

2014 Fakulteit Natuurwetenskappe Jaarverslag



Die Fakulteit Natuurwetenskappe word in Suid-Afrika, Afrika en op internasionale vlak gerespekteer as 'n toonaangewende kennisvennoot wat 'n aktiewe rol speel in die ontwikkeling van die Suid-Afrikaanse gemeenskap.

Die 2014 Jaarverslag verskaf 'n oorsig van die Fakulteit se aktiwiteite op die gebied van navorsing en innovasie, leer en onderrig en gemeenskapsdiens, asook die navorsingshoogtepunte van elk van ons agt akademiese departemente. Daar is ook inligting oor ons voetspoor wanneer dit kom by samewerking met instansies in Afrika en die res van die wêreld, internasionale erkenning vir ons top navorsers en nagraadse studente, asook die agt navorsingsleerstoele en twee Sentrums van Uitnemendheid in die Fakulteit.

- Aardwetenskappe
- Biochemie
- Chemie en Polimeerwetenskap
- Fisika
- Fisiologiese Wetenskappe
- Mikrobiologie
- Plant- en Dierkunde
- Wiskundige Wetenskappe (Wiskunde, Toegepaste Wiskunde, Rekenaarwetenskap)

Foto: Justin Alberts



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VANUIT DIE DEKAAN SE KANTOOR

Die 2014 jaarverslag van die Fakulteit Natuurwetenskappe het 'n nuwe baadjie aangetrek. Ons vertrou dat hierdie nuwe interaktiewe formaat u 'n meer aangename en interessante leeservaring van al ons aktiwiteite sal bied.

Op die volgende bladsye gee prof. Terry Robinson, Visedekaan: Navorsing, 'n oorsig van die Fakulteit se navorsingsprestasies in 2014. Ons is veral trots op die kwaliteit van die Fakulteit se navorsingsuitsette en die feit dat ons navorsers 'n nuwe hoogtepunt met die aantal navorsingspublikasies wat in 2014 gepubliseer is, behaal het.

Die sukses van ons studente is een van die Fakulteit se hoofprioriteite. Prof. Ingrid Rewitzky, Visedekaan: Onderrig en Leer, verskaf meer inligting oor die vele nuwe benaderings en inisiatiewe in dié verband.

Die Fakulteit se sosiale impak word gereflekteer in ons gemeenskapsinteraksie gedurende 2014. Dit word gevolg deur die departementele verslae met meer inligting oor elke departement se navorsingsuitsette en aktiwiteite.

Soos altyd, is ons veral trots op die prestasies van ons personeel en studente. Prof. Doug Rawlings, voormalige Waarnemende Dekaan van die Fakulteit, en prof. Terry Robinson, Visedekaan: Navorsing, het beide Kansellierstoekennings ontvang ter erkenning van hul voortgesette bydraes tot uitnemende navorsing. Prof. Robinson het ook die Havengaprys vir Lewenswetenskappe van die Suid-Afrikaanse Akademie vir Wetenskap en Kuns ontvang.

Prof. Dave Richardson en prof. Guy Midgley is deur Thomas Reuters as van die mees invloedryke kontemporêre wetenskaplikes in hul spesialisgebiede aangewys. Prof. Marina Rautenbach het die Vroue in Wetenskap-toekenning ontvang, en prof. Len Barbour het die Goue Medalje vir uitstaande navorsing van die Suid-Afrikaanse Instituut vir Chemie ontvang. Prof. André de Villiers is deur *The Analytical Scientist* aangewys as een van die wêreld se "top 40 onder 40" analitiese wetenskaplikes.

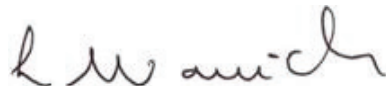
Dit was ook 'n uitsonderlike jaar vir ons Rekenaarwetenskapstudente: Rijnard van Tonder het tweede plek behaal in die 'IBM Beat the Mainframe' kompetisie in New York. Saam met Jacques Marais het hul toepassing ook die eerste plek behaal in die studentekategorie van die Ericsson Mobiele Toepassings kompetisie.

Mnr. Thomas Weighill, 'n nagraadse student in Wiskunde, het die Kanselliersmedalje as die beste finale jaar of nagraadse studente aan die US in 2014 ontvang, sowel as die S_2A_3 medalje vir die beste tesis op Magistervlak.

Hierdie is maar net 'n voorskyn – neem gerus u tyd en geniet die res van die verslag.

Prof. Louise Warnich

Dekaan: Fakulteit Natuurwetenskappe



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NAVORSING EN INNOVASIE

PROF. TERRY ROBINSON, VISEDEKAAN: NAVORSING



Die Fakulteit Natuurwetenskappe handhaaf 'n sterk navorsingsetos en is hoogs suksesvol in die ontwikkeling van relevante navorsings- en nagraadse programme.

Ons programme word deur verskeie sentrums van uitnemendheid en agt navorsingsleerstoele ondersteun. Boonop beskik 95% van ons akademiese personeel oor 'n doktorsgraad en werk hulle saam met navorsers van meer as 700 instellings van regoor die hele wêreld.

Navorsingsuitsette

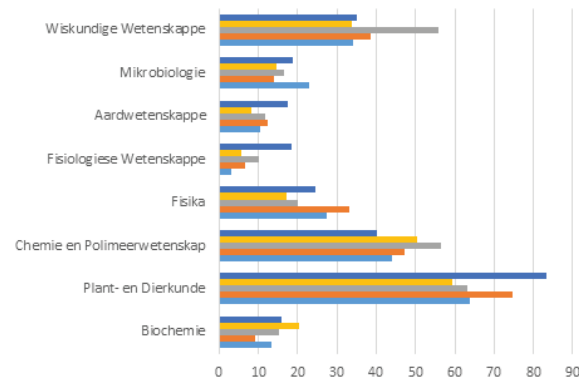
Gedurende 2014 het ons navorsers, studente en ander navorsingsgenote 'n rekord getal navorsingsartikels in geakkrediteerde vaktydskrifte gepubliseer. Die geakkrediteerde publikasie-eenhede vir 2014 is 253,35. Dit is uitstekend wanneer dit vergelyk word met die vorige hoogtepunt van 248,81 in 2012.

'n Analise van die data toon onder meer die volgende:

- Die Fakulteit Natuurwetenskappe se navorsers publiseer en mede-publiseer meestal saam met navorsers van Duitsland, die Verenigde State van Amerika, die Verenigde Koninkryk, Australië, China en Frankryk;
- Op nasionale vlak, werk ons meestal saam met navorsers van die Universiteit van Kaapstad, gevolg deur die Universiteit van Pretoria en die Universiteit van KwaZulu-Natal.

Ons fokus veral op die kwaliteit van ons navorsingspublikasies. 'n Oorsig van publikasies wat gedurende 2013 in die top 20% (en hoër) vaktydskrifte met 'n hoë impakfaktor verskyn het (soos deur die *Web of Science* gedefinieer), het getoon dat die Departemente van Plant- en Dierkunde en Chemie en Polimeerwetenskap buitengewoon goed presteer.

Geakkrediteerde publikasie-eenhede per departement
2010-2014



Die tabel is gebaseer op die geakkrediteerde eenhede vir die Fakulteit Natuurwetenskappe se navorsingsuitsette per jaar vanaf 2010 tot 2014, soos voorgeskryf deur die *Beleid en Prosedures vir die Meting van die Navorsingsuitsette van Openbare Instellings vir Hoër Onderrig* (2003) in Suid-Afrika. Slegs navorsingsartikels in geakkrediteerde vaktydskrifte, eweknie-geëvalueerde boeke en gepubliseerde konferensieverrigtinge word erken. Bron: Afdeling vir Navorsingsontwikkeling (2015) Universiteit Stellenbosch

Nasionale en internasionale samewerking

Die Fakulteit streef voortdurend daarna om samewerking met instellings soos die WNNR, iThemba LABS en ander vooraanstaande universiteite te hernieu en te versterk. Sodanige samewerking ondersteun kapasiteitsbou en bied waardevolle ontwikkelingsgeleenthede vir nagraadse studente. Klik op die kaart vir 'n volledige lys van al die instellings saam met wie ons in 2014 gewerk het.



Navorsing en innovasie

Een van die Fakulteit se belangrikste prioriteite is om 'n kultuur van innovasie onder studente en personeel te vestig. Gedurende 2014 het die Departemente van Mikrobiologie, Biochemie, Plant- en Dierkunde, Fisiologiese Wetenskappe en Chemie en Polimeerwetenskap nege bekendmakings by Innovus, die Universiteit Stellenbosch se vennoot in tegnologie-oordrag, geregistreer. Van hierdie nege het vyf tot die vlak van voorlopige patente-aansoeke en drie tot internasionale aansoeke gevorder.

Patente	2011	2012	2013	2014
Bekendmakings	14	4	5	9
Voorlopige patent-aansoek	9	2	3	5
Internasionale patent-aansoek (PCT)	5	2	2	3
Finale Patent Aansoek (FP)	14	5	0	0

Sentrums van Uitnemendheid en navorsingsleerstoele

Die Fakulteit Natuurwetenskappe huisves twee Sentrums van Uitnemendheid wat deur die Departement van Wetenskap en Tegnologie en die Nasionale Navorsingstigting ondersteun word. Dit is die DWT/NNS Sentrum van Uitnemendheid vir Indringerbiologie en die Suid-Afrikaanse Sentrum vir Epidemiologiese Modelling en Analise. Elkeen van ons agt departemente huisves 'n navorsingsleerstool en/of nasionale sentrum van uitnemendheid (sien tabel regs).

Plant- en Dierkunde

- DWT/NNS Sentrum van Uitnemendheid vir Indringerbiologie

Aardwetenskappe

- SARChI-leerstool in Eksperimentele Petrologie

Biochemie

- SARChI-leerstool in Meganitiese Modelling van Gesondheid en Epidemiologie

Chemie en Polimeerwetenskap

- SARChI-leerstool in Gevorderde Makromolekulêre Argitektuur
- SARChI-leerstool in Funksionele Nanogestruktureerde Materiale

Fisika

- SARChI-leerstool in Fotonika
- Nasionale Instituut vir Teoretiese Fisika (NITHeP)

Mikrobiologie

- SARChI-leerstool in Energieneavorsing
- ERWAT Navorsingsleerstool in Afvalwaterbestuur
- Stellenbosch Universiteit Water-instituut

Wiskundige Wetenskappe

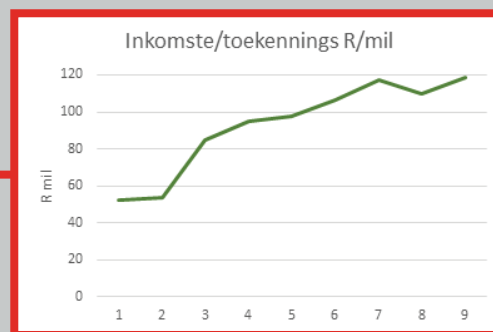
- SARChI-leerstool in Wiskundige en Teoretiese Fisiese Biowetenskappe
- DWT/NNS Sentrum vir Epidemiologiese Modelling en Analise

Befondsing

Die meeste van die Fakulteit se fondse is afkomstig van die Nasionale Navorsingstigting (38,4%) en statutêre rade (51%).

Het u geweet ?

- Universiteit Stellenbosch het die tweede hoogste aantal NNS-geëvalueerde navorsers in Suid-Afrika
- Van die 342 NNS-geëvalueerde navorsers by die US, is 106 in die Fakulteit Natuurwetenskappe
- 95% van ons akademiese personeel beskik oor 'n PhD



FOKUS OP NAGRAADSE STUDIES

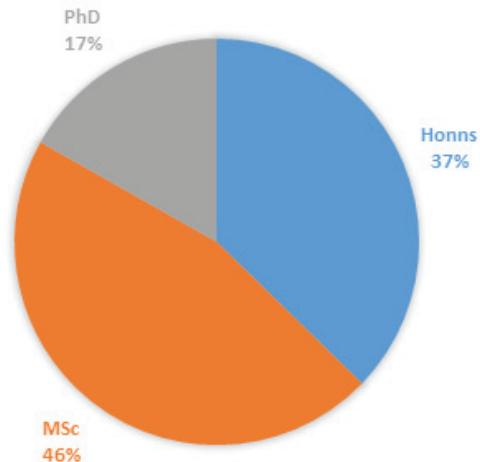
Die Fakulteit bied opleiding van hoogstaande kwaliteit aan byna 700 primêr voltydse nagraadse studente. Dié studente se navorsing word ondersteun deur spesialis navorsers, 'n uitgebreide infrastruktuur en tegniese fasiliteite.

Gedurende 2014 het altesaam 282 nagraadse studente gegradueer, waaronder 128 honneurs-, 112 MSc- en 42 PhD-studente. Byna 50% van ons Phd-gegradueerdes het hul graad binne drie jaar voltooi.

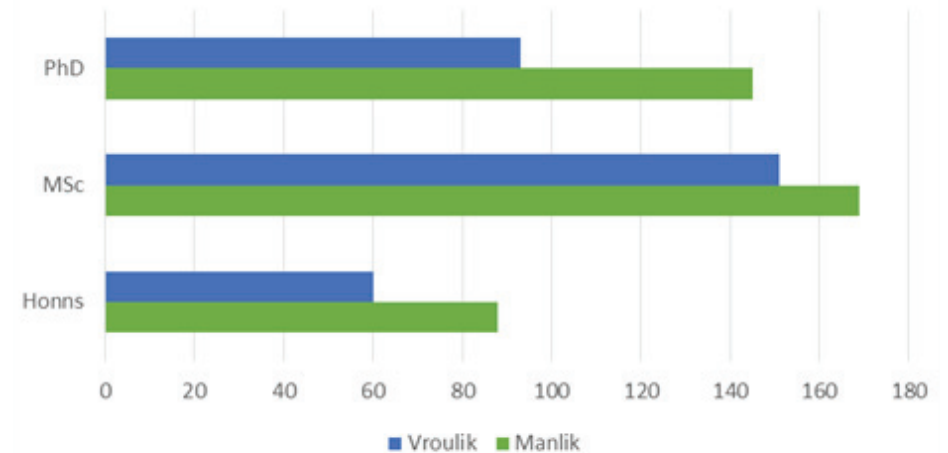
Ons het veral sukses behaal met die werwing van nagraadse studente en nadoktorale genote vanuit Afrika en ander lande. Die Fakulteit Natuurwetenskappe huisves tans 91 postdoktorale genote van Suid-Afrika (46), Afrika (13) en die res van die wêreld (32).

Die totale aantal nagraadse studente het met 4% toegeneem van 618 in 2013 tot 678 in 2014. Die verhouding van wit tot Swart/Bruin/Indiër (SBI) bly in die omgewing van 60% wit tot 40% SBI.

