculum Development, Free State Department of Education, and Prof. Herman van Schalkwyk, Dean: Faculty of Natural and Agricultural Sciences at the UFS.

2007 Faculty report launched



The faculty once again produced another report in which the various departments and centres highlighted their activities for 2007. The report was so well received that a second edition had to be printed. Here are some of the departmental chairpersons during the launch of the report in June 2008.

Department of

Geography

“Staff members were active in a number of diverse research directions” - Prof. Peter Holmes.



Prof. Peter Holmes.

Overview

The Department of Geography continues to draw students in roughly equal proportions from both the natural sciences and the humanities. The growth in undergraduate student numbers which was a feature of 2007 continued into 2008. Environmental issues appear to be driving a new generation of undergraduates to register for degrees in Geography.

On the Geographical Information Systems (GIS) front, the laboratory has reached its maximum capacity with 39 computers. The department holds a site license for 500 GIS seats, thus accommodating an increasing number of users from outside Geography. Data holdings

were increased to more than 600 GB with the addition of more aerial photographs, satellite images and digital maps of southern Africa. Another significant trend is the number of honours and master's students undertaking research dissertations where aspects of environmental management form the focus. Three students were registered for Ph.D. degrees in 2008.

Dr Tabukeli Ruhiiga joined the Qwaqwa Campus as a lecturer at the start of 2008. Dr Ruhiiga's research focus is on land resources, settlement location, and rural poverty. He is also working on comparative profitability in the small business sector. Staff members were active in a number of diverse research

directions. Prof. Gustav Visser received funding from the National Research Foundation's (NRF) Focus Area Research Grants Programme to support research into second home development in South Africa. This grant made possible research visits to universities in South Africa and abroad. Activities included the presentation of a lecture series on identity-based consumption and urban morphological change at Stellenbosch University, and the presentation of a paper at the Annual Conference of the Royal Geographical Society in London, United Kingdom (UK). Prof. Visser was, for two months, a research visitor at the universities of Umeå (Sweden) and Oulu (Finland), where he presented seminars to doctoral students and departmental staff on South African second home development, urban tourism in Africa, and tourism-led gentrification. He also visited Berlin, Helsinki and Stockholm to gain greater insight into the outcomes of state-led urban regeneration. In October 2008, Prof. Visser and Prof. Lochner Marais from the University of the Free State's (UFS) Centre for Development Support launched an edited collection of research essays entitled: *Spatialities of Urban Change: Selected Themes from Bloemfontein at the beginning of the 21st Century*.

Prof. Peter Holmes presented a paper at the 3rd International Southern Deserts Conference in the Kalahari in September. This was organised by Prof. David Thomas of Oxford University, UK, a leading international authority on southern hemisphere deserts. Prof.

Thomas and Prof. Holmes have undertaken collaborative research investigating dryland landforms in the Western Free State. The Kalahari conference was attended by researchers from South Africa, the UK, Australia and Chile. Prof. Holmes and Dr Charles Barker attended the Southern African Association of Geomorphologists Biennial Conference at the University of Pretoria in September. Prof. Holmes presented a paper on aeolian erosion of Free State drylands, and Dr Barker presented a paper on the use of geomorphometric variables as an aid to water allocation management in non-perennial catchments. Mr Alex Adjei attended the Provincial Tourism Conference in Bloemfontein, where he presented two papers on aspects of tourism in the Free State.

Honours student Leroy du Plessis was invited by the "Suid-Afrikaanse Akademie vir Wetenskap en Kuns" to present findings from his research project on the use of remote sensing to determine sub-surface flowlines at the Akademie's student symposium at the University of Johannesburg.

With regard to community service, Dr Barker presented short courses in GIS to the staff members of the Maluti-A-Phofung Municipality, the Department of Economic, Environmental Affairs and Tourism (Free State Province) and the Centre for Disaster Management. He was also elected a member of the "Suid-Afrikaanse Akademie vir Wetenskap en Kuns." Ms Sheila Vrahimis was appointed by the Provincial Member of the Executive Council (MEC) for Sport, Science and Culture to the Free State Geographical Names Committee. She continued to drive the four-year degree programme module *Concepts of General Science*.

A local field trip was undertaken to Naval Hill, the South Park landfill, Soetdoring Nature Reserve and the UFS Boyden Observatory. Such trips are invaluable in linking

theory to practice, particularly amongst underprepared students. Ms Tobeka Mehloakulu took undergraduate tourism students on a field trip to the Florisbad archeological site. On the Qwaqwa Campus, Dr Hennie Claassen and Mr Alex Adjei took the third-year environmental management students to the site of the Braamhoek hydro-electric power station, while Mr Pululu Mahasa took the first-year students to Golden Gate in the Eastern Free State. Mr Adjei also took the third-year Urban Studies students to Durban and its surrounds.

