

## More about SASAC

SASAC (Southern African Systems Analysis Centre) was built on the successes of the Southern African Young Scientists Summer Programme, a regional expansion of the IIASA (International Institute for Applied Systems Analysis) Young Scientists Summer Programme.

Realising the pivotal role applied systems analysis will play in addressing global challenges, the IIASA South African National Member Organization, the National Research Foundation (NRF) and the Department of Science and Technology (DST) established SASAC, a multi-year initiative to expand these activities to develop capacity for systems analysis in South Africa and the wider region. In 2015, the University of the Western Cape, the University of Limpopo, the University of the Witwatersrand, and Stellenbosch University won the bid to host the Centre from 2016 to 2018.

The use of applied systems analysis as a research approach is not that widespread in the South African context – although its relevance is demonstrated in national strategies such as the 10-Year Innovation Plan and the Integrated Human Resource Development Strategy. Our ambition is to grow high-level research networks internationally and to strengthen systems analysis capacity locally.

**The intention of the SASAC high-level emerging researchers programme is:**

- To expose participants to experts in systems analysis and big ideas in an urban (20 August – 29 August) and a rural (30 August – 8 September) environment.
- To expose participants to modelling approaches and tools used in systems analysis.
- To expose participants to the leadership skills needed to address current societal and environmental issues in a world of uncertainty.
- For participants to leave the programme with a manuscript draft for publication and a number of proposed new research projects that involve systems thinking.

# Welcome!

Food, water, energy, risk, climate – most of the challenges we face today can't be solved by looking at them from only one perspective. The answers lie in integrated and interdisciplinary collaboration, the very foundation of systems analysis. This is one of the few research approaches that provides the 'bigger picture' view, taking into account uncertainties, and enabling robust decision-making for a sustainable tomorrow.

It is our great pleasure to welcome you – emerging systems analysis thinkers – to our second Southern African Systems Analysis Centre (SASAC) high-level capacity-strengthening emerging researchers programme.

Programmes like this are vital. Systems analysis is one of the only tools that can span the complexity of the interconnected global problems that face us today. Building capacity in this area, boosting the knowledge and understanding of today's talented, up-and-coming researchers, offers our best chance of overcoming the substantial barriers to sustainability.

Participants in this programme will benefit from the insight from many distinguished speakers, as well as the chance to discuss systems analysis and its applications. This deeper understanding will allow us to work together to find solutions to global problems. Good luck!

**Thank you for joining us**



**Professor Thandi Mgwebi**  
Director, SASAC  
University of the Western Cape  
South Africa



**Professor Pavel Kabat**  
Director General and CEO, IIASA  
Austria

## **SASAC Welcoming Function:**

Sunday 20 August, City Lodge, Newtown, Johannesburg, 17h00 – 19h00

### **Speakers**

**Professor Adam Habib**

Vice Chancellor, University of the Witwatersrand

**Dr Ulf Dieckmann**, Programme Director, IIASA

**Professor Thandi Mgwebi**, Director, SASAC

**Dr Aldo Stroebel**, Strategic Partnerships, NRF

## SASAC Programme Schedule

### Part 1: Wits Main Campus, Johannesburg

All sessions take place in the Conference Room, 4<sup>th</sup> Floor, Wartenweiler Library, East Campus.

Date	Session	Presenters
Monday 21 August	9.00 - 10.15	<b>Michael Gastrow</b> <i>Science, Technology, and Social Systems: Building Inter-disciplinary Bridges</i>
	10.15 -10.45	Tea
	10.45 - 11.45	<b>Bob Scholes</b> <i>Stability, Resilience and All That Stuff</i>
	11.45 - 13.00	<b>Ulf Dieckmann</b> <i>Complex Adaptive Systems</i>
	13.00 - 14.00	Lunch
	14.00 – 16.00	Participant presentations
Tuesday 22 August	9.00 - 10.00	<b>David Everatt</b> <i>Urbanisation, Social change, Sustainability and Complexity, or What a Mess</i>
	10.00 -10.30	Tea
	10.30 - 11.30	<b>Dillip Das</b> <i>Sustainable Urban Development: A Systems Approach</i>
	11.30 - 13.00	<b>Mary Scholes</b> <i>World Café Exercise on Drawing Systems</i>
	13.00 - 14.00	Lunch
	14.00 - 16.00	Participant presentations
Wednesday 23 August	9.00 - 10.00	<b>Nic Cloete-Hopkins</b> <i>Systems Thinking in Engineering.</i>
	10.00 -10.30	Tea
	10.30 - 11.30	<b>Andrew Thatcher</b> <i>Applying Systems Theory to Understand Eco-Socio-Technical Systems Interactions</i>
	11.30 - 13.00	T.b.c.
	13.00 - 14.00	Lunch
	14.00 - 16.00	Participant presentations
Thursday 24 August	9.00 - 11.00	<b>Carmen Di Rito</b> <i>Personal Mastery for Professional Success</i>
	11.00 - 11.30	Tea
	11.30 - 13.00	<b>Carmen Di Rito</b> <i>Personal Mastery for Professional Success</i>
	13.00 - 14.00	Lunch
	14.00 - 16.00	<b>Carmen Di Rito</b> <i>Personal Mastery for Professional Success</i>
	Friday 25 August	9.00 - 10.30
10.30 - 10:45		Tea
10.45 - 12.00		<b>Pat Pillai &amp; Carmen Di Rito</b> <i>Leading from the Emerging Future: From Ego-System to Eco-System Economies</i>
12.00 onwards		Free afternoon
Saturday 26 August		Free weekend, time to see some of the sights of Johannesburg, and time to sleep and shop
Sunday 27 August		Free weekend, time to see some of the sights of Johannesburg, and time to sleep and shop
Monday 28 August	9.00 - 10.30	<b>Jai Clifford-Holmes</b> <i>An Introduction to Systems Modelling using System Dynamics (SD)</i>
	10.30 - 11.00	Tea
	11.00 - 12.30	<b>Jai Clifford-Holmes</b> <i>System Archetypes and Other SD Tools</i>
	12.30 - 13.30	Lunch
	13.30 - 16.00	<b>Jai Clifford-Holmes</b> <i>Facilitated Simulation: The World Climate Exercise, Using the C-ROADs SD Model</i>
Tuesday 29 August	9.00 - 11.00	<b>Jai Clifford-Holmes</b> <i>SD basics 1: Causal Loop Diagrams (Vensim Tutorial 1)</i>
	11.00 - 11.30	Tea
	11.30 - 13.00	<b>Jai Clifford-Holmes</b> <i>SD basics 2: Stock and Flow Diagrams (Vensim Tutorial 2)</i>
	13.00 - 14.00	Lunch
	14.00 - 16.00	<b>Jai Clifford-Holmes</b> <i>From a Stock-Flow Diagram to a Simulation Model (Vensim Tutorial 3)</i>