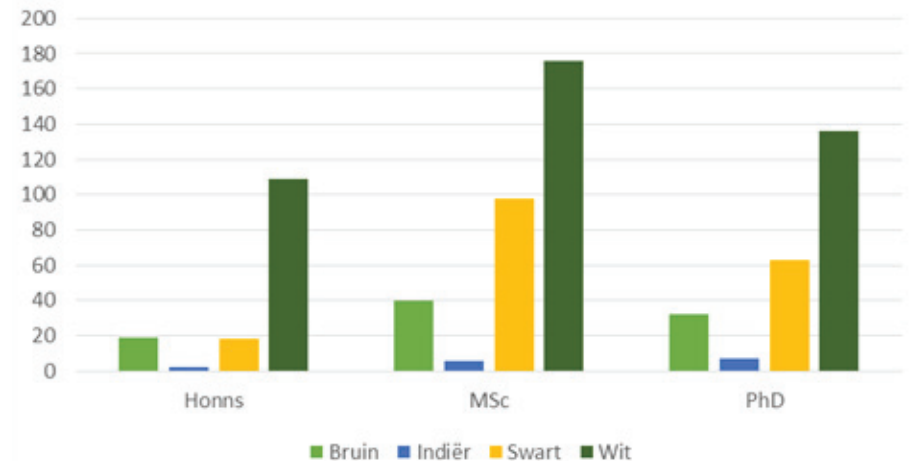
NAGRAADSE GRADUANDI 2014



2014 Geslagsprofiel van nagraadse studente



2014 Nagraadse studente per ras



NASIONALE EN INTERNASIONALE ERKENNING

VERSKEIE VAN ONS NAVORSERS EN NAGRAADSE STUDENTE HET OP NASIONALE, SOWEL AS INTERNASIONALE VLAK ERKENNING GEKRY VIR HULLE NAVORSING VAN HOOGSTAANDE GEHALTE WAT IN 2014 GEPUBLISEER IS.



Prof. Dave Richardson (links), direkteur van die DWT-NNS Sentrum van Uitnemendheid in Indringerbiologie, en **Prof. Guy Midgley** van die Departement Plant- en Dierkunde is ingesluit in die 2014 Thomson Reuters Highly Cited Researchers se lys van die mees invloedryke hedendaagse navorsers in hulle onderskeie vakgebiede. [Lees meer](#)



Prof. André de Villiers van die Departement Chemie en Polimeerwetenskap het die 2014 LCGC Emerging Leader in Chromatography Award ontvang vir grensverskuiwende werk op die gebied van die chemiese karakterisering van komplekse mengsels. [Lees meer](#)



Prof. Len Barbour, 'n eksperimentele chemikus, het die Suid-Afrikaanse Chemiese Instituut (SACI) se Goue Medalje gewen as erkenning vir sy uitstaande bydrae tot bogenoemde veld. Prof. Barbour het ook 'n DSc-graad verwerf gegrond op twintig jaar se navorsing wat gefokus het op die ontrafeling van ongewone verskynsels in kristalle. [Lees meer](#)



Prof. Marina Rautenbach van die Departement Biochemie is vereer as 'n uitstaande vroulike wetenskaplike in die kategorie vir Natuurwetenskappe en Ingenieurswese van die 2014 Suid-Afrikaanse Vroue in die Wetenskap-toekenning (WISA). [Lees meer](#)



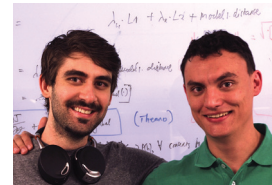
Prof. Doug Rawlings (links) en prof. Terry Robinson het Kanselierstoekennings vir volgehoue navorsingsuitnemendheid aan die Universiteit Stellenbosch ontvang. Prof. Robinson het ook die Havenga Prys vir Lewenswetenskappe van die Suid-Afrikaanse Akademie vir Wetenskap en Kuns ontvang.

[Lees meer](#)



Dr. Sophie von der Heyden van die Departement Plant- en Dierkunde is verkies as 'n Jong Genoot van die Akademie vir Wetenskap vir die Ontwikkelende Wêreld (TWAS). Hierdie eer val navorsers van ontwikkelende lande te beurt wat die potensiaal het om toekomstige leiers op hul navorsingsgebiede te word.

[Lees meer](#)



'n MSc Rekenaarwetenskap-student **Rijnard van Tonder** (regs) was 'n naaswenner in die 'IBM Beat the Mainframe' kompetisie wat in New York plaasgevind het. Saam met **Jacques Marais** het hy ook 'n toepassing ontwikkel, genaamd WorkMode, wat die wen-inskrywing was in die kategorie vir studente van die Ericsson-kompetisie vir Mobiele Toepassings. [Lees meer](#)



Thomas Weighill (regs), 'n MSc-student in Wiskunde, het die US Kanseliermedalje gewen, sowel as die S_2A_3 medalje vir die mees uitstaande navorsingstesis op MSc-vlak in die natuurwetenskappe, ingenieurswese en mediese wetenskappe. Sy MSc-tesis met 'n finale punt van 97% is eenparig, sonder enige voorgestelde veranderings deur drie eksterne internasionale eksaminators aanvaar. Sy studieleier was **Prof. Zurab Janelidze** (links).

[Lees meer](#)

LEER EN ONDERRIG

PROF. INGRID REWITZKY, VISEDEKAAN:
LEER EN ONDERRIG

Die Fakulteit Natuurwetenskappe is verbind tot die opleiding van jong wetenskaplikes ter ondersteuning van die Suid-Afrikaanse regering se inisiatief om die kennisbasis van ons gemeenskap uit te brei, spesifiek op die gebiede van wetenskap en tegnologie.

Ons programme is ontwerp om nie net graduandi vir die arbeidsmark voor te berei nie, maar ook studente toe te rus met die nodige kennis en vaardighede om nagraadse studieprogramme te kan volg. In hierdie verband het ons verskeie strategieë en planne geïnisieer om studentesukses op voorgraadse en nagraadse vlak te verbeter, om studentediversiteit in terme van ras en geslag te vergroot, en om die nuutste inligtingstegnologieë in te span om leer en onderrig en studentebetrokkenheid te verbeter.

Danksy bogenoemde inisiatiewe het ons oor die laaste dekade 'n konstante opwaartse tendens getoon in studentediversiteit, en voorgraadse studente wat in die sisteem bly. Daar is egter steeds talle transformasie-uitdagings.

Studentediversiteit

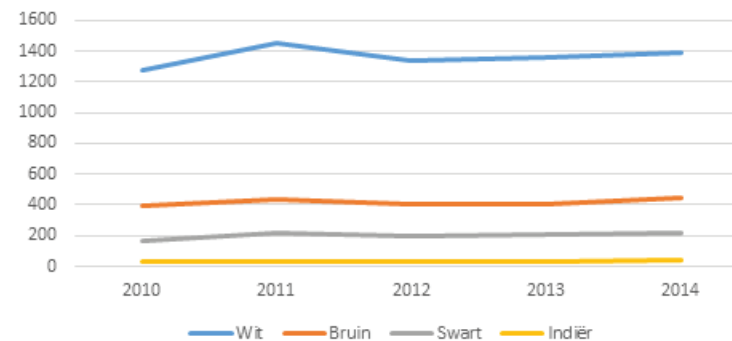
Met 'n terugblik op 2014, sien ons dat ons die hoogste persentasie ooit (34,8%) eerstegerasie Swart, Bruin en Indiërstudente ingeneem het. Dit is die gevolg van 'n inisiatief wat in 2013 begin is om diversiteit te verhoog deur die getal werwingsbeurse te vermeerder van 41 in 2012, na 181 in 2014. Dit het tot gevolg gehad dat 107 gewerfde diversiteitskandidate in 2014 geregistreer het (vergeleke met 34 in 2012). In 2015 sal die Fakulteit 190 werwingsbeurse aanbied.



Ten einde ons doelwit van 40% diversiteitsstudente op voorgraadse vlak teen 2019 te kan bereik, ondersoek ons werwingsgeleenthede in samewerking met die Sentrum vir Studentewerwing en deur aktiwiteite soos die jaarlikse Maties Natuurwetenskappe Winterweek en ander departementele uitreikaktiwiteite. Op nagraadse vlak het die persentasie diversiteitsstudente toegeneem van 35,8% in 2010, tot 38,7% in 2014.

Ons toon ook vordering i.t.v. geslagsamestelling. Die totale getal vroulike studente — voorgraads sowel as nagraads — het toegeneem van 49,8% in 2009 tot 51,7% in 2014.

Voorgaadse studente demografiese profiel
2010-2014



Sedert 2010 toon die Fakulteit Natuurwetenskappe 'n konstante opwaartse kurwe t.o.v. studentediversiteit.

Studentesukses

Om die sukses van voorgraadse studente te verseker, bly 'n voortdurende uitdaging. Die gemiddelde slaagkoers in die Fakulteit Natuurwetenskappe het verbeter van 76,6% in 2008 tot 82,33% (2013) en 80,67% in 2014. Ons is egter bekommerd oor die klein persentasie studente wat hulle graad binne drie jaar voltooi. Daadwerklike pogings is aangewend om studentesukses in kritieke kursusse te verbeter, wat die aanstel van tutors en onderrig-assistente ingesluit het, asook gedifferensieerde tutoriaalondersteuning om voorsiening te maak vir eerstejaars se verskillende vlakke van leergereedheid. Die mikpunt is om die nodige studie- en leervaardighede gedurende die eerste jaar te ontwikkel om sodoende studente in staat te stel om onafhanklike leerders te word.

Leesvaardighede en begripsvermoë is noodsaaklik vir akademiese sukses. In 2013 is strategiese fondse bekom om die gebruik van 'n webgebaseerde leesprogram te ondersoek wat ten doel het om studente se lees-, begrips- en skryfvaardighede te verbeter. Hierdie leesprogram sal vanaf 2015 oor die volgende twee jaar in die Wetenskapkommunikasievaardigheidskursus geïmplementeer word.

Die Fakulteit is in die proses om die US se taalstrategie te implementeer waarvolgens al ons programme in Engels gevolg sal kan word terwyl die persentasie van 'n program wat in Afrikaans gevolg kan word, bo 60% sal wees.

Leer en Onderrig

Tydens die Fakulteit Natuurwetenskappe se maandelikse Leer en Onderrig Gespreksforum, sowel as die jaarlikse werksessie word 'n meer studentgerigte benadering tot leer ondersoek, asook die inkorporering van IT en ander sosiale mediaplatforms om leer, onderrig en assesseringsaktiwiteite te verbeter. Sedert 2013 kry die Fakulteit 'n onderrigtoelaag van die Departement van Hoër Onderwys en Opleiding vir onderrigontwikkeling. Laasgenoemde word aangewend om potensiele toekomstige akademië te identifiseer vanuit die nagraadse kohort en hulle te betrek in assesseringsmetodologie, gemengde leer (*blended learning*), die gebruik van inligting en kommunikasietegnologie (IKT), die herontwerp van modules en die ontwikkeling van nuwe benaderings vir die bevordering van studentebetrokkenheid.

[Lees meer](#)



Groepwerk gedurende Fisika-tutoriale het skielik baie meer pret geword nadat Fisika-dosente Prof. Brandon van der Ventel en prof. Richard Newman iPads in die vergelyking ingestel het. Core Group, gemagtigde verspreider van Apple-produkte in Suid-Afrika, en DigiCape, 'n plaaslike handelaar in Apple-produkte, het die projek ondersteun deur 17 iPads beskikbaar te stel vir die duur van die projek. Foto: Wiida Fourie-Basson

Uitnemende Onderrig

Eerstejaar-toppresteerders het verskeie van ons dosente erkenning gegee vir laasgenoemde se bydraes tot hul akademiese sukses in 2013. Die dosente is toe uitgenooi na die Rectorsdinee vir toppresteerder-studente wat aangebied is deur die Eerstejaarsakademie van die Universiteit Stellenbosch.



Dr. Marietjie Lutz (middel) van die Departement Chemie en Polimeerwetenskap is deur twee studente vereer: Me Maryke Botha (BAgric) (links) en Me Jana Botha (BSc).

“Vir die eerste keer, sover as wat ek kan onthou, is chemie vir my aangebied op 'n wyse wat ek kon verstaan.” – Maryke Botha

“Jy het 'n buitengewone manier van verduidelik en jou vermoë om die handboek op te som in gegronde, omvattende notas is in 'n neutedop: prysenswaardig.” – Jana Botha



Prof. Ed Jacobs (Departement Chemie en Polimeerwetenskap) saam met eerstejaar-ingenieurstudent Mnr. Kwazi Frank Dlamini.

“Jou nederigheid en die geduld wat jy met 'n student het, is al wat ek nodig gehad het om met selfvertroue te doen wat ek doen, en dit het my aangespoor om beter te wil doen.” – Kwazi F Dlamini

Dr. Maritha le Roux
(Departement Chemie en Polimeerwetenskap)

“Ek glo die band tussen dosent en student is belangrik en vir beide voordelig... Deur jou onderrigmetodes, geduld, vriendelikheid en toeganklikheid kon ek my doelwitte en sukses behaal.”

– Celeste de Kock

Dr. Karin-Therese Howell
(Afdeling: Wiskunde)

“In ons Wiskunde-klasse het ons nie net wiskundige limiete geïnterpreteer nie – jy het ons ook gemotiveer om bo ons omstandighede uit te styg en ons persoonlike suksesgrense te bereik.” – Aldu Duminy

Prof. Lynette van Zijl
(Afdeling: Rekenaarwetenskap)

“Jou entoesiasme en passie vir rekenaarwetenskap wat gedurende lesings deurgekom het, is aansteeklik en het 'n groot invloed op my ingesteldheid teenoor die vak gehad.” – Elrich Groenewald

Prof. Alex Valentine
(Departement Plant- en Dierkunde)

“Jy het my laat beseft dat ek nie ingewikkelde werk of terminologie hoef te vrees nie, maar dit eerder moet sien as 'n geleentheid om myself uit te daag en iets nuuts te leer oor die wêreld rondom ons.” – Alistair Galloway

Prof. Florian Breuer
(Afdeling: Wiskunde)

“Ek dink die rede waarom jy bo ander dosente uitstaan, is omdat jy baie effektief humor, voorbeelde, en laasgenoemde se verhouding tot die werklike lewe in jou lesings inkorporeer.” – Chris van der Westhuizen

Dr. Gareth Arnott
(Departement Chemie en Polimeerwetenskap)

“In al die lesings wat Dr. Arnott aangebied het, was hy altyd intellektueel stimulerend en het hy altyd die klas betrek – kwaliteite wat na my mening van onskatbare waarde vir 'n dosent is.”

GEMEENSKAPSINTERAKSIE



Chemie se uitreikinisiatief

Die Universiteit Stellenbosch se Chemie-uitreikinisiatief (SUNCOI) het twee werksessies aangebied – die werksessies genaamd “Practical with Purpose” vir graad 10- tot 12-leerders, en “Teaching the teacher the nuts and bolts of chemistry” vir graad 10-onderwysers. SUNCOI is in 2013 begin deur Dr. Rehana Malgas-Enus en Prof. Klaus Koch om die onderrig en leer van chemie-praktika by voorheen benadeelde skole te bevorder.