The Department of Geography maintains a high profile at national level: Prof. Gustav Visser continues to serve as President of the Society of South African Geographers, while Mrs Sandra Brits keeps the society's books.

Prof. Martha Richmond, Director of Environmental Studies at Suffolk University, Boston, United States of America, visited the Qwaqwa Campus in May. She presented a number of lectures in environmental management and biodiversity to staff and students. Community service again featured strongly on the Qwaqwa Campus, with Drs Claassen and Ruhiiga and Mr Adjei offering Integrated Development Planning training to officials and councillors of the Maluti-A-Phofung Municipality, Mr Adjei offering training in Responsible Tourism to local communities in Ermelo, Secunda; Witbank; Nelspruit and Upington, and Dr Ruhiiga facilitating a workshop on IDP and Poverty Alleviation for the Thabo Mofutsanyane District Municipality in KwaZulu-Natal.

A number of staff benefitted from the university's new Strategic Cluster research initiative. Profs Holmes and Visser, Dr Ruhiiga, and Mss Vrahimis and Mehloakulu received funding to initiate and/or support research. It is apparent that this source of funding will become increasingly important in future. ■



During the launch of the book "Spatialities of Urban Change: Selected Themes from Bloemfontein – at the beginning of the 21st Century" are, from the left, front: Mr Malefetsane Mokoena, General Manager: Housing at the Mangaung Local Municipality and one of the co-authors of the book, Mr Amos Goliath, Executive Director: Corporate Affairs at the Mangaung Local Municipality, Ms Rothea van Biljon, Chairperson of the Afrikaanse Handelsinstituut Bloemfontein; back: Prof. Lochner Marais, of the Centre for Development Support at the UFS and editor of the book, and Prof. Gustav Visser, of the Department of Geography at the UFS and editor of the book.



Malawian Ph.D. student, Dr Golden Msilimba, pictured here at the April 2008 graduation ceremony with his supervisor, Prof. Peter Holmes, Departmental Chairperson.

Research outputs

Research articles

Barker, C.H. & De Villiers, G.duT. 2008. 'n Holistiese beskouing van landskapontwikkeling in Geomorgologie: 'n Wetenskapsfilosofiese basis. *Suid-Afrikaanse Tydskrif vir Natuurwetenskap en Tegnologie* 27: 165-82.

Bateman, M.D., Carr, A.S., Murray-Wallace, C.V., Roberts, D.L. & Holmes,

P.J. 2008. A dating intercomparison study on Late Stone Age coastal midden deposits, South Africa. *Geoarchaeology* 23: 715-741.

De Villiers, G. du T., Viljoen, M.F. & Booyesen, H.J. 2008. Aardverwarming en klimaatsverandering met spesifieke verwysing na Suid-Afrika: Enkele perspektiewe. *Suid-Afrikaanse Tydskrif vir Natuurwetenskap en Tegnologie* 27: 294-306.

Holmes, P.J., Bateman, M.D., Thomas, D.S.G., Telfer, M.W., Barker, C.H. & Lawson, M.P. 2008. A holocene - Late quaternary aeolian record from lunette dunes of the western Free State panfield, South Africa. *The Holocene* 18: 1193-1205.

Hoogendoorn, G., Visser, G., Lenka, M., Marais, L., Van Rooyen, D. & Venter, A. 2008. Revitalizing the

Bloemfontein CBD: Prospects, obstacles and lost opportunities. *Urban Forum* 19: 159-174.

Kotze, N. & Visser, G. 2008. Sport tourism: Comparing participant profiles and impact of three one-day events in South Africa. *Africa Insight* 38: 61-72.

Roberts, D.L., Bateman, M.D., Carr, A.S., Murray-Wallace, C. & Holmes, P.J. 2008. Last interglacial fossil elephant trackways in coastal aeolianites, Still Bay, South Africa. *Palaeogeography, Palaeoclimatology, Palaeoecology* 257: 261-279.

Visser, G. 2008. Exploratory notes on the geography of black gay leisure spaces in Bloemfontein, South Africa. *Urban Forum* 19: 413-423.

Visser, G. 2008. The homonormalisation of white heterosexual leisure spaces in Bloemfontein, South Africa. *Geoforum* 39: 1347-1361.

Visser, G. & Kotze, N. 2008. The state and new-build gentrification in central Cape Town, South Africa. *Urban Studies* 45: 2565-2593.

Books

Marais, L. & Visser, G. (eds). 2008. *Spatialities of urban change: Selected themes from Bloemfontein at the beginning of the 21st century*. Stellenbosch: African Sun Media.