## Part 2: Wits Rural Facility (WRF), Acornhoek, Limpopo

Wednesday 30 August	Travel to WRF	Depart City Lodge at 8h30 after breakfast Packed lunch on the bus. Estimated time of arrival 16h00
<b>Date</b>	<b>Session</b>	<b>Presenters</b>
Thursday 31 August	9.00 - 10.15	<b>Wayne Twine</b> <i>A Savanna Socio-ecological System in Flux: Insights from Bushbuckridge, South Africa</i>
	10.15 – 10.45	Tea
	10.45 – 12.00	<b>Mark Collinson</b> <i>Rural Population Dynamics, Livelihoods and Health: Evidence from Agincourt Health and Demographic Surveillance System</i>
	12.00 – 1.00	<b>Cornelis Roelofse</b> <i>Systems Approach and Analysis in Crime Prevention</i>
	1.00 – 14.00	Lunch
	14.00 – 16.30	<b>Mary Scholes</b> <i>Introduction to Writing</i>
Friday 1 September	9.00 - 10.30	<b>Piotr Magnuszewski</b> <i>Simulation Games as New Methods for Understanding Stakeholder Interaction and Decision-making in Complex Systems: The Case of the Water-Food-Energy Nexus Game.</i>
	10.30 - 11.00	Tea
	11.00 - 13.30	<b>Piotr Magnuszewski</b> <i>Simulation Games as New Methods for Understanding Stakeholder Interaction and Decision-making in Complex Systems: The Case of the Water-Food-Energy Nexus Game</i>
	13.30 - 14.30	Lunch
	14.30 - 15.30	<b>Adam French</b> <i>Risk and Resource Governance in Complex Watershed Systems</i>
	15.30 - 16.30	<b>Mary Scholes</b> <i>Writing Well</i>
Saturday 2 September	10.00 - 16.00	Visit to local communities
Sunday 3 September	9.00 - 17.00	Visit to the Kruger National Park
Monday 4 September	9.00 - 11.00	<b>Jai Clifford-Holmes</b> <i>Modelling Case Studies</i>
	11.00 - 11.30	Tea
	11.30 - 13.00	<b>Jai Clifford-Holmes</b> <i>Modelling Case Studies</i>
	13.00 - 14.00	Lunch
	14.00 - 16.00	<b>Jai Clifford-Holmes</b> <i>Modelling Case Studies</i>
Tuesday 5 September	9.00 - 11.00	<b>Jai Clifford-Holmes</b> <i>Modelling Case Studies</i>
	11.00 - 11.30	Tea
	11.30 - 13.00	<b>Jai Clifford-Holmes</b> <i>Modelling Case Studies</i>
	13.00 - 14.00	Lunch
	14.00 - 16.00	<b>Jai Clifford-Holmes</b> <i>Modelling Case Studies</i>
Wednesday 6 September	9.00 - 11.00	<b>Jai Clifford-Holmes</b> <i>Peer-to-Peer Presentation of Cases</i>
	11.00 - 11.30	Tea
	11.30 - 13.00	<b>Jai Clifford-Holmes</b> <i>Training Wrap-up</i>
	13.00 - 14.00	Lunch
	14.00 - 16.00	<b>Mary Scholes</b> <i>Selecting the correct journal for publication</i>
Thursday 7 September	9.00 - 11.00	<b>Mary Scholes</b> <i>Writing the discussion and abstract</i>
	11.00 - 11.30	Tea
	11.30 - 13.00	<b>Mary Scholes</b> <i>Writing the discussion and abstract</i>
	13.00 - 14.00	Lunch
	14.00 - 16.00	<b>Mary Scholes</b> <i>Writing the discussion and abstract, and programme evaluation</i>
Friday 8 September	Travelling to Johannesburg	Depart WRF at 7h30 Packed breakfast and lunch on the bus

## Profiles of Speakers and Presenters



### **Dr Jai Kumar Clifford-Holmes**

Jai is an independent researcher, policy analyst, consultant, system dynamics modeller, and project and process manager in the South African water sector. He holds a PhD in Water Resource Science in addition to qualifications in project management, social sciences, and system dynamics modelling, awarded between Rhodes University, Stellenbosch University, and Delft University of Technology (the Netherlands). He was a 2011 Mandela Rhodes Scholar, a 2017 Mandela Washington Fellow, and was a founding member of the South African System Dynamics chapter, where he served on the policy council from 2014–2016.