[Lees meer](#)



Fisika se jaarlikse uitreiktoer

Nagraadse studente in Teoretiese en Kernfisika het die sesde jaarlikse uitreiktoer onderneem al met die Tuinroete langs. Die studente het basiese beginsels van fisika, soos byvoorbeeld fosforesensie en fluoresensie, optiese kommunikasie en nie-Newtoniese vloeistowwe aan ongeveer 400 leerders by nege skole gedemonstreer. Hierdie inisiatief word geborg deur die studentetak van die Optiese Vereniging van Amerika (OSA). Op die foto van links na regs, is Ruan Viljoen, Zina Ndlovu, Kevin Li, Erasmus du Toit, Paul Williams, Janusz Meylahn, Vernon Chisapi, Hein Fourie, Catherine Pfukwa, Bart Smit en Rikus Groenewald.



Leer meer van biodiversiteit

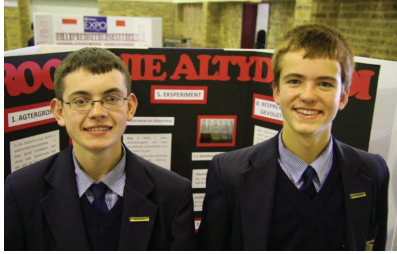
Die limbovane projek het op 1 Augustus 2014 deelgeneem aan die Wes-Kaapse Onderwysdepartement se loopbaan-ekspo by die Laerskool Overberg in Caledon. 'n Kompetisie waarin verskillende mierspesies onder 'n mikroskoop geïdentifiseer moes word, het leerderinteraksie bevorder en 'n nuuskierigheid in insek-morfologie by hulle aangemoedig. limbovane is 'n langtermyn moniteringsprojek wat fokus op mierdiversiteit in verskillende natuurlike en aangepaste landskappe en betrek opvoeders en leerders van sekondêre skole. Foto: Dorette du Plessis

[Lees meer](#)



Ons maak gereed vir die Wiskunde Olimpiades

Afgevaardigdes uit Suid-Afrika, Botswana en Zimbabwe het deelgeneem aan die jaarlikse Wiskunde Olimpiade-opleidingskamp wat in Desember 2014 aangebied is deur die Afdeling Wiskunde. Dit is die eerste gedeelte van die opleidings- en keuringsprosedure vir Suid-Afrikaanse spanne wat deelneem aan die Pan-Afrikaanse en Internasionale Wiskunde Olimpiades. Prof. Stephan Wagner en nagraadse student Me. Desislava Nikolov het ook tweeweklikse klasse in Stellenbosch aangebied vir belangstellende leerders, terwyl die Afdeling Wiskunde opleidingsessies aangebied het vir die Boland-spanne wat op 13 September 2014 aan die Suid-Afrikaanse Wiskunde-spankompetisie deelgeneem het.



Eskom Ekspo vir Jong Wetenskaplikes

Verskeie van die Fakulteit Natuurwetenskappe se personeel en nagraadse studente tree jaarliks as vrywillige projekbeoordelaars op by die Stellenbosch-streekskompetisie van die Eskom Ekspo vir Jong Wetenskaplikes. Die boekprys (geborg deur die (S•I•B) DWT-NNS Sentrum vir Uitnemendheid in Indringerbiologie) vir die beste junior navorsingsprojek in die omgewingswetenskappe, is by die 2014 Eskom Ekspo vir Jong Wetenskaplikes toegeken aan Charl-Henri Schoeman en Henko van Wyk, graad 9-leerders van Curro Langebaan Privaatskool.

[Lees meer](#)



Maties Natuurwetenskappe Winterweek

Die Maties Natuurwetenskappe Winterweek gee aan leerders wat geïnteresseerd is in 'n loopbaan in die natuurwetenskappe die geleentheid om meer uit te vind oor die studieprogramme wat die Fakulteit Natuurwetenskappe aanbied, die onderskeie vakdissiplines en die beroepsgeleenthede wat in hierdie wetenskapsvelde beskikbaar is. Verskeie van die Fakulteit se navorsers het deelgeneem aan die populêre “Afspraak met 'n wetenskaplike”, 'n geleentheid waartydens die leerders professionele wetenskaplikes uit die industrie en akademie ontmoet.

[Lees meer](#)

Ander uitreikaktiwiteite

- Die Afdeling Rekenaarwetenskap het 'n eendaagse inleidende kursus tot Python aangebied vir leerders van Hoërskool Stellenbosch.
- Dr. Rehana Malgas-Enus het 125 hoërskoolleerders van 25 voorheen benadeelde skole toegesprek gedurende die Vroue in Wiskunde Konvensie wat deur die Wetenskapsleersentrum by die Universiteit van Wes-Kaapland aangebied is.
- Dr. Katherine de Villiers en Me. Varia Nikolayenko het vir leerders en onderwysers van die Weskus Onderwysdistrik praatjies aangebied oor die toepassing van kristallografie en sinkrotrons in die wetenskap van vandag gedurende die Nasionale Wetenskapsweek.
- Prof. Nox Makunga het 'n lesing aangebied by die Stellenbosch Forum, sowel as 'n praatjie gelewer oor wetenskapskommunikasie by Science Fridays @Stellenbosch.
- Prof. Guy Midgley was in Desember 2014 voorsitter van die sessie oor gemeenskapsinteraksie gedurende die 2de Konferensie oor Wêreldwye Verandering wat deur die Nelson Mandela Metropolitaanse Universiteit aangebied is. Hy het ook verskeie media-onderhoude gedoen op Wêreld Omgewingsdag.
- Wiskunde-studente het op 23 Augustus 2014 meegeding teen 200 studente van 10 universities in die derde Suid-Afrikaanse Tersiêre Wiskunde Olimpiade. Terwyl die kompetisie deur die Universiteit van Kaapstad gedomineer is, het US studente Petri-Johan Last (Ingenieurswese) die vierde plek behaal en drie Wiskunde-studente was onder die top 20.
- Die Afdeling Wiskunde was nou betrokke by die Internasionale Wiskunde Olimpiade wat vir die eerste maal in Suid-Afrika plaasgevind het. Hulle is Prof. Florian Breuer (koördineerder), Prof. Stephan Wagner (lid van die komitee wat probleme selekteer en probleemstellingskaptein) en Prof. Dirk Laurie (hoofkoördineerder), asook verskeie nagraadse studente.

DEPARTEMENT PLANT- EN DIERKUNDE

DIE DEPARTEMENT PLANT- EN DIERKUNDE IS 'N LEIER OP DIE VAKGEBIED VAN EVOLUSIONÊRE BIOLOGIE EN FOKUS SPESIFIEK OP DIE UNIEKE NAVORSINGSGELEENTHEDE WAT AFRIKA SE BIODIVERSITEIT AAN ONS BIED.

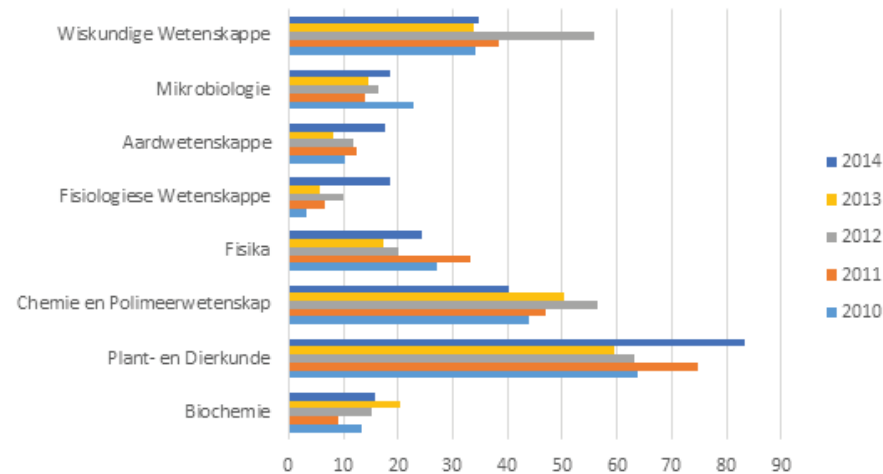
Navorsingsbelange

Diere evolusionêre ekologie & fisiologie	Evolusionêre ekologie	Plant-dier wisselwerkings
Gedragsekologie	Kaapse Flora	Indringerbiologie
Ekofisiologie	Evolusionêre genomika	Mariene navorsing
Plantfisiologie & voedingswaarde	Herpetologie & funksionele biologie van gewerwelde diere	Globale verandering ekologie
	Medisinale plant biotegnologie	

Navorsingsuitsette

Die Departement het daarin geslaag om navorsingsuitsette na 176 artikels in geakkrediteerde vaktydskrifte te verhoog. Dit is aansienlik meer as die 133 artikels in 2012 en 140 artikels in 2013. Die Fakulteit Natuurwetenskappe se geouditeerde navorsingsuitsette vir die publikasiejare 2010 tot 2014 toon dat die Departement Plant- en Dierkunde bestendig goed vaar.

Geakkrediteerde publikasie-eenhede per departement
2010-2014



Publikasielys

Navorsers met NNS-graderings

Personeellys

Kontak ons

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Aardwetenskappe

Chemie en Polimeerwetenskap

Biochemie

Wiskundige Wetenskappe

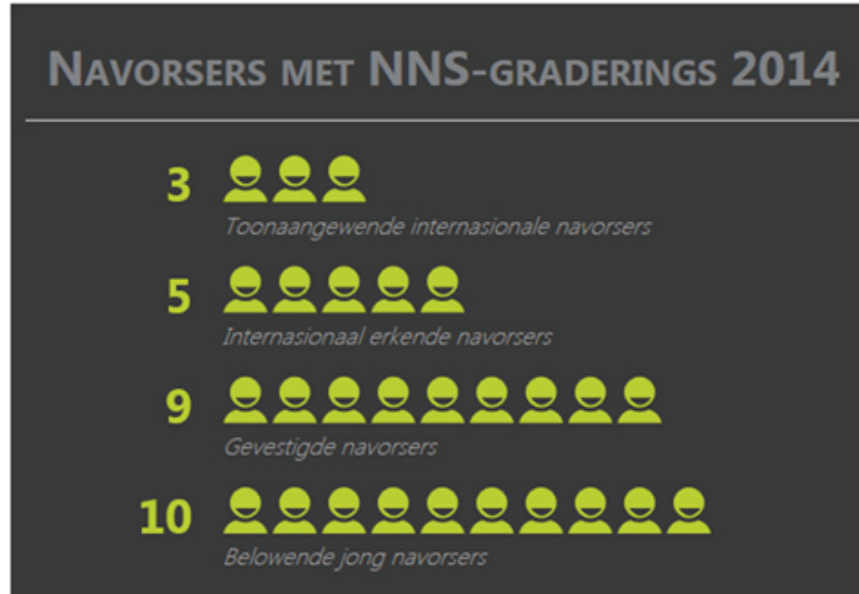
Mikrobiologie

Fisika

Fisiologiese Wetenskappe

Navorsers met NNS-graderings

Meer as 70% van ons akademiese personeel het NNS-graderings en ses van die 27 is vroulike navorsers. Dit sluit navorsingsgenote en afgetrede akademici in.



Nasionale en internasionale samewerking

Samewerking en deelname aan nasionale en internasionale wetenskaplike programme is een van die Departement se grootste prioriteite. Gedurende 2014 het ons met 330 instellings in meer as 40 lande saamgewerk – dit sluit in mede-outeurskap van navorsingsartikels, navorsingsprojekte en die uitruil van studente en personeel. Net in Afrika alleen het ons bande met 52 verskillende instellings. Internasionaal het die Departement grootliks saam met navorsers in die Verenigde State van Amerika (54 instellings), die Verenigde Koninkryk (37), Frankryk (21), Australië (18) en Duitsland (15) gewerk.



Bilaterale projekte

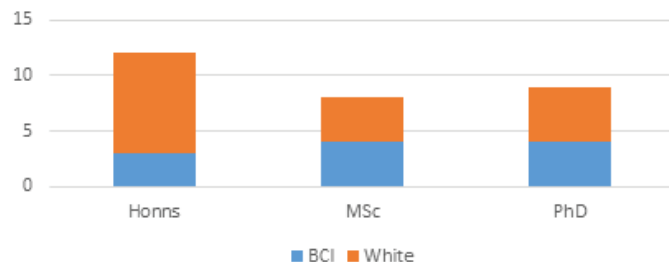
Prof. Conrad Matthee het navorsingsfondse ontvang as deel van die bilaterale ooreenkoms tussen Suid-Afrika en Frankryk vir die Biodiversiteit en Globale Verandering in Suider-Afrika projek (2013-2015). Dr. Tammy Robinson is betrokke by die SA-Angola bilaterale ooreenkoms (2013-2015) – die doel daarvan is om met behulp van radioisotoop kartering die sedimentasie van kusgebiede te ondersoek.

Fokus op nagraadse studente

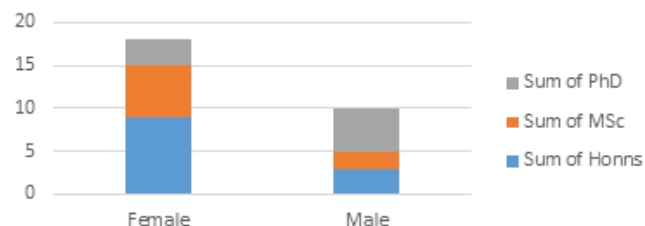
In 2014 het die Departement 'n groep van 85 nagraadse studente gehad – 18 Honneurs-, 39 MSc- en 29 PhD-studente. Teen die einde van die jaar het 12 Honneurs-, agt MSc- en agt PhD-studente gegradueer. Nagraadse studente het verskeie voordragte en plakkaats by nasionale en internasionale konferensies gelewer. Drie van hulle het toekennings ontvang:

Mnr. Chris Broeckhoven	Beste PhD voordrag, 12de Konferensie van die Herpetologie Vereniging van Afrika
Dr. Romina Henriques	Beste voordrag, Universiteit Stellenbosch se jaarlikse postdoktorale navorsingskonferensie
Me. Sara Andreotti	Finalis in die US se 'New Voices in Science' kompetisie in die kategorieë beste voordrag, beste geskrewe artikel en beste foto (wenner)

Diversiteitsprofiel van nagraadse graduandi in 2014



Geslagprofiel van nagraadse graduandi in 2014



Postdoktorale genote

Die Departement het 16 postdoktorale genote vanaf Suid-Afrika, Afrika, Europe en die Verenigde State van Amerika gehuisves.

DEPARTEMENT AARDWETENSKAPPE

DIE DEPARTEMENT AARDWETENSKAPPE IS EEN VAN DIE OUDSTE AKADEMIESE DEPARTEMENTE BY DIE UNIVERSITEIT STELLENBOSCH, MET 'N GESKIEDENIS WAT TERUGSTREK NA DIE ONDERRIG VAN "ELEMENTÊRE GEOLOGIE" BY DIE STELLENBOSCH-SKOOLOF VANAF 1840 TOT 1865. VANDAG HUISVES DIE DEPARTEMENT 15 NAVORSERS EN MEER AS 30 NAGRAADSE STUDENTE.