Chapters in books

Hoogendoorn, G. & Visser, G. 2008. The evolution of Bloemfontein's Westdene: The changing anatomy of a neighbourhood. In *Spatialities of Urban Change: Selected Themes from Bloemfontein at the Beginning of the 21st Century*, edited by G. Visser & L. Marais. Stellenbosch: African Sun Media. pp. 75-95.

Hoogendoorn, G., Visser, G., Lenka, M., Marais, L., Van Rooyen, D. & Venter, A. 2008. CBD revitalising in Bloemfontein: Prospects, obstacles and lost opportunities. In *Spatialities of Urban Change: Selected Themes from Bloemfontein at the Beginning of the 21st Century*, edited by G. Visser & L. Marais. Stellenbosch: African Sun Media. pp. 35-52.

Marais, L. & Visser, G. 2008. Bloemfontein and its future development: Towards a research agenda. In *Spatialities of Urban Change: Selected Themes from Bloemfontein at the Beginning of the 21st Century*, edited by G. Visser & L. Marais. Stellenbosch: African Sun Media. pp. 183-195.

Marais, L. & Visser, G. 2008. Preface. In *Spatialities of Urban Change: Selected*

Themes from Bloemfontein at the Beginning of the 21st Century, edited by G. Visser & L. Marais. Stellenbosch: African Sun Media. pp. iii-xi.

Visser, G. 2008. The Volksblad Arts Festival: Product, people and impacts. In *Spatialities of Urban Change: Selected Themes from Bloemfontein at the Beginning of the 21st Century*, edited by G. Visser & L. Marais. Stellenbosch: African Sun Media. pp. 135-153.

Visser, G. 2008. Urban tourism and Bloemfontein: Progress and prospects. In *Spatialities of Urban Change: Selected Themes from Bloemfontein at the Beginning of the 21st Century*, edited by G. Visser & L. Marais. Stellenbosch: African Sun Media. pp. 115-134.

Conference contributions

Adjei, A. 2008. *Tourism product development initiatives to support tourism routes in the Free State province*. Paper presented at the Free State Provincial Tourism Conference, Bloemfontein, South Africa. 5 May.

Adjei, A. 2008. *Tourism route development in the Free State province*. Paper presented at the Free State Provincial Tourism Conference, Bloemfontein, South Africa. 5 May.

Barker, C.H. 2008. *Using geomorphometric variables as an aid to managing water allocation in a non-perennial catchment*. Paper presented at the Biennial Conference of the Southern African Association of Geomorphologists (SAAG), University of Pretoria, Pretoria, South Africa. 26-28 September.

Holmes, P.J. & Wiggs, G.F.S. 2008. *Living on the edge: Environmental change in the western Free State, South Africa*. Paper presented at the 3rd Southern Deserts Conference - Kalahari 2008: Climate change and the peopling of the Southern deserts, Molopo Lodge, Kalahari, South Africa. 16-19 September.

Holmes, P.J. & Wiggs, G.F.S. 2008. *Living on the edge: Environmental change in the western Free State, South Africa*. Paper presented at the Biennial Conference of the Southern African Association of Geomorphologists (SAAG), University of Pretoria, Pretoria, South Africa. 26-28 September.

Visser, G. 2008. *Lesbian spaces of sex and desire: The case of Bloemfontein*. Paper presented at the Annual Conference of the Royal Geographical Society and Institute of British Geographers (RGS-IBG), London, UK. 27-29 August.

Staff

Main Campus:

Professor: Prof. Peter Holmes

Associate Professor: Prof. Gustav Visser

Senior Lecturer: Dr Charles Barker

Lecturers: Mss Eldalize Kruger, Tobeka Mehlomakhulu, Sheila Vrahimis

Professional Officers: Mss Sandra Brits, Liesel Cronjé

Qwaqwa Campus:

Associate Professor: Prof. Willie van Zyl (on secondment in 2008)