He has published in a number of international journals (including *Water Policy*; *Systems Research and Behavioral Science*; and *Ecosystem Services*) whilst holding an associate-level position in the Institute for Water Research at Rhodes University. Jai is also an associate of the Association for Water and Rural Development (AWARD), which is the implementing agent for the USAID: South Africa RESILIM-O programme. He is the team leader and project manager of a collaborative modelling process within RESILIM-O that is aimed at sustainably and equitably enhancing regional water security. Jai's driving interest and developing speciality is bringing together people, process, and content in water management and water governance projects.



### **Mr Nic Cloete-Hopkins**

Nic is the Senior Lecturer for Systems Engineering in the Transnet Centre for Systems Engineering in the Faculty of Engineering and the Built Environment, University of the Witwatersrand. His education is from both an engineering and non-engineering background – he has a BCom in Information Systems and Accounting from the University of Cape Town and an MSc in Systems Engineering Management from University College London. He has been involved in Systems Engineering professionally for 20 years in Africa, UK, Europe and Indonesia.

His specific areas of experience and responsibilities include:

- Systems training and education (including research), covering Systems Definition, Systems Thinking, Systems Engineering and Systems Science.
- Systems engineering management (i.e. conceptual and architectural framework development and management, lifecycle management, requirements management, interface management, systems assurance and integration).
- Transport infrastructure logistics (i.e. multi-model freight transport infrastructure conceptual and architectural framework development, costing and discounted cash flow modelling providing a link between engineering costing and finance).



### **Dr Mark Collinson**

Mark was co-instrumental in establishing the MRC/Wits Agincourt Health and Demographic Surveillance System in rural Mpumalanga in 1992 and has led the INDEPTH Migration, Urbanisation and Health Working Group since 2003. He is principal investigator of a multi-country project called the Multi-centre Analysis of the Dynamics of Internal Migration and Health (MADIMAH). He is co-PI of a five-year NIH award called "Migration, Urbanisation and Health in Transition settings" which follows rural internal migrants to keep track of their health and economic outcomes. He is Director of the South African Population Research Infrastructure Network (SAPRIN), which is a new national research infrastructure that will harmonise all three of South Africa's existing health and demographic surveillance system nodes and develop new interconnected nodes in multiple urban settings.



### **Professor Ulf Diekmann**

Ulf is Program Director of the Evolution and Ecology Program (EEP) at the International Institute for Applied Systems Analysis (IIASA) in Laxenburg, Austria. He is working on the theory of adaptive dynamics, fisheries-induced evolution, cooperation evolution, speciation theory, spatial ecology, life-history theory, and on problems in theoretical evolutionary ecology. Ulf has a bachelor's degree in physics and a master's degree in theoretical physics from the University of Aachen, and a PhD in theoretical biology from Leiden. He obtained his Habilitation (*venia legendi*) in biomathematics from the University of Vienna.

He has worked at Stanford University and the Xerox Palo Alto Research Center, California, USA; the Research Center Jülich, Germany; the University of York, UK; Leiden University, the Netherlands; and the University of Vienna, Austria. He has been a visiting professor at the University of Montpellier, France, and a research fellow at the Institute for Advanced Study, Wissenschaftskolleg zu Berlin, Germany. Ulf Diekmann has published five edited volumes and is the author or coauthor of more than 200 scientific publications.



### **Professor Dillip Das**

Dillip has a PhD in Urban and Regional planning with a Civil Engineering and City Planning background. He worked at the Universities of India and Ethiopia, and is currently engaged in teaching, research and community engagement activities as an Associate Professor in the Department of Civil Engineering at Central University of Technology, Free State, South Africa. Dillip worked for several years as an engineer and planner in consultancies and in the government sector in India. He has taught and guided both undergraduate and post graduate students in Civil Engineering, Civil and Urban Engineering, and Architecture and Urban Planning.

Dillip has worked in the areas of sustainable urban and regional development, and sustainable urban, road and transportation planning. His research interests under sustainable urban and regional development include systems analysis, system dynamics modelling, infrastructure planning, smart cities, transportation planning, and tourism development. He has co-authored two books as the lead author on Planning for Regional Tourism Development and Planning for balanced regional development, and published about 100 peer-reviewed journal articles and conference papers.



