



Prof Lyn-Marie Birkholtz

Prof Birkholtz is medeprofessor in die Departement Biochemie in die Fakulteit Natuur- en Landbouwetenskappe en beklee die SARChI-leerstoel in Volhoubare Malariabeheer. As lid van die Sentrum vir Volhoubare Malaria-beheer staan prof Birkholtz aan die hoof van die Malariaparasiet- Molekulêre Laboratorium. Sy is 'n leier op die gebied van die ontdekking van teikens vir volhoubare malariabeheer.

Met haar navorsingsbelangstelling toegespits op die fisiologie, biochemie en farmakologie van die malariaparasiet, benut prof Birkholtz biochemiese verskille tussen die malariaparasiet en die menslike gasheer om innoverende chemoterapeutiese malariateenmiddels te ontwerp. Van haar belangrikste bydraes is die verheldering van die uitwerking van 'n farmakologiese middel op die teiken deur die verhouding tussen die chemiese struktuur en biologiese aktiwiteit van 'n proteïen wat 'n rol speel in swak verkende metabolisme bane te ondersoek. Veral poliamiene is hier te sprake – en prof Birkholtz beskik oor besondere deskundigheid oor poliamiene en malariamuskiete. Haar laboratorium speel 'n leidende rol in die funksionele genomika van malaria in Suid-Afrika. Prof Birkholtz is 'n stigterslid van die Suid-Afrikaanse Malaria-inisiatief. Haar werk geniet hoë internasionale aansien en sy is die enigste Suid-Afrikaanse volle vennoot van die European Virtual Institute for Malaria Research (EviMalaR, EU FP7 network of excellence). Onder die hoofstukke van boeke en talle publikasies in ISI-vaktydskrifte uit haar pen tel drie resensies wat beskou word as normaantwysende literatuur in die navorsingsveld van alternatiewe malariabeheermaatreëls. Haar navorsing is by meer as 50 plaaslike en internasionale konferensies bekendgestel. Sy het internasionale ekspertbyeenkomste oor parasiete georganiseer en werk saam met navorsers in die VSA, Frankryk, Duitsland, Swede en Australië. Prof Birkholtz het verskeie internasionale wetenskaplike en onderrigtoekennings ontvang met inbegrip van genootskappe van die Deutscher Akademischer Austauschdienst (DAAD) en die Andrew W Mellon-stigting vir haar doktorsale en nadoktorsale opleiding in Duitsland. Sy het toekennings vir die beste aanbiedings van navorsing by konferensies ontvang van die vaktydskrif *Trends in Parasitology*, en van die Internasionale Unie van Biochemie en Molekulêre Biologie (IUBMB). Sy het in 2010 navorsing in Swede en Skotland voltooi. Prof Birkholtz dien op die Raad van die Suid-Afrikaanse Vereniging vir Biochemie en Molekulêre Biologie, is lid van die internasionale Biochemical Society en die American Chemical Society, tree op as wetenskapsadviseur vir die Franse Agence Nationale de la Recherche en dien op die redaksionele adviespaneel van die *Biochemical Journal*. Sy word vir die tweede keer erken as Uitnemende Jong Navorser van die Universiteit.

Prof Birkholtz is an associate professor in the Department of Biochemistry in the Faculty of Natural and Agricultural Sciences and occupies the South African Research Chair in Sustainable Malaria Control. As part of the Centre for Sustainable Malaria Control, she heads the Malaria Parasite Molecular Laboratory and is a leader in the discipline of antimalarial target discovery for sustainable malaria control.

With a research interest focused on the physiology, biochemistry and pharmacology of malaria parasites, biochemical distinctions between the malaria parasite and the human host are exploited by Prof Birkholtz for the design of novel antimalarial chemotherapeutics. Principal contributions include elucidation of drug target structure-activity properties of proteins involved in underexplored metabolic pathways, particularly polyamines, of which Prof Birkholtz is the leading authority for malaria parasites. Her laboratory also leads a Malaria Functional Genomics Platform in South Africa. Prof Birkholtz is a founding member of the South African Malaria Initiative. Her work is of high international standing and Prof Birkholtz is the only South African full partner of the European Virtual Institute for Malaria Research (EviMalaR, EU FP7 network of excellence). Among her book chapters and numerous publications in ISI journals are three invited reviews considered as benchmark literature pertaining to alternative malaria control measures. Her research has been presented at more than 50 local and international conferences. She has organised international expert meetings on parasites and collaborates with co-workers in the USA, France, Germany, Sweden and Australia. Prof Birkholtz has received various international scientific and teaching awards including German Academic Exchange Service (DAAD) and Andrew W Mellon Foundation fellowships for her doctoral and postdoctoral training in Germany as well as *Trends in Parasitology* and International Union of Biochemistry and Molecular Biology (IUBMB) Best Research Presentation awards. She completed a sabbatical research in 2010 in Sweden and Scotland. Prof Birkholtz serves on the Board of the South African Society of Biochemistry and Molecular Biology, is a member of the international Biochemical Society and the American Chemical Society, is scientific advisor to the French Agence Nationale de la Recherche, and serves on the editorial panel for the *Biochemical Journal* (Disease Knowledge Environment). The University acknowledges her as an Outstanding Young Researcher for the second time.