Navorsingsbelange

Omgewing-geochemie

- Spoorelement- en isotopiese geochemie
- Seewater-geochemie
- Water-geochemie
- Besoedeling

Toegepaste geologie

- Tektoniek en orogeniese prosesse
- Sedimentologie en paleontologie
- Petrogenese van granitiese gesteentes
- Metamorfe petrologie
- Eksperimentele petrologie
- Skuifskerende goudafsettings
- Massiewe sulfiedafsettings
- Swaarmineraal-plaserafsettings
- Metaalgenese van mobiele stroke

Navorsingshoogtepunte

Die Departement se navorsingsuitsette vir 2014 het aansienlik verbeter. Dr. Susanne Fietz is nou ook die sesde personeelid met 'n NNS-evaluasie.

Navorsingsuitsette 2010-2014



Publikasielys

Navorsers met NNS-graderings

Personeellys

Kontak ons

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Plant- en Dierkunde

Aardwetenskappe

Chemie en Polimeerwetenskap

Biochemie

Wiskundige Wetenskappe

Mikrobiologie

Fisika

Fisiologiese Wetenskappe

Internasionaal erkende navorsers	
Prof. JS Buick	Metamorfe petrologie, geokronologie en isotopiese geochemie
Prof. JD Clemens	Petrogenese van granitiese gesteentes
Prof. A Kisters	Strukturele geologie
Prof. G Stevens	Eksperimentele petrologie
Gevestigde navorsers	
Dr. S Fietz	Mariene- biogeochemie
Prof. A Roychoudhury	Omgewingsgeochemie en hidrologie

Nasionale en internasionale samewerking

Gedurende 2014 het die Departement saam met navorsers van 103 instellings in 27 lande saamgewerk. Ons belangrikste internasionale vennote is afkomstig vanuit instellings in Duitsland (16 instellings), die Verenigde State van Amerika (10) en Frankryk (10). In Afrika het ons saam met navorsers uit Kameroen, Namibië en Uganda gewerk.



Fokus op nagraadse studies

Ons het 'n groot groep Honneurs-studente (22) en agt MSc- en drie PhD-studente. Byna 'n derde van ons nagraadse studente is afkomstig uit die SBI-groepe en die verhouding manlike tot vroulike studente op nagraadse vlak is omtrent 2:1. Gedurende 2014 het ons ook twee nadoktorale genote gehuisves: Dr. M. Garcia Aria (Spanje) en Dr. V. van Schijndel (Nederlande). Een van ons nagraadse studente, me. Swana Kelley, het die toekenning vir die Beste Studente-plakkaat by die kongres van die Internasionale Vereniging van Hidrogeoloë in Morokko ontvang.

Wetenskap aan boord van die SA Agulhas II

Agt van ons nagraadse studente het in Desember 2014 aan boord van die SA Agulhas II vir die jaarlikse retoervaart na Antarktika gegaan. Hulle het navorsingsprobleme soos die verband tussen die groei van alge in die Suidelike Yssee, die sirkulering van noodsaaklike sporelemente en die impak daarvan op die vlakke van CO_2 in die atmosfeer en die oseaan ondersoek. [Lees meer](#)



Ekspedisie na Groenland

Dr. Martin Klausen en MSc-student Riaan Bothma was op 'n geologiese ekspedisie na Groenland. Dit was die laaste van 'n reeks van ses ekspedisies wat deur die Royal Geological Survey van Denemarke en Groenland (GEUS) georganiseer is en wat ten doel gehad het om die Noord-Atlantiese Kraton te karteer en te ondersoek. [Lees meer](#)



DEPARTEMENT CHEMIE EN POLIMEERWETENSKAP

DIE DEPARTEMENT CHEMIE EN POLIMEERWETENSKAP IS EEN VAN DIE VOORSTE CHEMIE-DEPARTEMENTE IN SUID-AFRIKA. ONS IS BETROKKE BY 'N WYE REEKS VAN NAVORSINGSGBIEDE, WAARONDER DIE GROOTSTE NAVORSINGSGING IN POLIMEERWETENSKAP IN SUID-AFRIKA.

Navorsingsbelange

Organiese chemie & medisinale chemie

Anorganiese chemie & organiese metaalchemie

Analitiese chemie

Polimeerwetenskap

Fisiese & berekeningschemie

Supramolekulêre chemie & materiale

Navorsingsuitsette

Gedurende 2014 het die Departement voortgegaan om navorsingsartikels in hoë-impak vaktydskrifte soos *Chemical Communications*, *Analytical Chemistry*, *Angewandte Chemie* en *Inorganic Chemistry* te publiseer. Van dié tydskrifte word onder die top 1% van die wêreld se toonaangewende wetenskaplike vaktydskrifte gereken.

Sewe primêre navorsingsartikels uit die Departement is ook in *Nature Index* 2015 ingesluit. Die *Nature Index* is 'n unieke databasis wat naspoor watter instellings die grootste enkele bydrae tot goeie kwaliteit wetenskaplike navorsing in 'n vakgebied, 'n streek of wêreldwyd gemaak het. In die vakgebied van chemie is die Universiteit Stellenbosch die voorloper in Afrika:

Institution ▼	AC ▼	FC ▼	WFC ▼
1. Stellenbosch University (SU)	7	6.27	6.27
2. University of Cape Town (UCT)	5	1.50	1.50
3. University of the Free State (UFS)	4	1.39	1.39
4. Cape Peninsula University of Technology (CPUT)	2	1.27	1.27
5. University of KwaZulu-Natal (UKZN)	5	1.01	1.01
6. University of the Western Cape (UWC)	2	0.90	0.90
7. University of Johannesburg (UJ)	1	0.88	0.88
8. Nelson Mandela Metropolitan University (NMMU)	1	0.80	0.80
9. Université Constantine 1	2	0.57	0.57
10. University of Carthage (UCAR)	2	0.44	0.44

Publikasielys

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Personeellys

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Mikrobiologie

Fisika

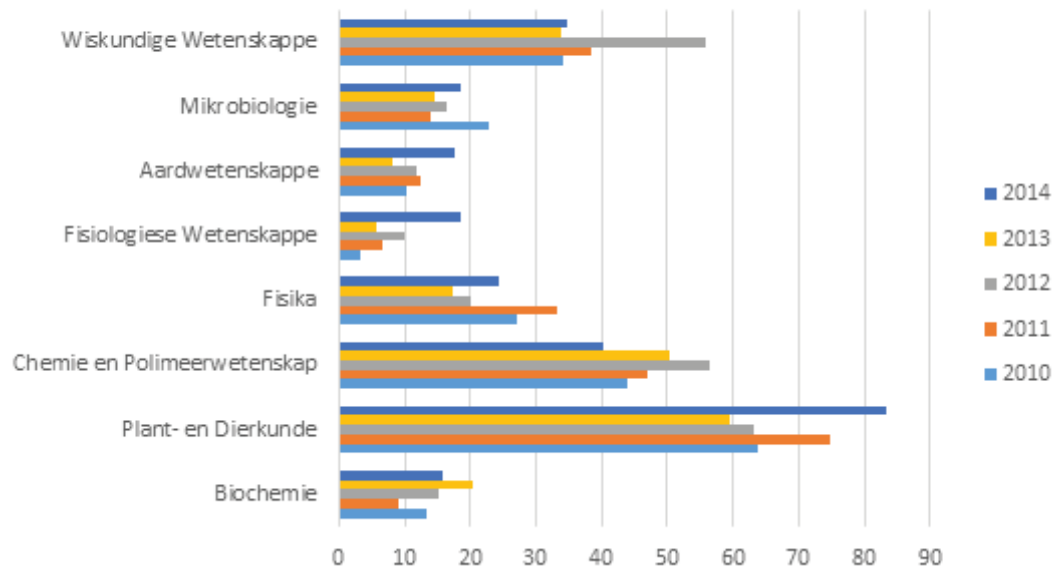
Fisiologiese Wetenskappe



TUIS

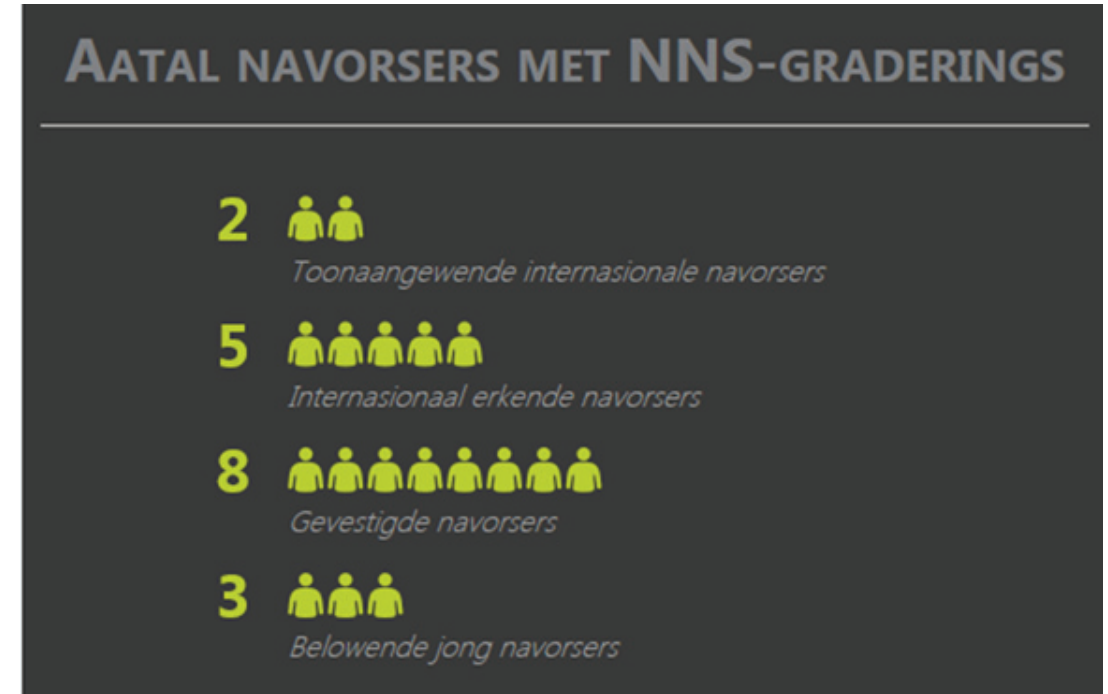
Die Fakulteit Natuurwetenskappe se geouditeerde navorsingsuitsette vir die publikasiejare 2010 tot 2014 toon dat die Departement Chemie en Polimeerwetenskap konstant onder die eerste drie departemente presteer.

Geakkrediteerde publikasie-eenhede per departement
2010-2014



Navorsingsprofiel

Twee van Suid-Afrika se vier toonaangewende internasionale navorsers in chemie (met A-graderings van die NNS) het leerstoel by die Departement Chemie en Polimeerwetenskap. Hulle is prof. Bert Klumpermann, houer van die Suid-Afrikaanse (SARChI) leerstoel in Gevorderde Makromolekulêre Argitektuur, en prof. Len Barbour, wat die Leerstoel in Funksionele Nanogestruktureerde Materiale beklee. Altesaam 18 (60%) van ons akademiese personeel beskik oor NNS-graderings.



Die Departement Chemie en Polimeerwetenskap is 'n redelik "jong" departement – die gemiddelde ouderdom van ons akademiese personeel is net 46 jaar. Almal, met die uitsondering van een personeellid, beskik oor 'n doktorsgraad:

Ouderdomsprofiel van akademiese personeel

Posvlak	Gemiddelde ouderdom
Professor	55.8
Mede-professor	45.6
Senior dosent	43.2
Dosent	41.1
Departementele gemiddelde	46

Gedurende 2014 het die Departement 17 nadoktorale genote van Suid-Afrika (5), Indië (7), Lesotho (1), Pole (1) en China (1) gehuisves.

Geografiese verspreiding van medewerkers in 2014



- Africa
- Asia
- Australia & NZ
- Europe
- Middle East
- North America

Internasionale en nasionale samewerking

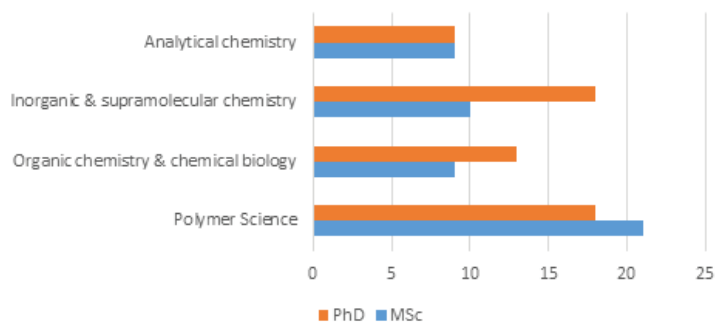
Gedurende 2014 het ons saam met navorsers van 87 instellings in 25 verskillende lande saamgewerk – dit sluit in mede-outeurskap op navorsingsartikels, navorsingsbesoeke, personeel- en nagraadse studente-uitruilprogramme en verskeie projekte wat die resultaat is van ons bilaterale ooreenkomste. Terwyl ons voetspoor in Suid-Afrika (16 instellings) groot is, het ons meer gereeld saam met navorsers uit Duitsland (14 instellings) en die Verenigde State van Amerika (9) gewerk. Klik op die kaart hieronder vir 'n volledige lys van al ons vennote.



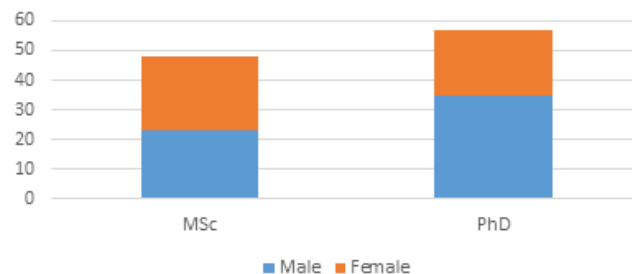
Fokus op nagraadse studente

DIE DEPARTEMENT HUISVES 'N GROOT GROEP VAN 107 VOLTYDSE NAGRAADSE STUDENTE – 49 MSc- EN 58 PHD-STUDENTE. GEDURENDE 2014 HET 15 MSc- EN SEWE PHD-STUDENTE SUKSESVOL GEGRADUEER.