### **Professor David Everatt**

David (BA (Hons), UEA; D Phil, Oxford) is the Head of the Wits School of Governance, and former Executive Director of the Gauteng City-Region Observatory (2008-2015). He has over 25 years of experience in applied socio-economic and development research, designing and implementing monitoring systems, and programme evaluation. He was Vice-President (Africa and the Middle East) for the 'Sociology of Youth' committee of the International Sociological Association for 10 years, now sits on their Advisory Board, and is a member of the National Statistical Council; serves on the Board of the Charlotte Maxeke Hospital; and the Ahmed Kathrada Foundation Board. David has published five books and his articles have appeared in local and international journals.

David has managed and/or participated in over 300 development projects, primarily in Africa. He was responsible for path-breaking research into youth marginalisation and out-of-school youth in South Africa in the early 1990s; he was the chief evaluator of the South African Constitutional Assembly between 1995 and 1997; and has served on successive election polling teams since 1994. David designed civic education programmes in Kenya and Uganda, and led the Advisory Team reviewing Kenya's Governance, Justice, Law and Order Sector (GJLOS) Reform Programme. He also headed a 2-year study of sustainable livelihoods in the 21 poorest nodal areas in South Africa. He was the founding Executive Director of the Gauteng City-Region Observatory (GCRO), and the founding partner of Strategy & Tactics, a development consultancy.



### **Dr Adam French**

Adam French is the inaugural Peter de Jánosi Postdoctoral Research Scholar in the Risk and Resilience and Advanced Systems Analysis programmes at the International Institute for Applied Systems Analysis (IIASA).

Adam's research focuses broadly on resource governance and risk management in complex systems. He is particularly interested in water-related conflict and the challenges of integrated water resource management in multi-level watershed systems. Adam completed his PhD in Environmental Studies at the University of California, Santa Cruz, and was a Ciriacy-Wantrup Postdoctoral Fellow in the Energy and Resources Group at the University of California, Berkeley prior to joining IIASA.



### **Dr Michael Gastrow**

Michael is a Chief Research Specialist in the Education and Skills Development research programme of the Human Sciences Research Council. His research focuses on innovation, skills development, public understandings of science, and science communication, in sectoral studies in biotechnology, astronomy, automotive manufacturing, ICTs, and the study of innovation for inclusive development and global innovation networks.

Michael is currently leading research into the human development aspects of the SKA telescope and the development of a monitoring and evaluation framework for the Department of Science and Technology's Science Promotion Directorate. He is interested in an inter-disciplinary understanding of the interface between science, technology, and society, and systems thinking on the inter-relationships between systems of innovation, skills development systems, communication systems, and the systemic context of the public sphere.

### **LifeCo UnLtd SA**

#### **Carmen Di Rito and Patmanathan (Pat) Pillai**



Carmen, a graduate from the University of Witwatersrand, is a co-founder, trustee, and Chief Development Officer (CDO) of LifeCo UnLtd. Since 1997, LifeCo UnLtd has worked at developing humanised, purpose-centred individuals who are critical thinkers and practitioners. The organisation facilitates the development of people through dialogue, debate, practice and capital, and uses these methods as process accelerators. It tackles inequality and believes in growing social capital, by finding, funding and supporting impact (social and environmental) entrepreneurs.



Pat, Chief Executive Officer (CEO) of LifeCo UnLtd, is a social impact entrepreneur and Ashoka Globalizer Fellow, who founded LifeCo UnLtd SA twenty years ago. As an impact enterprise itself – 100% owned and governed by a trust – LifeCo UnLtd SA has an asset base of \$10m, has distributed just over \$10m in impact capital and has a \$5m Impact Fund. LifeCo operates nationally and has reached over 100 000 students and over 4 000 young entrepreneurs to date, with over 124 established entrepreneurs in its network currently. LifeCo UnLtd is a founder member of GSEN (50+ member nations [www.gsen.global](http://www.gsen.global)). LifeCo was voted among the top 10 most trusted and admired Social Enterprises in South Africa by Ask Africa.



### **Dr Piotr Magnuszewski**

Piotr is a research scholar at the International Institute for Applied Systems Analysis (Austria) and a co-founder and research director of the Centre for Systems Solutions (Poland). With a background in mathematics (MSc) and Physics (PhD), he has worked as a systems modeller, professional trainer, facilitator, and researcher. He is particularly involved in linking theory and practice, science and policy, knowledge and action through diverse systems and knowledge management tools.

Piotr has led and participated in many projects, encompassing many diverse themes, such as sustainable development, connecting science and policy through knowledge brokering, and the importance of culture for disaster risk management.

He has designed and applied many simulation and role-playing games addressing the issues of complexity, sustainability, resilience, development and disaster risk management, climate-related risks, and systems transitions, such as 'Climate Game', 'Flood Resilience Game', 'Gifts of Culture', 'Nexus Game', and "Energy Transition Game". Piotr has also authored many research and educational publications.



### **Professor Cornelis Roelofse**

Cornelis is currently Professor of Criminology and Criminal Justice at the University of Limpopo. He has a PhD in Criminology from Unisa and completed the Management Development program at the School of Business Leadership at the same university. He was Head of Security for Koeberg Nuclear Power Station and later joined the University of the North (now Limpopo) as a lecturer in the Department of Criminology, and became an Associate Professor in Criminal Justice at the University of Venda. After being elected to the Provincial Parliament of Limpopo, Cornelis served on the Portfolio Committee on Safety and Security. He developed a security risk management model, based on a probability model involving cost-efficiency as an outcome. He developed new theoretical perspectives such as Reciprocal Moral Dualism for police behaviour, Encroachment Theory on organised crime and developments in crime prevention.