Senior Lecturer: Dr Hennie Claassen

Lecturers: Dr Tabukeli Ruhuiga, Mr Alex Adjei

Junior Lecturer: Mr Pululu Mahasa

Contact details

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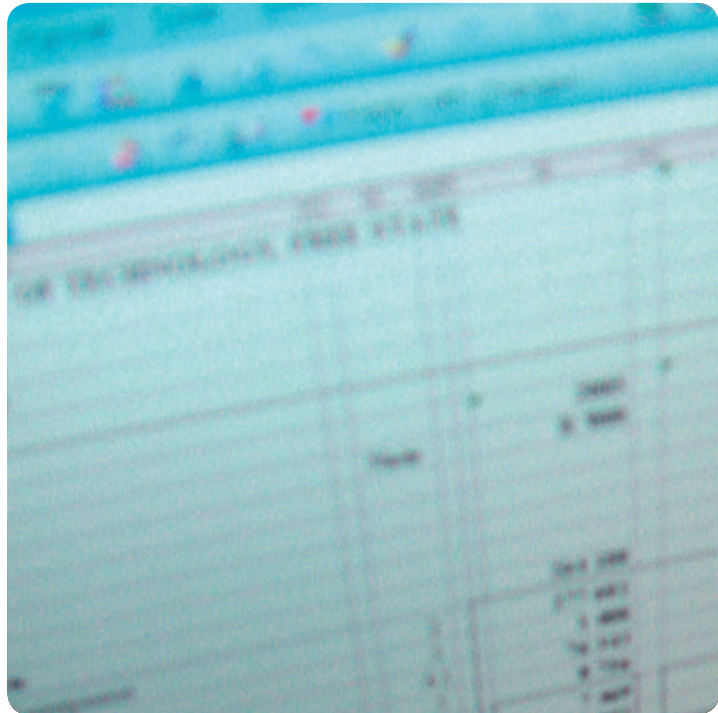
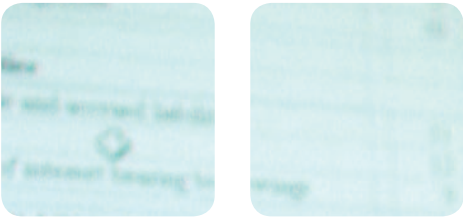
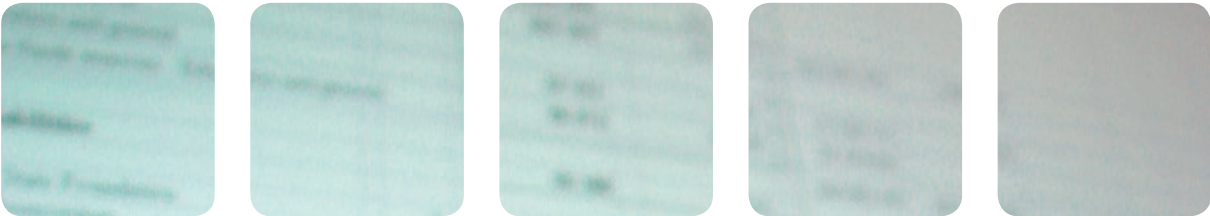
Fax: + 27 51 4013816