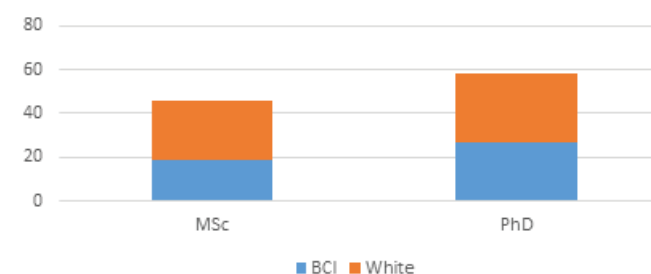
Verspreiding van aantal nagraadse studente per studieieier



Geslagsprofiel van nagraadse studente 2014



Diversiteitsprofiel van nagraadse studente 2014



Die AlchemUS-vereniging, wat in 2011 gestig is, het vanjaar weer hul “magiese vertoning” aangebied – [klik hier](#)

Ons nagraadse studente het verder goed gevaar by verskeie nasionale en internasionale konferensies:

Chandré Willemse	Beste Mondelinge Voordrag: Kromatografie, Analytika 2014
Shani Barkhuysen	Royal Society of Chemistry Beste Student Plakkaat-prys (spektroskopie), Analytika 2014
Varia Nikolayenko	Beste mondelinge voordrag, SACI/RSC Wes-Kaapse Studente Simposium 2014
Leandi van der Westhuizen	Wilhelm Frank PhD Studiebeurs

DEPARTEMENT BIOCHEMIE

ONS NAVORSING FOKUS OP DIE KRUISPUNT WAAR CHEMIE EN BIOLOGIE OP VERSKILLENDE VLAKKE – VAN DIE MOLEKULÊRE STRUKTUUR EN MAKROMOLEKULÊRE AKTIWITEIT TOT BY BIOLOGIESE FUNKSIE – BYMEKAARKOM. VAN DIE NAVORSINGSKWESSIES WAT ONS AANSPEEK, IS ONDER MEER DIE BEHANDELING VAN AFVALWATER, AARTAPPELVIRUS SISTEMATIEK EN DETEKSIE, ANTIMALARIAMIDDELNAVORSING, ENTSTOFONTWIKKELING EN FUNDAMENTELE NAVORSING IN SISTEEMBIOLOGIE EN P450-FUNKSIONERING.

Navorsingsbelange

Sisteembiologie

Steroïednavorsing

Nuwe antibiotika en teenmiddelnavorsing

Bioinformatika & molekulêre plantsistematiek

Ensimologie, patologie & deteksie van patogene

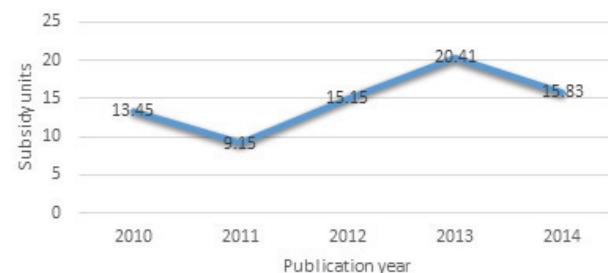
Navorsingshoogtepunte

Dit was 'n uitsonderlike jaar vir prof. Marina Rautenbach. Sy is tydens die Suid-Afrikaanse Vroue in die Wetenskap-toekenningsgeleentheid aangewys as een van die weners in die Uitgelese Vroue Wetenskaplike (Natuurwetenskappe en Ingenieurswese) kategorie.

Sy het die US Vise-Rektor: Navorsing se toekenning vir uitsonderlike navorsing ontvang en gedurende 2014 het sy en prof. Ann Louw ook hul professorale intreeredes gelewer.

Verder het prof. Rautenbach se groep 'n nuwe patent via Innovus, die Universiteit Stellenbosch se tegnologievennoot, geregistreer. Die patent, *Antimicrobial cyclic peptide composition for plants*, het ten doel om die mikrobiële infeksie van vars produkte te verminder en is nou beskikbaar vir lisensiëring. Dié nuwe tegnologie is daarop gemik om in organiese boerderypraktyke se behoefte aan natuurlike biobeheeragente te voorsien.

Navorsingsuitsette per publikasie jaar
2010-2014



Die grafiek is gebaseer op die geouditeerde eenhede vir die Fakulteit Natuurwetenskappe se navorsingsuitsette per jaar vanaf 2010 tot 2014. Bron: Afdeling vir Navorsingsontwikkeling (2015) Universiteit Stellenbosch

Navorsers met NNS-graderings

Agt van ons 14 akademiese personeellede het graderings van die Nasionale Navorsingstigting (NNS) ontvang. Die Departement huisves ook die Suid-Afrikaanse (SARChI) leerstoel in Meganistiese Modellerings van Gesondheid en Epidemiologie, wat deur prof. Jackie Snoep beklee word.

AANTAL NAVORSERS MET NNS-GRADERINGS



Publikasielyst

Navorsers met NNS-graderings

Personeelyst

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Fisika

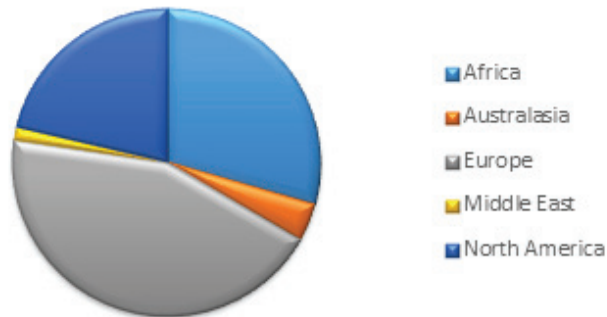
Fisiologiese Wetenskappe

Nasionale en internasionale samewerking

Die Departement het sterk samewerkingsooreenkomste met instellings in Suid-Afrika, veral die navorsing- en ontwikkelingsafdelings van instellings soos die:

- Elsenburg Landbou-kollege
- Grootfontein Landbou Ontwikkelingsinstituut
- Karl Bremer Hospitaal
- Klein-Karoo Groep: Navorsing en ontwikkeling
- Mediese Navorsingsraad
- Mohair Suid-Afrika: Navorsing en ontwikkeling
- Aartappels Suid-Afrika: Navorsing en ontwikkeling
- Rhodes Voedselgroep: Navorsing en ontwikkeling
- SABMiller: Navorsing en ontwikkeling
- Suid-Afrikaanse Rooibos-raad: Navorsing en ontwikkeling

Geografiese verspreiding van
medewerkers 2014



Op internasionale vlak het die Departement se navorsers met 75 instellings in 14 lande saamgewerk. Klik op die kaart vir 'n volledige lys van al ons medewerkers:



Konferensies en werksinkels

Gedurende 2014 het die Departement twee groot internasionale konferensies aangebied. Die Suid-Afrikaanse Chemiese Instituut (SACI) en die Amerikaanse Chemiese Vereniging (ACS) se bi-nasionale Organiese Chemie Konferensie (BOCC 2014) is by die Stellenbosch Instituut vir Gevorderde Navorsing (STIAS) aangebied. Prof. Erich Strauss was 'n gasspreker by een van die hoofsessies.

Prof. Dirk Bellstedt was die sekretaris-generaal en voorsitter van die sekretariaat vir die organisering van die *Association pour l'Etude Taxonomique de la Flore d'Afrique Tropicale* (AETFAT) se konferensie. Met 270 mondelinge voordragte en 205 plakkaat-aanbiedings was dit die grootste botaniese konferensie wat nog ooit op Suid-Afrikaanse bodem plaasgevind het.



Die Departement het 'n besige jaar agter die rug. Lede van die akademiese personeel het hul navorsing by nege plaaslike en 17 internasionale konferensies aangebied. Verskeie navorsers is uitgenooi om lesings by internasionale werksinkels of universiteite te lewer. Prof. Pieter Swart en dr. Donita Africander het as sprekers by die Toksikologie Vereniging van Suid-Afrika (TOXSA) se werksinkel opgetree. Dr. Karl Storbeck het lesings by die Universiteit van Michigan (VSA) en die Universiteit van Birmingham (VK) gelewer. Prof. Johann Rohwer is uitgenooi om die 24ste Kongres van die Suid-Afrikaanse Vereniging van Biochemie en Molekulêre Biologie (SASBMB) toe te spreek.

DEPARTEMENT WISKUNDIGE WETENSKAPPE

(Wiskunde, Toegepaste Wiskunde, Rekenaarwetenskap)

DIE AFDELINGS WISKUNDE, TOEGEPASTE WISKUNDE EN REKENAARWETENSKAP VORM GESAMENTLIK DIE DEPARTEMENT WISKUNDIGE WETENSKAPPE BY DIE UNIVERSITEIT STELLENBOSCH. DIE DEPARTEMENT HET 48 VOLTIDSE AKADEMIESE PERSONEELLEDE EN SES BUITENGEWONE PROFESSORE EN MEDE-PROFESSORE, 'N NAVORSINGSLEERSTOEL EN EEN DWT/NNS SENTRUM VAN UITNEMENDHEID.

Navorsingsbelange

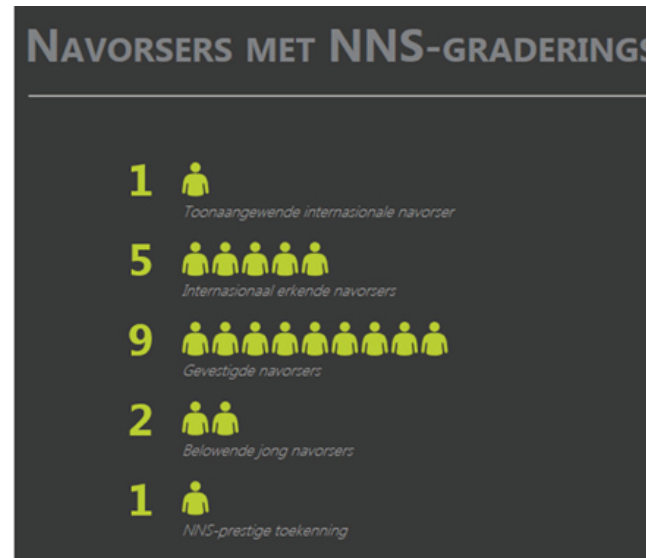
Wiskunde	Toegepaste Wiskunde	Rekenaarwetenskap
• Algebra en getal-teorie • Analise en topologie • Fundamentele onderwerpe in abstrakte wiskunde • Diskrete wiskunde • Biowiskunde en berekeningsbiologie	• Rekenaarvisie, masjienleer en patroonherkenning • Vloeidynamika en modellering • Numeriese analise en wetenskaplike berekening • Toegepaste diskrete wiskunde	• Program-verifikasie • Sagteware ontwikkeling • Masjienleer en rekenaarvisie • IP netwerke • Outomaat-teorie en formele tale

Navorsingshoogtepunte

Die Wiskunde-, Toegepaste Wiskunde- en Rekenaarwetenskap-afdelings se navorsingsuitsette het oor die afgelope jaar effens versterk. Akademiese personeel het in hoë impak vaktyskrifte gepubliseer en aan verskeie nasionale en internasionale konferensies deelgeneem. Gedurende 2014 het ons veral ons samewerking met internasionaal-erkende navorsers by toonaangewende instellings en die industrie versterk.

Navorsingsprofiel

Agtien lede van ons akademiese personeel beskik oor NNS-graderings – dit sluit drie vroulike navorsers in. Die Departement huisves die DWT/NNS Sentrum van Uitnemendheid vir Epidemiologiese Modellering en Analise (SACEMA). Saam met die Afrika Instituut vir Wiskunde Wetenskappe (AIMS), huisves ons gesamentlik die Suid-Afrikaanse navorsingsleerstoel (SARChI) in Wiskundige en Teoretiese Fisiese Biowetenskappe, wat tans deur prof. Cang Hui beklee word.



Publikasielys

Navorsers met NNS-graderings

Personeellys

Kontak ons

DEPARTEMENTE:

Plant- en Dierkunde

Aardwetenskappe

Chemie en Polimeerwetenskap

Biochemie

Wiskundige Wetenskappe

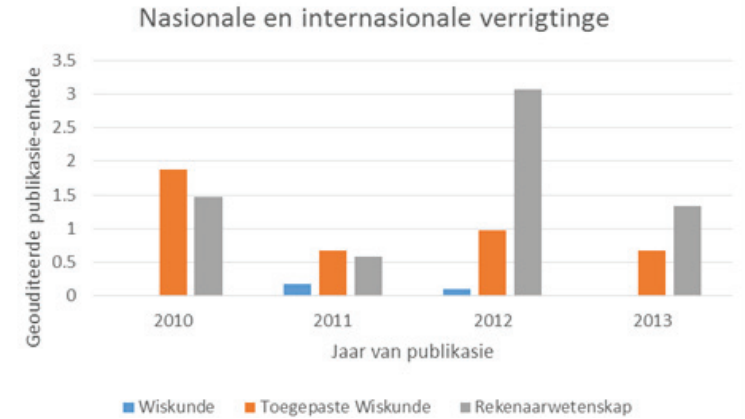
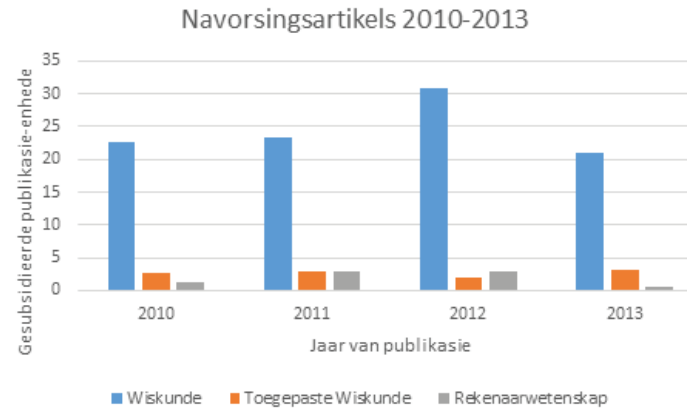
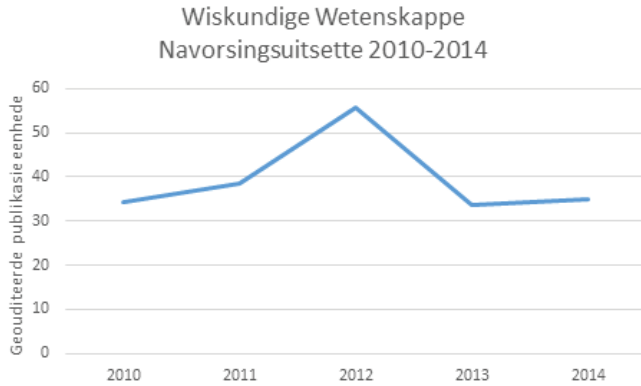
Mikrobiologie

Fisika

Fisiologiese Wetenskappe



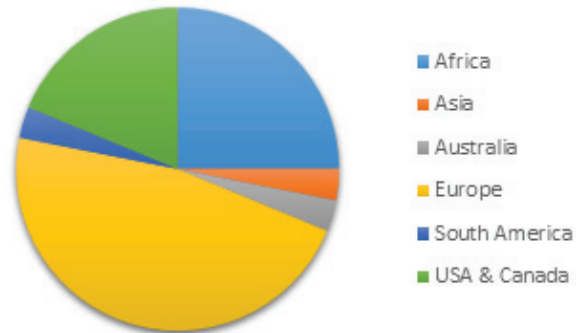
Navorsingsuitsette



Nasionale en internasionale samewerking

Samewerking met van die voorste internasionale universiteite en instellings verhoog ons internasionale sigbaarheid en die kwaliteit van ons navorsing. Gedurende 2014 het ons met meer as 30 instellings in 19 lande saamgewerk. Dit sluit in navorsingsbesoeke, mede-outeurskap van navorsingsartikels en studente- en personeel-uitruilprogramme. Klik op die kaart vir 'n volledige lys van al ons medewerkers.