Cornelis is Deputy President of the All Africa Criminal Justice Society, and sub-editor of *Just Africa*, the society's journal. He is a board member of the Criminological and Victimological Society of Southern Africa, and the Policing Association of Southern Africa, and serves on six other editorial boards in South Africa, Western and Eastern Europe. He consults on security and risk assessment and has published a number of books, chapters and articles in accredited journals on security, policing and crime prevention.



### **Professor Mary Scholes**

Mary is a graduate of the University of the Witwatersrand and is currently a Professor in the university's School of Animal, Plant and Environmental Sciences, where she holds a Research Chair in Systems Analysis. Her publication record is extensive and she has mentored over 70 postgraduate students and served on the university's Senate for over 25 years. Mary has been awarded a number of national and international awards including the Vice-Chancellor's Teaching, Research and Academic Citizen awards. She chairs the advisory boards of the Max Planck Institute for Chemistry and the International Institute of Applied Systems Analysis and is a member of the jury for the Volvo Environment Prize. She is a Fellow of the Royal Society of South Africa and of the South African Academy of Science, and is a member of the Royal Swedish Academy of Agriculture and Forestry.

Mary's research activities focus on soil fertility, food security and biochemistry in savannas, plantation forests and croplands and she is actively involved in monitoring the impacts on human health and the environment of the new power stations in the Waterberg.





### **Professor Robert (Bob) Scholes**

Bob is a systems ecologist with a particular interest in the savannas of Africa. He trained under Professor Brian Walker at the University of the Witwatersrand and Professor Pedro Sanchez at North Carolina State University and has over three decades of field experience in many parts of the world. He is among the top 1% of environmental scientists worldwide based on citation frequency, publishing widely in the fields of savanna ecology, global change, and earth observation.

Bob has led several high-profile studies (such as the Assessment of Elephant Management, Commission on Sustainable Agriculture and Climate Change, Strategic Assessment of Shale Gas Development) and large research campaigns (SAFARI 2000, Southern African Millennium Assessment). He was an author of the Intergovernmental Panel on Climate Change 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> assessments and was co-Chair of the Conditions Working Group of the Millennium Ecosystem Assessment and is co-Chair of the Intergovernmental Platform on Biodiversity and Ecosystem Services Assessment of Land Degradation.

Bob has been a member of the steering committees of several global earth observation bodies and has been on the boards of the International Centre for Research in Agroforestry, the South African National Parks and South African National Space Agency. He is a Foreign Associate of the US National Academy of Sciences, Fellow of the CSIR, Fellow of the Royal Society of South Africa, Member of the South African Academy, a Research Associate of the CSIR, and NRF A-rated scientist, and a winner of the National Science and Technology Forum Lifetime Contribution to Science award

### **Professor Andrew Thatcher**

Andrew chairs the 'Human Factors and for Sustainable Development' Technical Committee of the International Ergonomics Association (IEA) and is one of the editors of *Ergonomics*.

His research interests are concerned with building theoretical models that connect social and ecological ideas to support human factors and ergonomics work. This work looks at how complex adaptive system analysis might be used to understand sustainability in human factors and ergonomics systems. It applies concepts such as system resilience and adaptability to understand how humans might facilitate or hinder sustainability and sustainable development. His empirical work looks at various aspects of ergonomics and sustainability and includes trying to understand the psychological factors in the adoption of sustainable technologies and determining the health and well-being of 'green' buildings for building occupants. He is the ergonomics specialist on the World Green Building Council's technical committee on wellbeing, health, and productivity in green buildings. He is currently President of the Ergonomics Society of South Africa and Chair of Industrial/Organisational Psychology at Wits.

### **Professor Wayne Twine**

Wayne is an Associate Professor in the School of Animal, Plant and Environmental Sciences, University of the Witwatersrand. He is based at the Wits Rural Facility where he has been the co-ordinator of the SUNRAE (Sustaining Natural Resources in African Ecosystems) research programme since 1998.

Wayne's research focuses on communal socio-ecological systems, and includes investigation of sustainable rural livelihoods, resource ecology, and community-based natural resource management in the former homelands of South Africa. He has published 40 papers in peer reviewed scientific journals, and has been the author or co-author of five book chapters. He has supervised or co-supervised 2 PhD, 13 MSc and 19 honours students who have graduated.



## Profiles of Participants



### **Dr Samuel Adu-Acheampong**

Biodiversity Conservation, Agricultural Conservation, Entomology  
University of Venda

Samuel has a PhD in conservation ecology. His thesis used insects as indicator organisms in a landscape ecology study focused on biodiversity conservation management. It measured the effect of habitat change on grasshoppers and used natural areas as a controlled environment. It recommended the best possible ways of improving biodiversity at the farm level. It also had a geographic information based species distribution modelling chapter to predict key environmental variables necessary for the distribution of grasshoppers.