E-mail: holmespj.sci@ufs.ac.za

Website: www.ufs.ac.za



Statistical data

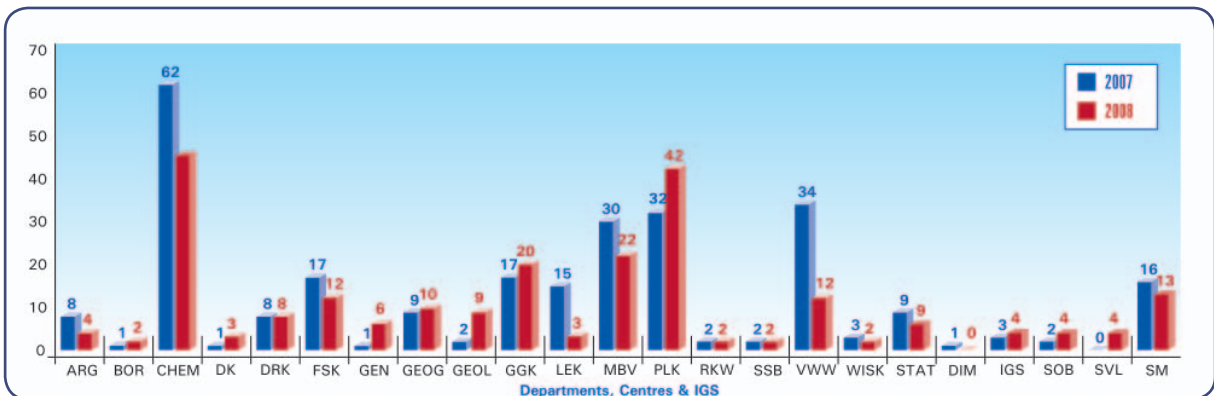


Research outputs: 2007-2008

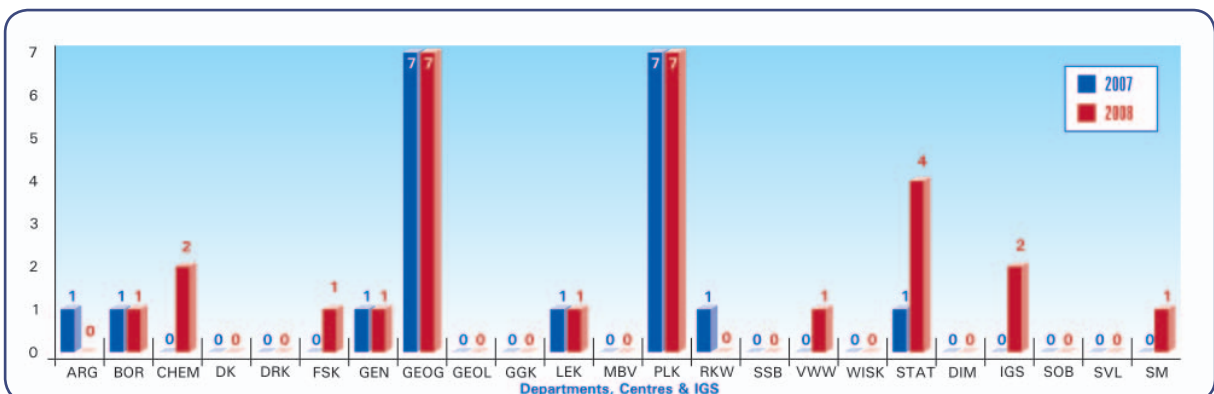
List of abbreviations

Abbreviation	Name	Abbreviation	Name
ARG	Department of Architecture	GGK	Department of Soil, Crop and Climate Sciences
BOR	Department of Quantity Surveying and Construction Management	IGS	Institute for Groundwater Studies
SOB	Centre for Environmental Management	LEK	Department of Agricultural Economics
CEM	Department of Chemistry	MBV	Department of Microbial, Biochemical and Food Biotechnology
SM	Centre for Microscopy	PLK	Department of Plant Sciences
SVL	Centre for Sustainable Agriculture and Rural Development	RKW	Department of Computer Science and Informatics
DK	Dean's Office	SSB	Department of Urban and Regional Planning
DRK	Department of Zoology and Entomology	SRB	Disaster Management Training and Education Centre for Africa (DIMTEC)
FSK	Department of Physics	VWW	Department of Animal, Wildlife and Grassland Sciences
GEN	Department of Genetics	STAT	Department of Mathematical Statistics and Actuarial Science
GEOG	Department of Geography	WISK	Department of Mathematics and Applied Mathematics
GEOL	Department of Geology		