Geografiese verspreiding van medewerkers



Plaaslike en internasionale erkenning

Drie van ons personeellede is deur top eerstejaarstudente by die Universiteit Stellenbosch uitgesonder vir hul bydrae tot hul akademiese sukses in 2013 – hulle is dr. Karin-Therese Howell, prof. Lynette van Zijl en prof. Florian Breuer. Ander toekennings sluit in:

Prof. Stephan Wagner	Universiteit Stellenbosch Vise-Rektor: Navorsing en Innovasie, toeknning vir personeellid met meeste publikasies
Prof. Willem Visser	Mees Invloedryke Artikel 2014-toekening, International Conference on Automated Software Engineering. Sien Visser et al. Model Checking Programs. <i>Automated Software Engineering</i> , April 2003 Vol 10 (2):203-23
Prof. Bernd Fischer	Goue Medalje vir Csqe (Certified Software Quality Engineering) en ESBMC (Efficient SMT-Based Context-Bounded Model Checker) in die 3de Internasionale Kompetisie vir Sagteware-verifikasie (SV-COMPI4), 20th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS 2014)

Fokus op nagraadse studente

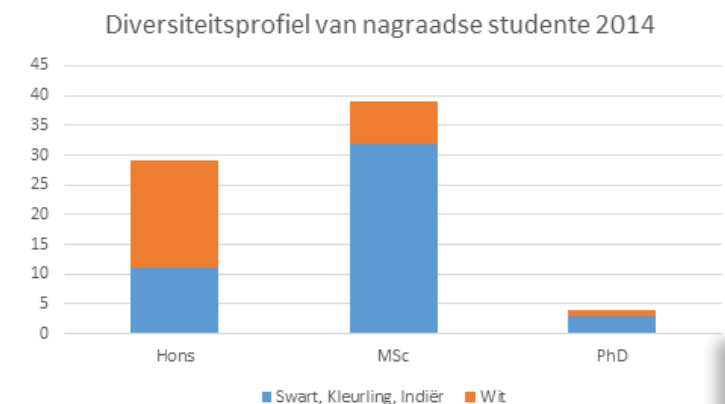
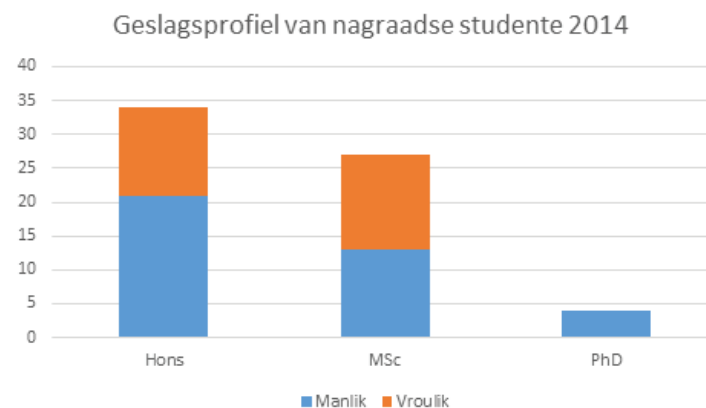
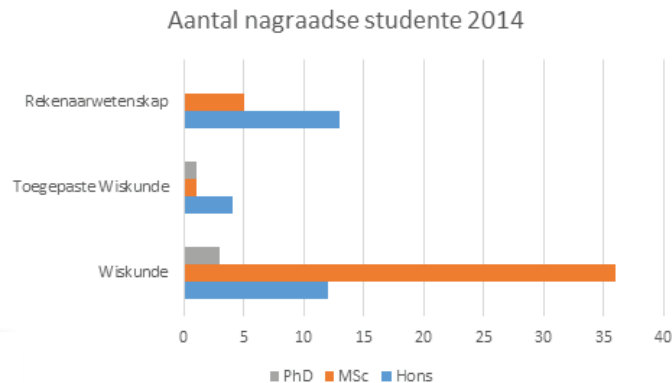
Gedurende 2014 het die Departement 'n groep van meer as 50 nagraadse studente gehad, met nog 21 studente wat deur middel van die Afrika Instituut vir Wiskundige Wetenskappe (AIMS) by die Universiteit Stellenbosch geregistreer is. Van hierdie nagraadse studente is 18 in die Rekenaarwetenskap-afdeling, ses in die Toegepaste Wiskunde- en 51 in die Wiskunde-afdeling.

Terwyl die geslagsprofiel van ons nagraadse studente 'n uitdaging bly, is ons vol vertroue oor ons diversiteitsprofiel en gaan ons voort om instellings soos AIMS te ondersteun. Die ondersteuning word gereflekter in die aantal personeellede wat by AIMS klasgee of as studieleiers vir MSc en PhD studente optree:

Dosente: Prof. Stephan Wagner en dr. Dimbinaina Ralaivaosaona (wiskundige probleemoplossing); dr. Gareth Boxall (modelteorie) en prof. Johan de Villiers (wavelets and subdivision).

Studieleiers: Prof. Florian Breuer, prof. Zurab Janelidze, prof. Stephan Wagner, prof. Arnold Keet, prof. Francois Smit, dr. Hardus Diedericks en prof. Mapundi Banda.

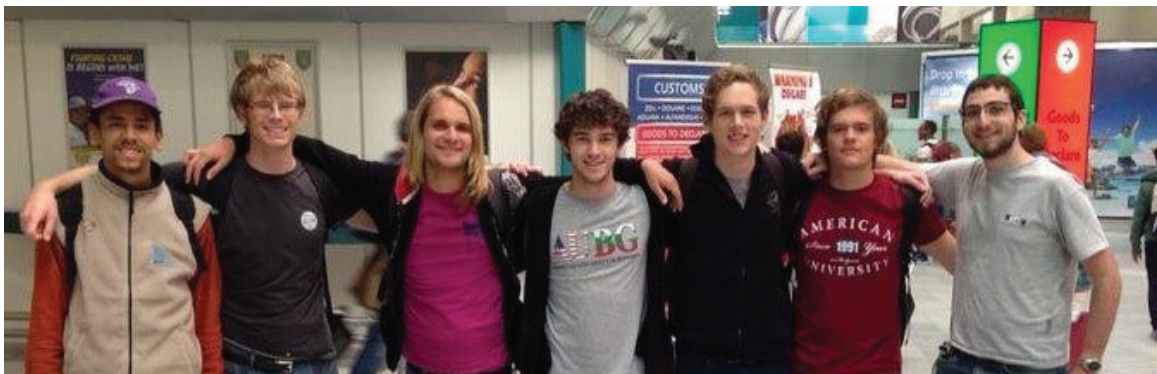
Ons het ook vyf nadoktorale genote vanaf Suid-Afrika (3), Madagaskar (1) en die Verenigde Koninkryk (1) gehuisves.



Nasionale en internasionale erkenning

Die deelname van voorgraadse en nagraadse studente aan nasionale en internasionale kompetisies is deur prof. Stephan Wagner, dr. Steve Kroon en dr. Willie Brink aangemoedig. Twee MSc-studente in rekenaarwetenskap het veral goed gevaar: Rijnard van Tonder het tweede gekom in die 'IBM Beat the Mainframe'-kompetisie in New York. Saam met Jacques Marais het hy ook 'n toepassing, 'WorkMode', ontwikkel waarmee hulle die studente-kategorie van die Ericsson Mobiele Toepassing-kompetisie gewend het. Lees meer

Ons wiskunde-studente het goed gevaar by die Internasionale Wiskunde-kompetisie (IMC) wat in Bulgarye plaasgevind het, sowel as in die derde Suid-Afrikaanse Tersiere Wiskunde Olimpiade. Die Wiskunde-afdeling was nou betrokke by die reëlings vir die Internasionale Wiskunde Olimpiade wat vir die eerste keer in Suid-Afrika plaasgevind het. Dit was prof. Florian Breuer (koördineerder), prof. Stephan Wagner (probleemseleksie-komitee en probleem-kaptein) en prof. Dirk Laurie (hoof-koördineerder), en verskeie nagraadse studente.



Dié studente het aan die International Mathematics Competition in Bulgarye deelgeneem. Van links na regs, Liam Baker (spanleier), Mark Chimes (US), Dylan Nelson (UK), Petri-Johan Last (US), Elrich Groenewald (US), Michael Hoefnagel (US) en Robert Spencer (UK).

Die Universiteit Stellenbosch se Kanseliersmedalje is toegeken aan Thomas Weighill, 'n nagraadse student in Wiskunde. Weighill het ook die S_2A_3 -medalje, wat deur die Suider-Afrikaanse Vereniging vir die Bevordering van die Wetenskap aan uitstaande MSc-studente toegeken word, ontvang. Dr. Dirk Basson het 'n nadoktorale genootskap van die Universiteit van Leiden ontvang.

DEPARTEMENT MIKROBIOLOGIE

DIE DEPARTEMENT MIKROBIOLOGIE SE ONTSTAANSGESKIEDENIS STREK TERUG TOT 1918, TOE PLANTPATOLOGIE AS 'N VAKGEBIED IN DIE DESTYDSE FAKULTEIT AGRIWETENSKAPPE GEÏDENTIFISEER IS. VANDAG BESKIK DIE DEPARTEMENT OOR 'N AKADEMIESE PERSONEEL VAN 16 VOLTIDSE NAVORSERS, BUITENGEWONE PROFESSORS EN NAVORSINGSGENOTE WAT IN NEGE NAVORSINGSGROEPE, ELK MET HUL EIE MODERNE LABORATORIUMS, WERK.

Navorsingsbelange

Biologiese
prosessering van
plantmateriaal

Taksonomie van
melksuurbakterië

Taksonomie van
askomisetes (fungi)

Omgewing-
mikrobiologie

Bioprospektering

Mikrobiële
ekologie

Tegnologie vir
behandeling van
afvalwater

Energie navorsing:
biobrandstowwe

Navorsingsuitsette

Die Departement het die aantal navorsingsartikels wat in geakkrediteerde vaktydskrifte gepubliseer is van 30 (2013) tot 34 in 2014 verhoog. Die gemiddelde impakfaktor (JCR) van die vaktydskrifte was 2.9.



Publikasielyst

Navorsers met NNS-graderings

Personeelyst

Kontak ons

DEPARTEMENTE:

Plant- en Dierkunde

Aardwetenskappe

Chemie en Polimeerwetenskap

Biochemie

Wiskundige Wetenskappe

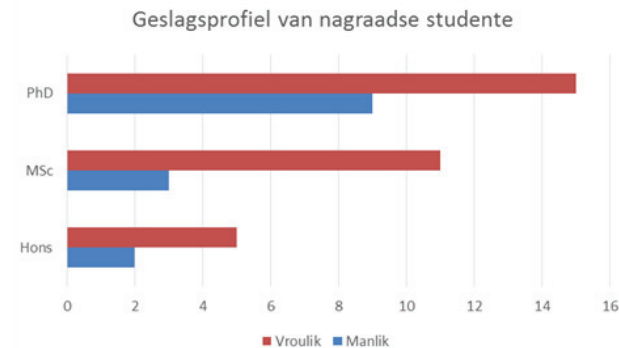
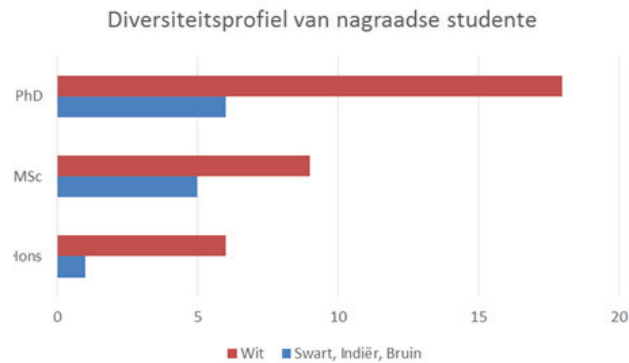
Mikrobiologie

Fisika

Fisiologiese Wetenskappe

Fokus op nagraadse studente

Gedurende 2014 het die Departement 'n groep van 45 voltydse nagraadse studente gehad – sewe Honneurs-, 14 MSc- en 24 PhD-studente. Van hierdie groep het drie MSc- en twee PhD-studente in 2014 gegradueer, terwyl ons vorige departementshoof en waarnemende dekaan, prof. Doug Rawlings, sy DSc-graad verwerf het. Die Departement het ook ses nadoktorale genote vanaf Suid-Afrika (5) en Indië (1) gehuisves.



Konferensies en werksinkels

Personeel en studente het hul navorsing by verskeie konferensies aangebied, waaronder die:

- Eerste Wêreldwye Grond Biodiversiteitskonferensie, Frankryk
- Bioenergie-werksinkel, Suid-Afrika
- 4de Internasionale Konferensie oor Nuwe Ensieme, België

Mnr. Ferdinand Postma, 'n PhD-student, het 'n Gevorderde Kursus in Omgewingsbiotegnologie by die Delft Universiteit van Tegnologie in Nederland bygewoon.

Redaksionele aktiwiteite

Prof. A Botha	<i>Canadian Journal of Microbiology</i> (redaksie); <i>FEMS Yeast Research</i> (redaksie)
Prof. LMT Dicks	<i>Probiotics and Antimicrobial Proteins</i> (redaksie); <i>Beneficial Microbes</i> (redaksie); <i>Annals of Microbiology</i> (redaksie); <i>Bioscience of Microbiota, Food and Health</i> (redaksie); <i>South African Journal of Enology and Viticulture</i> (hoofredakteur)
Prof. K Jacobs	<i>Mycology</i> (redaksie)
Prof. GM Wolfaardt	<i>Canadian Journal of Microbiology</i> (mede-redakteur); <i>Applied and Environmental Microbiology</i> (redaksie)

Diens aan die wetenskaplike

Prof. A Botha	Watervorsingskommissie-projekte (aanbevelingsgroep-lid); Materiale Navorsingsgroep (MRG) Gebruikersadviesraad van die Biolmprove Program, Swede (lid); South African Academy of Science (lid)
Prof. TE Cloete	Watervorsingskommissie (lid); Wetenskaplike en Nywerheidsnavorsingsraad (raadslid)
Prof. LMT Dicks	South African Academy of Science (lid)
Dr. W Khan	Royal Society of Chemistry (lid)
Prof. B Prior	South African Academy of Science (lid)
Prof. DE Rawlings	South African Academy of Science (lid)
Prof. WH van Zyl	20ste Internasionale Simposium oor Alkoholbrandstowwe (ISAF) (voorsitter); Biolmprove Program Swede (adviesraad); South African Academy of Science (lid)
Dr. H Volschenk	Suid-Afrikaanse Vereniging vir Mikrobiologie (lid en sekretaris van publikasies)
Prof. G Wolfaardt	Stellenbosch Universiteit Water Instituut (direkteur)

Befondsing

Britse Raad (Verenigde Koninkryk); ERWAT (East Rand Water Care Company); Eskom; Exxaro; FlowCentric; Natuurwetenskappe en Ingenieursnavorsingsraad van Kanada; Nuclear Waste Management Organization (Kanada); Universiteit van Antwerpen (België).