Samuel is a dynamic researcher with experience in the laboratory as well as field surveys at various levels. He is skilled in geographic information systems, species distribution modelling, and transdisciplinary training. His main focus is on sustainable agricultural production and his passion is the production of food to feed the ever increasing human population without adversely affecting biodiversity. He hopes to link species distribution models to ecosystems analysis with a key focus on invertebrates and small mammals. He hopes to acquire knowledge in systems analysis so that he can link agricultural production and conservation of natural resources in sustainable production. Samuel's current research seeks to measure the impact of drivers of global change specifically invasive plants and fire on functional diversity of both plants and invertebrate communities in riparian ecosystems. It compares invertebrate food webs between various land-uses and the above mentioned drivers to understand the resilience of riparian systems to global change.

Samuel has published four articles in international journals and is a member of the Orthopterist society.

### **Dr Nnamdi Anosike**

Mechanical Engineering  
University of Cape Town



Nnamdi has a degree in Mechanical and Production Engineering, a Masters in Mechanical Engineering from the University of Glasgow, and PhD in Thermal and Propulsion Engineering from Cranfield University, United Kingdom. He is passionate about engineering and developed skills in product design and development during his Masters studies at the University of Glasgow.

Nnamdi was introduced to Gas Turbine Engineering by Professor Pericles Pilidis and the late Dr Kenneth Ramsden of Cranfield University. He now specialises in research and teaching relating to Gas Turbine Engineering and its wide applications including power generation, gas turbine performance on different fuels, and hybridisation with concentrated solar power. He worked as a Graduate Trainee Engineer and, for a short time, in the Merchant Navy as the Engineer Officer of the Watch. He has worked in the production industry, in a research institute, as a university lecturer, and is currently a Research Fellow at the University of Cape Town. Nnamdi is also a journal reviewer for Elsevier, among others.



**Dr Amos Apraku**

Climate Change – Vulnerability, Mitigation, Adaptation  
University of Fort Hare

Amos was born in Kokoa, a rural farming community in the Brong Ahafo region of Ghana. He studied Sociology and History at the University of Cape Coast, Ghana, where he obtained a Bachelor of Arts (Hons) degree in 2004. In 2010, he obtained his Masters degree in Development Studies from the Nelson Mandela Metropolitan University, South Africa. Amos graduated with a Doctor of Philosophy (PhD) Social Sciences (Sociology) degree from the University of Fort Hare. He was awarded a one-year postdoctoral scholarship in January 2016 by the Association of Commonwealth Universities (ACU) under its Climate Impacts Research and Leadership Enhancement (CIRCLE) programme, and successfully completed this fellowship at the University of Nairobi, Kenya.

Amos is currently a postdoctoral Research Fellow at the Fort Hare Institute for Social and Economic Research (FHISER) and a Time-on-Task lecturer in the Sociology department of the University of Fort Hare, East London Campus. His research areas include climate change risk and vulnerability assessment; climate change impact mitigation and adaptation strategies, food (in)security, indigenous knowledge systems, small-scale farming, and rural livelihood systems.



**Dr Simeon Bezeng Bezeng**

Botany  
University of Johannesburg

Bezeng is currently a postdoctoral research fellow at the University of Johannesburg. His global interest is conservation biology with the primary objective of understanding drivers of biodiversity loss. He seeks to understand the forces that shape global biodiversity and if we can predict the future of biodiversity in a changing world.

He focuses specifically on key ecological questions related to species invasion, climate change, and the evolution of African savannas using phylogenetics techniques, comparative analyses, population genomics, and intensive fieldwork. These are among the central questions in which his research programme focuses. Bezeng is a British Royal Society Newton African Fellow and currently sits on numerous review panels including the NRF, IBOL, SAJB, IJFS, and CBS.



**Dr Subhadeep Bhattacharjee**

Wildlife Science  
University of Johannesburg

Subhadeep is an ecologist and wildlife biologist and is currently a Post-Doctoral Research Fellow in the Department of Geography, Environmental Management and Energy Studies at the University of Johannesburg. He has an MSc in Environment Management from the Forest Research Institute University, Dehradun, and a PhD in Wildlife Science from the Wildlife Institute of India and Saurashtra University. His PhD thesis focused on tiger ecology and monitored a population of reintroduced Royal Bengal tigers in Sariska Tiger Reserve, Rajasthan, India, collecting ecological data for a period of five years.

Subhadeep was a field biologist in Ranthambhore Tiger Conservation Foundation (RTCF) in Rajasthan, monitoring data collection of tiger and other wildlife, classification, analysis and archiving of data. He designed scientific protocols of wildlife census and socio-economic surveys and voluntary village relocation schemes for the reserve. Subhadeep has extensive experience in the study of both social and natural sciences in various biodiversity conservation oriented projects and intends studying the species distribution modelling of native and alien mammals of South Africa in response to predicted climate change scenarios. He has published a number of articles in international journals.



**Dr Nolwazi Bhembe**

Applied Microbiology  
University of Fort Hare

Nolwazi was born in Mbabane, Swaziland, and is currently a Post-Doctoral Fellow in the Department of Biochemistry and Microbiology at the University of Fort Hare, South Africa. She has a Bachelor of Science degree in Biochemistry and Microbiology from the University of Fort Hare, an Honours degree in Biochemistry, a Masters (cum laude) in Microbiology, and a PhD in Microbiology.