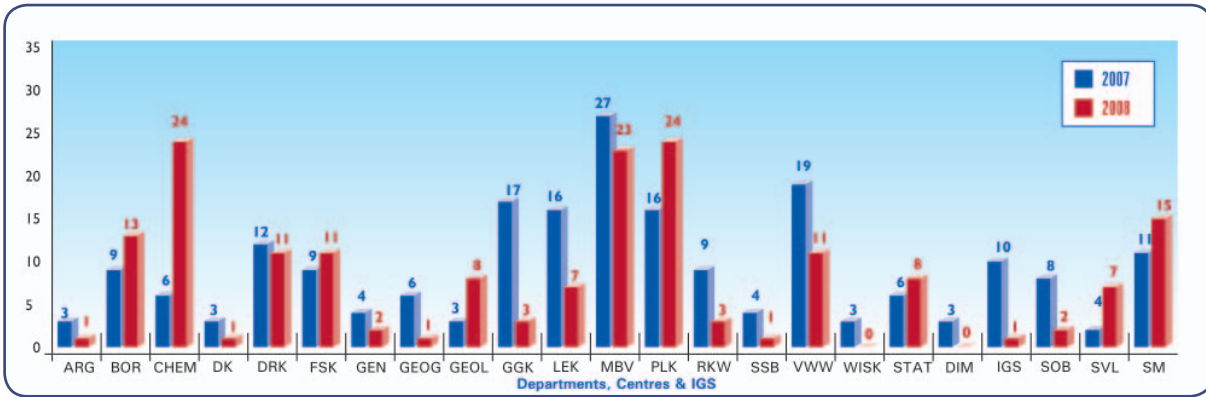
Accredited articles



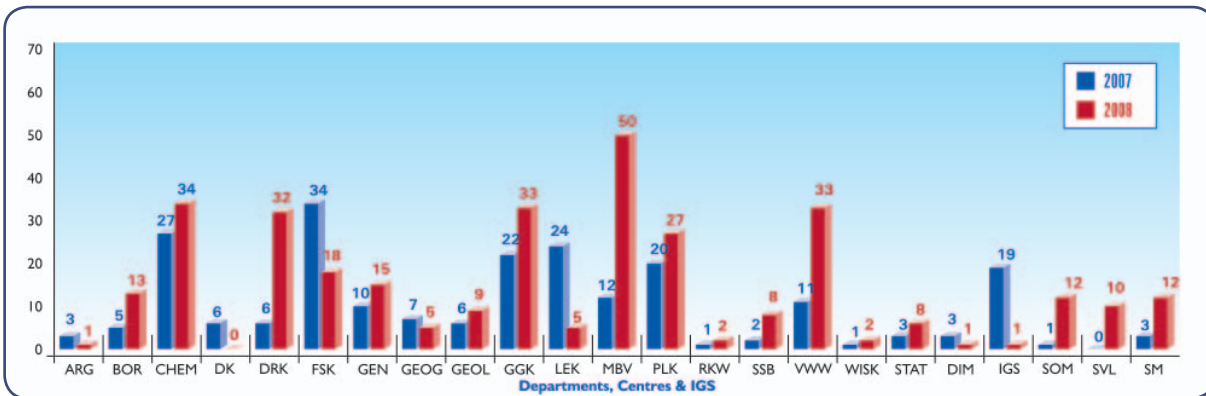
Books



International conferences



Local conferences



Student figures: 2007-2008

Student figures

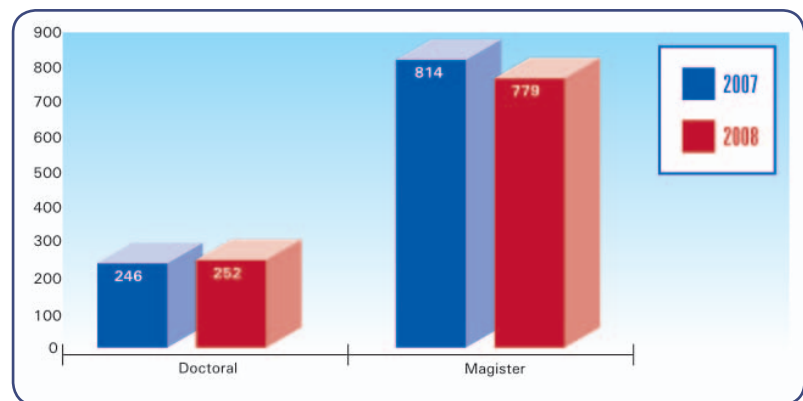
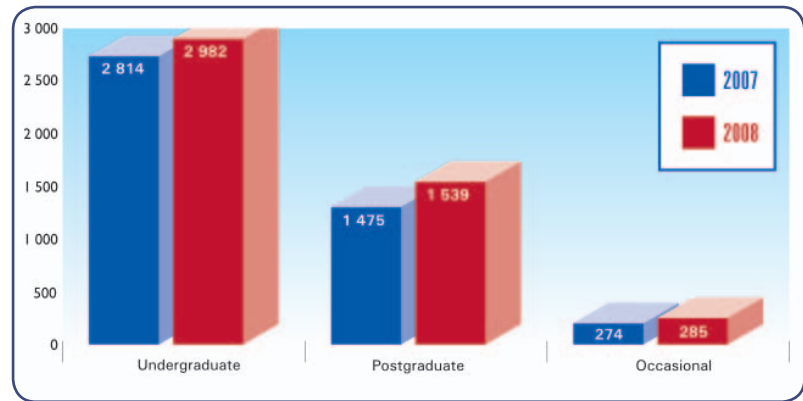
Year	Description	Black	Coloured	Asian	White	Total
2007	Undergraduate	1492	66	38	1218	2814
	Postgraduate	710	41	40	684	1475
	Occasional	230	6	2	36	274
*TOTAL		2432	113	80	1938	4563
2008	Undergraduate	1667	51	37	1227	2982
	Postgraduate	755	40	43	701	1539
	Occasional	260	5	1	19	285
* TOTAL		2682	96	81	1947	4806

International students

Nationality	Year	Year
	2007	*2008
Angola	2	0
Asian countries	20	24
Botswana	17	23
Democratic Republic of the Congo	0	1
European countries	9	10
Lesotho	118	144
Malawi	3	5
Mauritius	2	3
Mozambique	4	7
Namibia	54	65
North America	15	5
Other African countries	47	69
South America	1	0
Swaziland	5	6
Zambia	7	7
Zimbabwe	48	60
Total	352	429