DEPARTEMENT FISIKA

DIE DEPARTEMENT FISIKA LEWER AL SEDERT 1903 VOORTREFLIKE STUDENTE EN UITSTEKENDE NAVORSING. ONS BIED PROGRAMME OP VOORGRAADSE EN NAGRAADSEVLAK AAN IN TEORETIESE FISIKA, LASER FISIKA, ASOOK KERN-, STRALINGS- EN GESONDHEIDSFISIKA.

Navorsingsbelange

Teoretiese fisika

- Gekondenseerde materie
- Komplekse sisteme

Kernfisika

- Kernstruktuur
- Meganismes van kernreaksies
- Stralings- en gesondheidsfisika
- Toegepaste kernfisika
- Fisika opvoeding

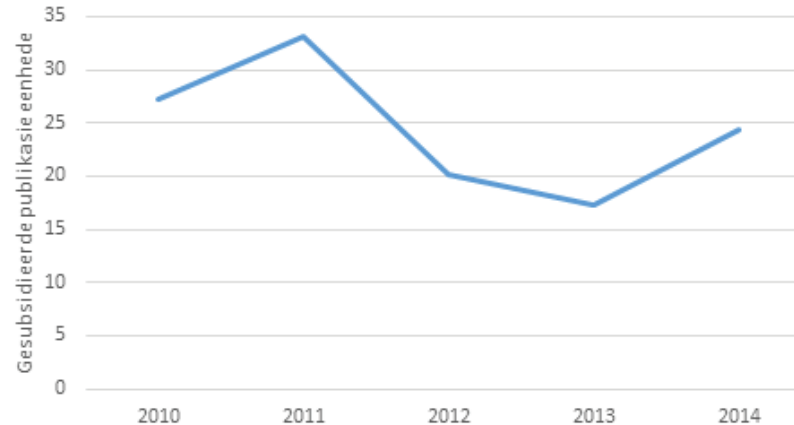
Laser fisika

- Spektroskopie
- Ultravinnige wetenskap

Navorsingsaktiwiteite

Personeel en studente in die Departement Fisika het 'n baie produktiewe jaar agter die rug. Ons het verskeie internasionale besoekers ontvang en ons navorsers het hul werk by hoë vlak internasionale konferensies en ander platforms aangebied.

Navorsingsuitsette 2010-2014



Publikasielys

Navorsers met NNS-graderings

Personeellys

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Aardwetenskappe

Chemie en Polimeerwetenskap

Biochemie

Wiskundige Wetenskappe

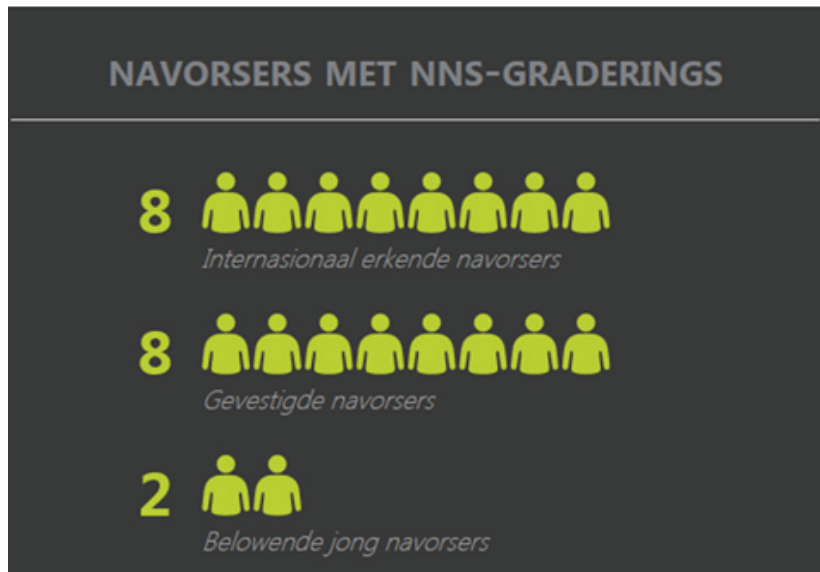
Mikrobiologie

Fisika

Fisiologiese Wetenskappe

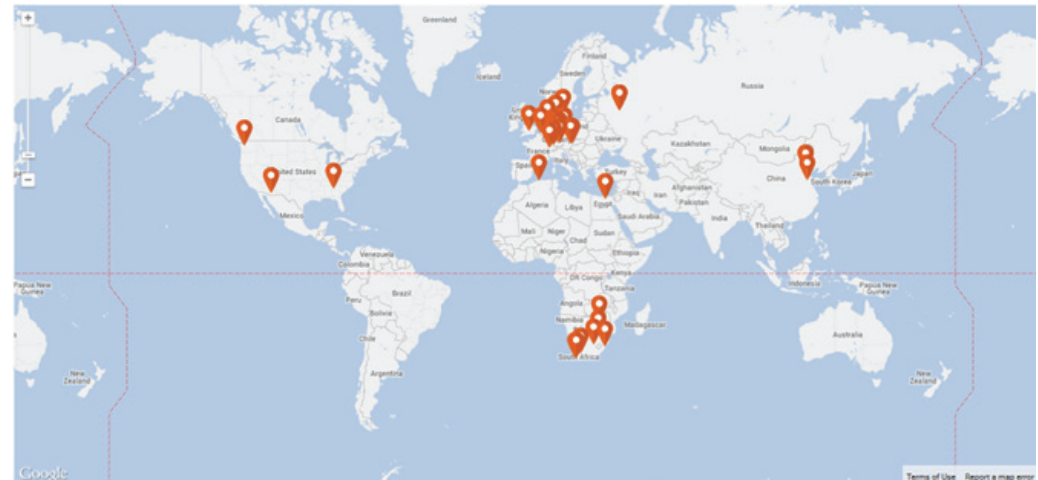
Navorsers met NNS-graderings

Vier van ons personeellede is in 2014 deur die Nasionale Navorsingstigting geëvalueer – hulle is prof. H. Touchette, Dr. F. Cinti, dr. J.J. van Zyl en dr. Pieter Neethling.



Nasionale en internasionale samewerking

Op nasionale vlak het die Departement met die universiteite van die Vrystaat, Kaapstad, die Wes-Kaap en Zululand saamgewerk. Verder in Afrika het ons bande gesmee met die Universiteit van Wetenskap en Tegnologie in Zimbabwe, die Sentrum vir Gevorderde Tegnologie-ontwikkeling in Algerië en die Nasionale Instituut van Laserverwante Wetenskappe in Egipte. Klik op die kaart vir 'n omvattende lys van al ons medewerkers.

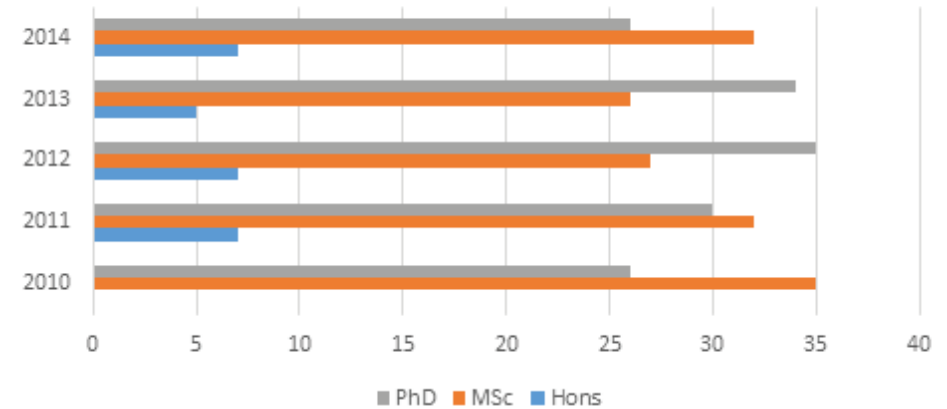


Fokus op nagraadse studente

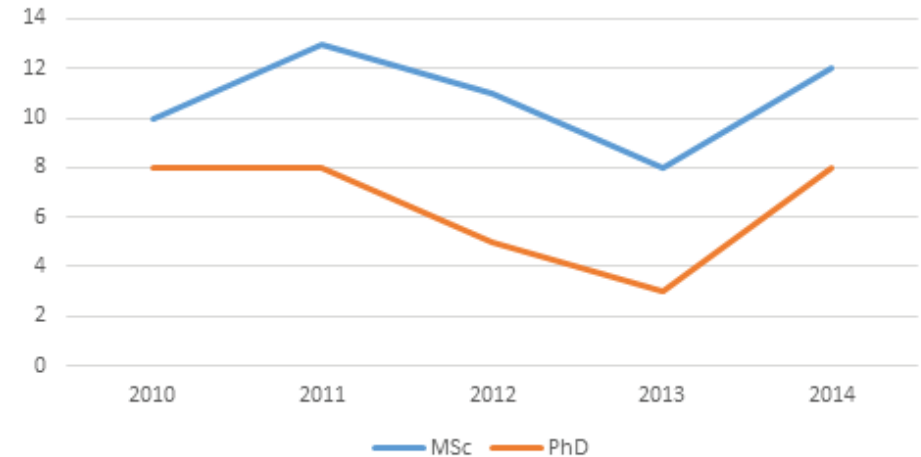
Ons het 'n groot groep van 65 nagraadse studente – sewe Honneurs-, 32 MSc- en 26 PhD-studente. Gedurende 2014 het 12 MSc- en agt PhD-studente suksesvol gegraduateer. In 'n eerste vir Suid-Afrika het **dr. Melanie McLaren** as deel van haar navorsing die konsep van kwantumverstrengeling gedemonstreer. [Lees meer](#)



Aantal geregistreerde nagraadse studente
2010-2014



Aantal PhD- en MSc-graduandi 2010-2014



Toekennings

Twaalf personeellede het toekennings vir voortreflike diens van die Universiteit Stellenbosch ontvang. Hulle is C April, SH February, JN Kriel, GJ Louwrens, prof. KK Müller-Nedebock, dr. PH Neethling, prof. P Papka, H Randall, prof. EG Rohwer, dr. CM Steenkamp, JJ van Zyl en prof. H Weigel.

Nagraadse studente het tydens die jaarkongres van die Suid-Afrikaanse Instituut vir Fisika met bykans al die groot pryse in fotonika weggestap.

[Lees meer](#)



Mnr. L Makathini	Beste mondelinge voordrag deur 'n PhD-student in Kernfisika
Mnr. L Maweza	Beste tegnologie ontwikkeling deur 'n Phd-student
Me. M McLaren	Beste plakkaat en publikasie deur 'n PhD-student in Fotonika
Me. I Minda	Beste mondelinge voordrag deur 'n MSc-student in Fotonika
Mnr. D Naidoo	Beste mondelinge voordrag deur 'n PhD-student in Fotonika
Mnr. D Spangenberg	Beste mondelinge voordrag en publikasie deur 'n PhD-student in Fotonika
Mnr. J van Zyl	Beste mondelinge voordrag deur 'n PhD-student in Teoretiese en Berekenningsfisika

Ander toekennings

Mnr. H Fourie	Toekenning vir voortreflike navorsing in die vakgebied straling dosering, mondelinge voordrag, 52ste kongres van die SA Vereniging vir Fisici in Medisyne (SAAPMB)
Me. A Suleiman	Eerste Prys, SPIE Winter Kollege in Optika, Internasionale Sentrum vir Teoretiese Fisika (ICTP), Italië

Meiring Naudé medalje

Die Meiring Naudé-medalje vir die top student in fisika is toegeken aan mnr. Zander Lee. Die toekenning word elke jaar gemaak aan die top student wat ten minste 80% in sy of haar BSc honneursprogram en 'n gemiddeld van ten minste 60% vir elke module in die program behaal het. Mnr. Lee het ook die Dekansmedalje vir volgehoue akademiese prestasie ontvang.

[Lees meer](#)



Gemeenskapsinteraksie

Studente en personeel het aktief deelgeneem aan institusionele gemeenskapsinteraksies soos die US se Ope Dag, die Maties Wetenskap Winterweek, die Fisika Ope Dag en die streekskompetisie van die Eskom Ekspo vir Jong Wetenskaplikes.

DEPARTEMENT FISIOLOGIESE WETENSAPPE

NAVORSERS IN DIE DEPARTEMENT FISIOLOGIESE WETENSAPPE ONDERSOEK EN ONTWIKKEL INNOVERENDE OPLOSSINGS VIR ERNSTIGE GESONDHEIDSKWESSIES WAT DIE SUID-AFRIKAANSE SAMELEWING IN DIE GESIG STAAR. ONS VOLG 'N GEÏNTEGREERDE BENADERING WAT ALLE VLAKKE VAN ORGANISASIE INSUIT – VAN DIE MOLEKULE TOT DIE HELE ORGANISME.

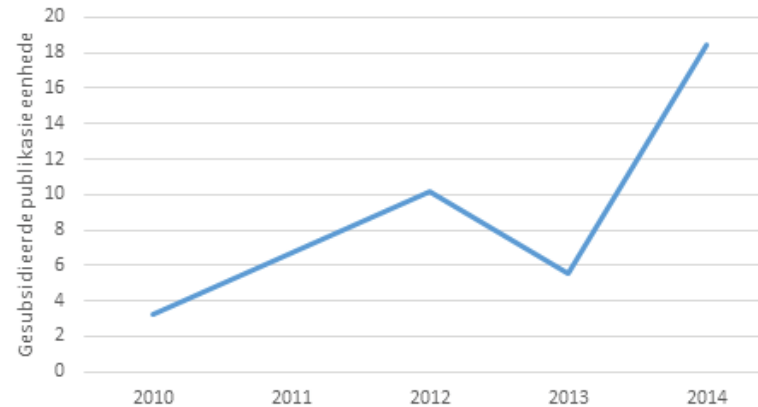
Navorsingsbelange



Navorsingsuitsette

Gedurende 2014 het die Departement 'n rekord van 27 navorsingsartikels in geakkrediteerde vaktydskrifte gepubliseer. Dit is grootliks te danke aan die strategiese herbelyning van navorsingsaktiwiteite en groeperings in die Departement.