The focus of her doctoral research was on determining the prevalence of bovine tuberculosis (BTB), with emphasis on characterising the *mycobacterium tuberculosis* complex (MTBC) isolates and increasing the understanding of the MTBC genetic diversity in the Eastern Cape Province of South Africa, in both cattle and human samples. The results of her study confirmed MTBC strains from slaughtered cattle and farmers. The findings elucidated the diversity of MTBC strains in the Eastern Cape and a low clustering rate of the MTBC strains that indicated continuing transmission of tuberculosis in the province.

Nolwazi has published 3 journal articles so far and 3 other manuscripts are currently undergoing peer-review in different peer-reviewed journals. She has presented her findings at both national and international conferences. Nolwazi is a member of the South Africa Society of Microbiology (SASM), the American Society of Microbiology (ASM) and the Organisation for Women in Science for the Developing World (OWSD).



**Dr Michelle Brear-Ngobese**

Public Health, Development and Community Participation  
University of the Free State

Michelle is currently a Post-Doctoral Research Fellow in the Afromontane Research Unit (School of Education Studies), University of the Free State (Qwaqwa), and an Adjunct Research Fellow at Monash School of Public Health and Preventive Medicine. She received her PhD for a study titled 'Participatory action research for health capability in a rural Swazi community caring for children affected by AIDS: An ethnography', from Monash University's School of Public Health and Preventive Medicine in 2017.

Michelle is a critically-reflexive health systems researcher, whose research investigates how human and social dynamics influence health and sustainable development in communities affected by AIDS. She uses qualitatively-driven mixed-method, participatory and ethnographic approaches and participant observation, interview and survey methods. Her analysis is informed by systems thinking, social justice theories of development, and structural theories of social relations. It is focused on understanding the complexities of community social systems. Her specific research interests include: the process and outcomes of participation; the social determinants of health, especially gender and poverty; and ethics in community-based and participatory research.

Michelle spent over ten years participating in a grassroots community-based early childhood development project in Swaziland, and has worked with several prestigious research centres including the World Health Organisation Centre for Environmental Health at University of Western Sydney and Fiji School of Medicine, and the Australian Institute of Health Innovation at the University of NSW. She has published her research in international public health journals including *Culture Sexuality and Health* and *Health Promotion International*.



### **Dr Bloodless Dzwairo**

Engineering Sciences  
Durban University of Technology

Bloodless currently holds the positions of Research Grants Administrator and Senior Researcher in the Research and Postgraduate Support Directorate, and is a Research Associate in the Department of Civil Engineering at the Durban University of Technology (DUT), South Africa. She has an academic background in civil engineering, environmental management, chemistry and microbiology, and is a technical expert specialising in integrated water resources management including environmental modelling, GIS and remote sensing. She has published/co-published papers related to these specialisations.

Bloodless's research, which seeks to provide sustainable solutions, examines the Vaal, uMngeni, Mkomazi, Mhlatuze and Limpopo river basins of South Africa. She also leads a multidisciplinary Water Group of Masters and Doctoral students. Selected postgraduate studies supervised are: Inanda Dam's operational rule curves ecosystem-specific water quality indices optimisation of water treatment chemical dosages and water usage analysis water losses in Ugu District Municipality integrated hydrological modelling for sustainable water allocation plans integration of water quality improvement systems bacteriological water quality compliance, waste activated sludge treatment processes, tuberculosis treatment adherence outcomes, anaerobic greywater treatment, and life-cycle assessment based modelling.

Bloodless has published a paper entitled 'Making a case for a systems thinking approach to integrated water resources management (IWRM), which is linked to the theme of the SASAC Emerging Researchers Programme.



### **Dr Andrew Eloka-Eboka**

Mechanical Engineering  
University of KwaZulu-Natal

Andrew has a PhD in Mechanical Engineering from the University of KwaZulu-Natal, South Africa, a Masters in Mechanical Engineering with a speciality in Energy Studies from the University of Agriculture, Makurdi, and an Honours in Chemical Engineering/Technology from Nnamdi Azikiwe University, Nigeria. He is currently a Research Fellow at the University of KwaZulu-Natal with research innovation in the area of green and renewable energy technologies, thermodynamics and internal combustion engines, with special interests in biofuels, biomass, biodiesel and environment. His niche area reflects the Food-Energy-Water-Climate nexus.

Andrew spearheads research in the emerging research fields of bio-nanotechnology for engineering and thermal applications, investigative/comparative studies of generic biofuels' sustainability, and technologies using South African case studies, at UKZN's Green Energy Solution Research Centre. He has developed research proposals to establish engine testing facilities and a laboratory for bio-nanotechnology research and thin film solar cells development.

He was selected to attend the European Science Forum, 2016, and has received several awards and grants as well as a doctoral research fellowship at TWAS ROCASA where he utilised the state of the art facilities and laboratories for research on green energy from microalgal technology. Andrew has nearly ten years' research experience, has delivered papers at various local and international conferences, published more than 25 peer-reviewed journal publications, and is currently supervising Masters and Doctoral students in various areas of his research interests. He plans to revolutionise Africa and the world with research ideas and innovation in green energy and sustainability.



**Dr Brian Flepisi**

Clinical Pharmacology, HIV-associated Cancer  
University of the Western Cape

Brian was born in East London, Eastern Cape, and grew up in Plettenberg Bay. He obtained his undergraduate and postgraduate degrees at Stellenbosch University, and has a PhD in Clinical Pharmacology. He currently works as a lecturer in the Department of Medical BioSciences at the University of the Western Cape.