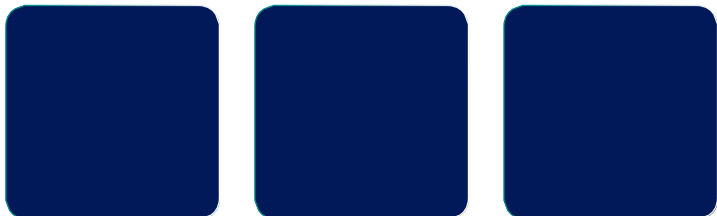
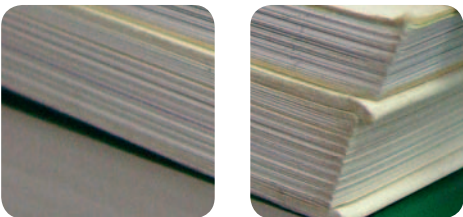
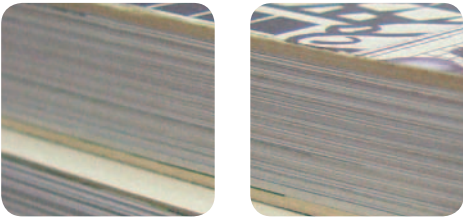
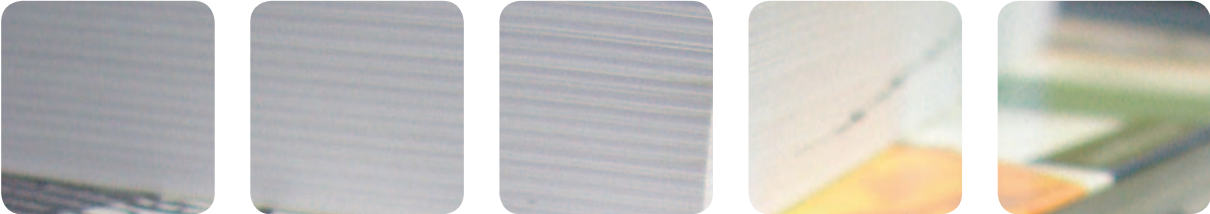
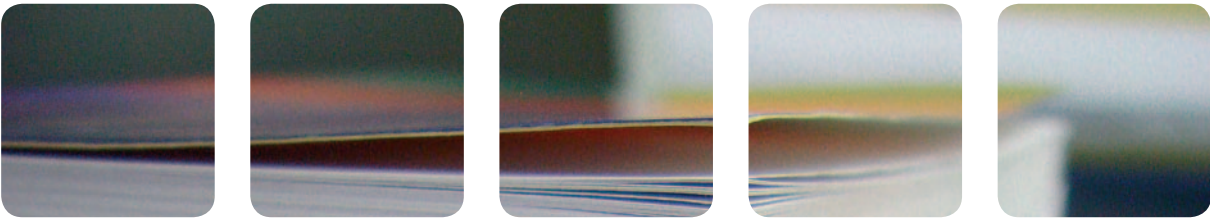
*2008 Final HEMIS figures not available

Comparison for the Faculty of Natural and Agricultural Sciences





Glossary



Glossary

A

- AACC - American Association for Cereal Chemists
 AAACE - Association for the Advancement of Cost Engineering
 ADF - Amsterdam Density Functional Programme
 ADG - Average Daily Grain
 AEASA - Agricultural Economics Association of South Africa
 AEON - the African Earth Observation Network
 AGU - American Geophysical Union
 AI - Artificial Insemination
 ARC - Agricultural Research Council
 ARV - Antiretroviral
 ASC - Architecture Student Conference
 ASAQS - Association of South African Quantity Surveyors
 ASOCSA - Association of Schools of Construction of Southern Africa

B

- BBSRC - Biotechnology and Biological Sciences Research Council
 BMBF - Federal Ministry of Education and Research, Germany

C

- CAA - Commonwealth Association of Architects
 CANSA - Cancer Association of South Africa
 CAB - Centro de Astrobiología
 CED - Centre for Education Development
 CePHMa - Centre for Plant Health Management
 CHESD - Centre for Higher Education Studies and Development
 CHPC - Centre for High Performance Computing
 CIDB - Construction Industry Development Board
 CIOB-SA - Chartered Institute of Building, South Africa
 CSIR - Council for Scientific and Industrial Research Organisation
 CSTA - Cereal Science and Technology Association
 CUT - Central University of Technology

D

- DiMTEC - Disaster Management Training and Education Centre for Africa
 DMISA - Disaster Management Institute of Southern Africa
 DRRW - Durable Rust Resistance in Wheat
 DST - Department of Science and Technology
 DWAF - Department of Water Affairs and Forestry

E

- ECA - European Crystallographic Association
 EGIC - Economic Growth and International Competitiveness
 EMSA - Environmental Management Systems Association
 EMS - Environmental Management Systems
 EPWP - Expanded Public Works Programme

F

- FAO - Food and Agricultural Organisation
 FETWater - Framework Programme for Research Education and Training in Water
 FMP - Facilities Management Programme
 FSRDPP - Free State Rural Development Partnership Project
 FTIR - Fourier Transform Infra Red Spectrometer

G

- FGAP - Facility for Genomics and Proteomics
 GIS - Geographical Information Systems
 GMO - Genetically Modified Organisms
 GRDM - Groundwater Resource Directed Measures
 GSSA - Grassland Science Society of South Africa
 GSSA - Geological Society of South Africa