Navorsingsuitsette 2010-2014



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DEPARTEMENTE:

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[Biochemie](#)

[Wiskundige Wetenskappe](#)

[Mikrobiologie](#)

[Fisika](#)

[Fisiologiese Wetenskappe](#)

NNS-graderings

Vyf van ons agt akademiese personeellede het NNS-graderings. Hulle is:

Internasionaal erkende navorser	
Prof. Kathy Myburgh	Spierbiologie
Gevestigde navorsers	
Prof. Faadiel Essop	Hartmetabolisme
Prof. Carine Smith	Stress biologie
Prof. Anna-Mart Engelbrecht	Seldood en seinweë
Belowende jong navorser	
Dr. Ben Loos	Neurosiektes en seinweë



Samewerking

Navorsers het met 47 instellings in 21 verskillende lande saamgewerk. Ons sterkste bande is met navorsers van instellings in die Verenigde Koninkryk en die Verenigde State van Amerika, asook met multi-nasionale maatskappye soos Janssen Navorsing en Ontwikkeling en Pfizer. Ons het ook ons voetspoor in Afrika vergroot en het bande gesmee met navorsers in Zimbabwe, Botswana en Nigirië.

Prof. Faadiel Essop is aangestel as besoekende professor by die Universiteit van La Réunion (Frankryk) en verkies tot raadslid van die Suid-Afrikaanse Vereniging vir Kardiovaskulêre Navorsing. Dr. Ben Loos was op besoek aan prof. Hiromi Imamuri van die Hakubi Sentrum vir Gevorderde Navorsing en die Graduate School of Biostudies by Kioto Universiteit (Japan) en prof. Esther Wong van Naniang Tegnologiese Universiteit (Singapoer).

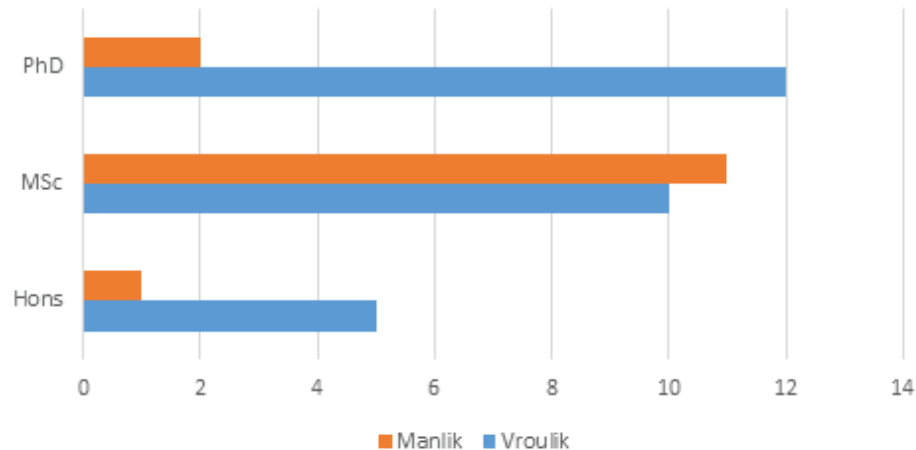
Klik op die kaart (regs bo) vir 'n volledige lys van al ons medewerkers:



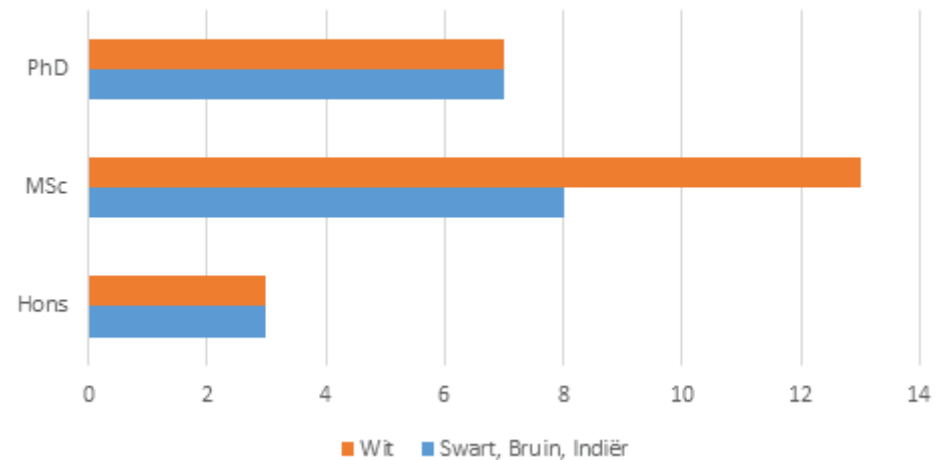
Fokus op nagraadse studente

Die Departement het 41 voltydse nagraadse studente op Honneurs- (6), MSc- (21) en PhD-vlak (14). Ons vaar relatief goed in terme van diversiteit – 40% van ons nagraadse studente is Swart, Bruin of Indiër en 55% is vroulik. Gedurende 2014 het ons drie nadoktorale genote van Suid-Afrika, Zimbabwe en Ierland geakkommodeer.

Geslagsprofiel van nagraadse studente 2014



Diversiteitsprofiel van nagraadse studente 2014



Die nagraadse studente het goed gevaar by verskeie nasionale en internasionale konferensies:

Me. Liz Louw	Toekenning vir Beste Mikroskopie Beelde, jaarkongres van die Mikroskopie Vereniging van Suid-Afrika
Mnr. Yigael Powrie	Toekenning vir die mees belowende opkomende mikroskopis, jaarkongres van die Mikroskopie Vereniging van Suid-Afrika
Me. Toni Goldswain	Tweede plek vir die beste mondelinge voordrag, 20ste konferensie oor Seldood en Siektes (ICDS)
Me. Natasha Driescher	Beste plakkaat, jaarkongres van die Mikroskopie Vereniging van Suid-Afrika
Me. Caleigh Opperman	Tweede plek vir beste mondelinge voordrag, jaarkongres van die Mikroskopie Vereniging van Suid-Afrika
Me. Megan Mitchell	Derde plek vir beste mondelinge voordrag, jaarkongres van die Mikroskopie Vereniging van Suid-Afrika



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Elektroniese weergawe / Electronic copy

ISBN ISBN: 978-0-7972-1596-2

Redaksionele span / Editorial Team

Wiida Fourie-Basson, Comari Schoeman, Departementele verteenwoordigers, Fakulteit Natuurwetenskappe

Uitleg en Ontwerp / Layout and Design

Lindie Nel, SUN MeDIA

Elektroniese versorging / Electronic editing

Ruan Pieters, SUN MeDIA

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Microbiology	Mikrobiologie
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Physiological Sciences	Wiskundige Wetenskappe (Wiskunde, Toegepaste Wiskunde, Rekenaarwetenskap)
Central Analytical Facility (CAF)	Sentrale Analitiese Fasiliteit (SAF)

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Leading international researcher	Prof Jannie Hofmeyr	systems biology and complexity studies
Internationally acclaimed researcher	Prof Johann Rohwer	systems biology
	Prof Jacky Snoep	systems biology
	Prof Erick Strausss	mechanistic enzymology and inhibitor development
	Prof Pieter Swart	adrenal steroidogenesis, affinity separation and protein immobilisation
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	Prof Ann Louw	steroid receptors, bioactivity of honeybush
	Prof Amanda Swart	bioactivity of rooibos and <i>Sutherlandia frutescens</i>
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	Prof Terry Robinson	evolutionary genetics and phylogenomics of mammals
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NRF Prestigious Awardee	Prof Alex Valentine	molecular physiology of host-microbe interactions of legumes in phosphorus deficient soils

Promising Young Researcher	Dr Susanne Clusella-Trullus	thermal adaptation of ectotherms and implications for climate change
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	Dr Jaco Le Roux	evolutionary biology and ecology of plant invaders
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	Prof Helgard Raubenheimer	ligand design aimed at applications in homogeneous catalysis; gold chemistry
	Prof Klaus Koch	multinuclear NMR spectroscopy and platinum group metals chemistry

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	Prof Catharine Esterhuysen	intermolecular interactions
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	Prof Robbie Luckay	ligand design for metal ion coordination in industrial and medical applications
Promising Young Researcher	Prof André de Villiers	separation science fundamentals and applications
	Dr Gareth Arnott	inherently chiral calixarenes; asymmetric methodology
	Dr Stephan Pelly	medicinal chemistry

Department of Earth Sciences

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Department of Mathematical Sciences

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	Prof Bernd Fischer	software engineering
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	Dr Farai Nyabadza	mathematical biology
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	Prof Brink van der Merwe	automata theory
	Prof Lynette van Zijl	theoretical computer science and asisstive technologies
Promising young researcher	Dr Karin-Therese Howell	algebra
	Dr Zurab Janelidze	category theory and universal algebra
	Dr Gareth Boxall	model theory, logic
NRF Prestigious Awardee	Prof Cang Hui	invasion biology, mathematical ecology

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Prof A Gerdes

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Ms L Conradie
G Olivier
F Timney

NEW APPOINTMENTS

Dr R Tucker

RETIRED

Prof A Rozendaal

**DEPARTMENT OF MATHEMATICAL SCIENCES
(MATHEMATICS, APPLIED MATHEMATICS, COMPUTER SCIENCE)**

ACADEMIC STAFF

Prof IM Rewitzky	Professor and Executive head: Mathematical Sciences
Prof MK Banda	Professor
Dr B Bartlett	Lecturer
Mr W Bester	Junior Lecturer
Dr G Boxall	Lecturer
Prof F Breuer	Professor and Head: Mathematics division
Dr WH Brink	Senior Lecturer
Dr J Brink	Senior Lecturer
Ms EJ Burger	Junior Lecturer
Dr J Coetzer	Senior Lecturer
Dr H de Villiers	Lecturer
Dr GH Diedericks	Senior Lecturer
Dr S Fidler-Woudberg	Senior Lecturer
Prof B Fischer	Professor of Computer Science
Prof A Fransman	Associate Professor
Prof J Geldenhuys	Associate Professor
Mr I Govender	Lecturer
Dr J Gray	Lecturer
Prof BW Green	Professor seconded to AIMS-SA
Dr PJP Grobler	Senior Lecturer
Ms HA Haroldt	Lecturer
Prof BM Herbst	Professor of Applied Mathematics
Dr K-T Howell	Senior Lecturer
Prof Cang Hui	Research Chair
Dr CP Inggs	Senior Lecturer
Prof Z Janelidze	Associate Professor
Dr AP Keet	Senior Lecturer
Dr RS Kroon	Senior Lecturer
Dr MF Maritz	Senior Lecturer
Prof S Mouton	Associate Professor
Dr MA Muller	Senior Lecturer
Dr NL Muller	Senior Lecturer
Dr CG Naude	Senior Lecturer
Prof F Nyabadza	Associate Professor
Dr PJP Ouwehand	Senior Lecturer
Prof H Prodinger	Professor of Mathematics
Dr NL Ralaivaosaona	Lecturer
Dr R Roux	Lecturer
Prof GJF Smit	Associate Professor and Head: Applied Mathematics Division
Mr JP Swanepoel	Junior Lecturer
Prof AB van der Merwe	Associate Professor
Dr S van der Walt	Senior Lecturer

	Prof L van Wyk	Professor of Mathematics
	Prof L van Zijl	Professor of Computer Science and Head: Computer Science Division
	Prof W Visser	Professor of Computer Science
	Prof S Wagner	Professor of Mathematics
	Ms L Wessels	Lecturer
	Prof M Wild	Professor of Mathematics

EXTRAORDINARY PROFESSORS

Prof JM de Villiers	Mathematics
Prof MB Dwyer	Computer Science
Prof T Krzesinski	Computer Science
Prof HE Porst	Mathematics
Prof JW Sanders	Mathematical Sciences

EXTRAORDINARY ASSOCIATE PROFESSOR

Prof K Scheffler	Computer Science
Prof A Welte	Mathematical Sciences

SUPPORT STAFF

Mrs HA du Plessis	Computer Science
Ms L Adams	Mathematics
Ms W Isaacs	Mathematics
Mr B Jacobs	Mathematics
Mrs OM Marais	Mathematics
MS Rabie	Mathematical Sciences
Mrs MM Rhoda	Applied Mathematics
Mr AL Roman	Applied Mathematics
Mr D Stephanus	Computer Science
Mrs M van Niekerk	Applied Mathematics
Dr N Hale	Applied Mathematics

POSTDOCS

RETIRED ACADEMICS

Dr MA Muller	Senior Lecturer
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NEW APPOINTMENTS

Dr J Brink	Senior Lecturer
Dr R Roux	Lecturer

RESIGNATIONS

M Banda	Professor of Applied Mathematics
S van der Walt	Senior Lecturer

DEPARTMENT OF MICROBIOLOGY

ACADEMIC STAFF

Prof Marinda Bloom	
Prof A Botha	
Prof TE Cloete	Vice-rector: research and innovation
Prof LM Dicks	Distinguished Professor
Prof K Jacobs	
T Jansen	
Dr W Khan	
Prof DE Rawlings	
Prof WH Van Zyl	Departmental chair, Distinguished Professor Biofuels Research Chair
Dr H Volschenk	
Prof GM Wolfaardt	Director, Stellenbosch University Water Institute and ERWAT Chair in Water Research

EXTRAORDINARY PROFESSORS

Prof Axcell
Prof L Lynd
Prof BA Prior
Prof J Thevelein
Prof D Toerien

SUPPORT STAFF

J Daniels
LJ Daniels
J de Kock
M Gey van Pittius
MH Koopman
M Stuurman
T van der Merwe
L van der Westhuizen
W Wentzel

DEPARTMENT OF PHYSICS

ACADEMIC STAFF

Prof EG Rohwer
Dr L Boonzaaier
Dr GW Bosman
Dr A du Plessis
Prof HC Eggers
Mr D Geduld
Prof HB Geyer
Dr H Kriel
Prof KK Müller-Nedebock
Prof PH Neethling
Prof RT Newman
Prof P Papka
Prof FG Scholtz
Prof HPH Schwoerer
Dr JA Stander
Dr CM Steenkamp
Prof BIS van der Ventel
Dr JJ van Zyl
Prof H Weigel
Prof SM Wyngaardt

Executive head

EXTRAORDINARY PROFESSORS

Prof AA Cowley
Prof CA Dominguez
Prof A Forbes
Prof WD Heiss
Prof J Meng
Prof T Parker
Prof H Stafast
Prof Z Vilakazi
Prof HM von Bergmann

PROFESSORS EMERITUS

Prof PR de Kock
Prof PE Walters

SUPPORT STAFF	Ms C April
	Mr DP Pool
	Ms H Randall
	Ms C Ruperti
TECHNICAL STAFF	Mr MC Botha
	Mr J Burns
	Mr SH February
	Mr JM Germishuizen
	Mr GJ Louwrens
	MR DP Pool
	EJ Shields

DEPARTMENT OF PHYSIOLOGICAL SCIENCES

ACADEMIC STAFF	Prof MF Essop	Departmental chair
	Prof A-M Engelbrecht	
	Dr B Loos	
	Prof KH Myburgh	
	Dr T Nell	
	Dr B Sishi	
	Prof C Smith	
	Dr JA de Wet Strauss	
SUPPORT STAFF	Mr J Isaacs	
	Ms S Martins	
	Ms GA Simon	
TECHNICAL STAFF	Mr A Isaacs	
	Dr A Krygsman	
	Dr L Lacerda	
POSTDOCS	Dr A Brand	
	Dr P Durcan	
	Dr D Joseph	
	Dr M Kruger	
	Dr R Mapanga	