Prof Birkholtz ke mothuša moprofesa wa Kgoro ya Payokhemistri ka Lefapheng la Thutamahlale a Temo le Tlhago. Bjalo ka karolo ya Senthara ya Taolo ya Malaria ya go swarelela, Prof Birkholtz o eta pele Laporatori ya Dimolekhule tša Phelakadingwe ebile ke moetapele ka lekaleng la khumano ya tebanyo ya twantšho ya malaria ya taolo ya malaria a go swarelela.

Kgahlego ya dinyakišišo tše di šeditšego go fisiolotši, payokhemistri le famakholotši ya diphelakadingwe tša malaria, dipharologanyo tša payokhemikhale gare ga phelakadingwe ya malaria le serwadi sa motho di dirišwa ke Prof Birkholtz go bopa dikhemoterapitikhale tša twantšho ya malaria tše diswa. Seabe se segolo se akaretša tlhalošo ya dika tša modiro wa sebopego sa tebanyo ya seokabatši sa diproteine tše di amegago mekgweng ya metapoliki yeo e sa utullwago ka moka, kudu dipoliyamaene, tšeo Prof Birkholtz yo e lego ketapele go tša dipheladingwe tša malaria. Laporatori ya gagwe gape e eta pele Ditšenomikse tša Tirišo ya Malaria mo Afrika-Borwa. Prof Birkholtz ke leloko la bathomi ba Mokgatlo wa Malaria wa Afrika-Borwa. Mošomo wa gagwe ke wa maemo a godimo maemong a boditšhabatšhaba; gomme Prof Birkholtz ke yena fela yo e lego modirišane wa go tšala wa Moafrika-Borwa wa Instiitšhute ya Pono ya Yuropa wa Dinyakišišo tša Malaria (EviMalaR, mararankodi a bothakga a EU FP7). Magareng a dikgaolo tša dipuku le dikgatišo tša go balega ka gare ga ditšenale tša ISI go na le ditšhekatsheko tše tharo tše a di kgopetšwego tšeo di bonwago ke lekala bjalo ka dingwalo tša papetšho tšeo di amago dikgato tše dingwe tša taolo ya malaria. Nyakišišo ya gagwe e hlagisitšwe dikhonferentšheng tša boditšhabatšhaba le tša bosetšhaba tša go feta 50. O rulagantše dikopano tša boditšhabatšhaba tša botsebi ka ga diphelakadingwe gomme o šomišana ka mo go tšeneletšego le bašomimmogo go la USA, France, Germany, Sweden le Australia. Prof Birkholtz o amogetše difoka tša thuto le tša saense maemong a go fapafapana a bosetšhaba, go akaretšwa Tirelo ya Kakananyo ya Thuto ya Jeremane (DAAD) le ditheko tša mašaleng a dinyakišišo tša Setheo sa Andrew W Mellon bakeng sa tlhahlo ya gagwe ya dithuto tša bongaka le tša ka morago ga bongaka go la Germany le yona *Trends in Parasitology* le Yunione ya Boditšhabatšhaba ya Payokhemistri le Difoka tša Tlhagošo ya Nyakišišo ye Kaone ya Payolotši ya Dimolekhule (IUBMB). O phethile nyakišišo ya gagwe ya sabatikale ka 2010 go la Sweden le Scotland. Prof Birkholtz ke setho sa Boto ya Mokgatlo wa Afrika-Borwa wa Payokhemistri le Payolotši ya dimolekhule, ke leloko la Mokgatlo wa Payokhemikhale wa Boditšhabatšhaba le Mokgatlo wa Dikhemikhale wa Amerika, moeletši wa tša saense go French Agence Nationale de la Recherche, gape ke setho sa sehlopha sa borulaganyi sa *Biochemical Journal* (Tikologo ya Tsebo ya bolwetši). Yunibesithi ya Pretoria e mo lemogile bjalo ka Monyakišišo o Monnyane wa Maemo a godimo lekga la bobedi.