H

- HCI - Human-computer Interaction
 HRTEM - High Resolution Transmission Electron Microscopy

I

- IAMA - International Food and Agribusiness Management Association
 IAU - International Astronomical Union
 ICACS - International Conference on Atomic Collisions in Solids
 ICC - International Conference on Coordination Chemistry
 ICEC - International Cost Engineering Council
 ICRISAT - International Crops Research Institute for the Semi-Arid Tropics
 ICSU - International Council for Science
 IDC - Industrial Development Corporation
 IGC - International Geological Congress
 IGS - Institute for Groundwater Studies
 IMWA - International Mine Water Association
 INCRoP - Insects on New Crops Programme
 IPMP - Intensive Project Management Programme
 ISI - International Statistical Institute
 ISME - International Society for Microbial Ecology
 IT - Information Technology
 IUIMS - International Union of Microbiological Societies

L

- LPI - Lunar and Planetary Institute
 LRAD - Land Redistribution for Agricultural Development

M

- MCEE - Minnesota Council on Economic Education
 MDC - Maputo Development Corridor
 MEC - Member of the Executive Council
 MNS - Material and Nanosciences Cluster
 MOU - Memorandum of Understanding
 MRC - Medical Research Council
 MSA - Masters in Sustainable Agriculture
 MSSA - Microscopy Society of Southern Africa
 MUCPP - Mangaung University Community Partnership Programme

N

NAMC -	National Agricultural Marketing Council
NASA -	National Aeronautics and Space Administration
NASSP -	National Astrophysics and Space Science Programme
NBN -	National Bioinformatics Network
NCEE -	National Council for Economic Education
NDF -	Neutral Detergent Fibre
NECSA -	Nuclear Energy Corporation of South Africa
NERPO -	National Emergent Red Meat Producers Organisation
NGO -	Non-Governmental Organisation
NRF -	National Research Foundation
NSTF -	National Science and Technology Forum
NWGA -	National Wool Growers' Association

O

OECD -	Organisation for Economic Cooperation and Development
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P

PAQS -	Pacific Association of Quantity Surveyors
PDMS -	Provincial Disaster Management Centre
PRT -	Protein Research Trust

R

RDP -	Redress and Development Programme
RIBA -	Royal Institute of British Architects
RICS -	Royal Institute of Chartered Surveyors
RIEP -	Research Institute of Education Planning
RMMA -	Red Meat Abattoirs Association
RPO -	Red Meat Producers Organisation
RTPI -	Royal Town Planning Institute

S

SA -	South Africa
SAAPMB -	South African Association of Physicists in Medicine and Biology
SAB -	South African Breweries Limited

SABC -	South African Broadcasting Corporation
SACAP -	South African Council for the Architectural Professions
SACPCMP -	South African Council for the Property Valuers Profession
SACPLAN -	South African Council of Planners
SACQSP -	South African Council for the Quantity Surveying Profession
SADC -	Southern African Development Community
SAFA -	South African Feedlot Association
SAFEFE -	South African Foundation for Economic and Financial Education
SAFOI -	South African Fryer Oil Initiative
SAIA -	South African Institute of Architects
SAIM -	Society for Industrial and Applied Mathematics
SAISC -	Southern African Institute of Steel Construction
SANBI -	South African National Biodiversity Institute
SANCID -	South African Commission on Irrigation and Drainage
SANPAD -	South African Netherlands Research Programme on Alternatives in Development
SANSA -	South African National Survey of Arachnida
SAPOA -	South African Property Owners Association
SAPPS -	Symposium of the South African Pecan Producers Association
SAQA -	South African Qualifications Authority
SASA -	South African Statistical Association
SASHS -	Southern African Society for Horticultural Sciences
SASM -	South African Society for Microbiology
SAWMA -	South African Wildlife Management Association
SAWSS -	Southern African Weed Science Society
SCM -	Scientific Computing and Modeling
SEG -	Society of Economic Geologists
SEM -	Scanning Electron Microscope

SLE -	Senior Lecturer Equivalent
SSSSA -	Soil Science Society of South Africa
SWMA -	Southern African Wildlife Management Association

T

TEM -	Transmission Electron Microscope
THRIP -	Technology and Human Resource for Industry Programme

U

UCT -	University of Cape Town
UEC -	Unit for Earth Construction
UFS -	University of the Free State
UJ -	University of Johannesburg
UK -	United Kingdom
UN -	United Nations
UNESCO -	United Nations Educational, Scientific and Cultural Organisation
UNU -	United Nations University
UP -	University of Pretoria
USA -	United States of America
USAID -	United States Agency for International Development
UWC -	University of the Western Cape

W

WCAP -	World Conference on Animal Production
WITS -	University of the Witwatersrand
WRC -	Water Research Commission