His primary research interest is HIV-associated cancer and aims to determine the mechanisms by which HIV and altered immune mechanisms lead to the development of cancer. He has published four articles in accredited journals and another two are under review.



**Dr Jackson Justo**

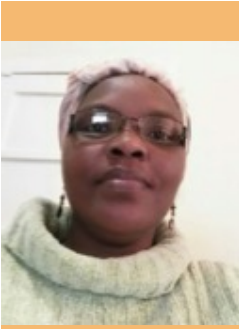
Electrical Engineering  
University of Pretoria

Jackson hails from the Shinyanga region of Tanzania and obtained his BSc in Electrical Engineering from the University of Dar es Salaam (UDSM). He researched the design of distribution transformer oil protection systems against theft, under Professor Chambega, and was funded by the government of Tanzania. He worked in the Department of Electrical Engineering at UDSM as a tutorial assistant and later as a lecturer.

Jackson received high-tech training on the application of information technology for electrical engineering education at the Institute of Technology Surabaya (ITS), Indonesia, funded by JICA and organized by the Indonesian government. He completed a combined Masters/Phd programme at Dongguk University in Seoul, South Korea, under Professor Jin-Woo Jung. Jackson is currently a postdoctoral research fellow at the University of Pretoria, under Professor Bansal.

Jackson's research interests include modelling, control and grid-integration of distributed generation units based on renewable energy resources, power converters control and application in power systems, electrical drives for electric vehicles, intelligent control strategies, and optimisation of smart-grid operations with DC and AC microgrids.

He has published numerous technical reports and international peer-reviewed journal articles. He is a member of the Engineering Registration Board (ERB) and the Institute of Engineers Tanzania (IET). He is married to Dr Diana B Kahangwa (MD) and has two daughters Kareen and Loren.



### **Dr Faith Kimathi**

Teacher & Curriculum Development, Geography  
University of the Witwatersrand

Faith completed her PhD at the University of KwaZulu-Natal and is now a Post-Doctoral Fellow at the Wits School of Education. She completed her Bachelors and Masters in Education degrees at Kenyatta University, in Nairobi, Kenya.

Faith worked as a Geography teacher in Kenya and at the Legae Academy in Gaborone, Botswana, where she taught the Cambridge curriculum at IGCSE and A level. She enjoyed teaching fieldwork, physical geography and organising field excursions for high school students and preparing the learners for practical exams under extra contextual conditions. Faith would sometimes use the school swimming pool to demonstrate river/coastal measurements tasks since Botswana has no permanent rivers on which to carry out actual practical tasks. She gained extensive experience as a Head of Department of Humanities and as a Geography teacher, and developed good research skills. She left high school teaching inspired to further her own studies.

As a new education researcher and postgraduate supervisor at WSoE, Faith would like to engage with her peers and learn new analysis approaches to carry out research on classroom environments and teaching practices in the diversity of South African schools. She is currently working with Professor Rusznyak and JET Education Services on a research project exploring the Professional Standards for Teaching in South Africa. To engage adequately with these research experts, one requires good analytical skills to understand the data collected from various stakeholders. Faith believes that systematic and accurate analysis data collected from educators and other stakeholders about the social-economic environments and learning environments can give more insights into the schooling system and teacher education in South Africa.

Faith a self-motivated, hard working scholar who now lives with her family in Pietermaritzburg, South Africa.



### **Dr Felistas Mashinya**

Infectious Diseases, Cardiovascular Disease Risk  
University of Limpopo

Felistas completed her Doctoral studies at the University of Limpopo, South Africa. She is currently a Senior Lecturer in the Department of Pathology and Medical Sciences and serves on the School of Health Care Sciences Quality Assurance and the University of Limpopo's Health and Safety committees. Felistas is a reviewer for *Current HIV Research*, *PLOS ONE*, and the *South African Medical Journal*. Her recent nomination as a reviewer for the African Research Excellence Fund Secretariat in the United Kingdom is a great honour and recognition of her contribution in the field of HIV and non-communicable diseases.

Felistas's research interests span both NCDs and communicable diseases, and much of her work conducted in a rural area of South Africa has been on cardiovascular risk factors in HIV-infected individuals. She is the principal investigator of the Dikgale Health and Demographic Surveillance Site (HDSS) in the Africa Wits-INDEPTH Partnership for Genomic (AWI-GEN) research project, a collaboration focusing on six sites in four African countries (South Africa, Kenya, Ghana and Burkina Faso). This project, funded by National Institute of Health in the United States, focuses on the interplay between genomic and environmental risk factors for cardiometabolic diseases.

Apart from academic activities, Felistas enjoys walking or jogging long distance.



### **Ms Tshifhiwa Moureen Masikhwa**

Applied Physics  
University of Pretoria

Tshifhiwa was born and grew up in Limpopo province, South Africa, where she received her primary and high school education. She has Bachelors, Honours, and Masters degrees in Physics from the University of the Western Cape (South Africa), and a PhD from the University of Pretoria.

Her thesis on the synthesis and characterisation of Co-based hydroxides and metal disulphides with various forms of carbon for supercapacitor applications, looked at the synthesis of cobalt-based hydroxides and transition metal disulphide composites with carbon materials such as graphene foam and activated carbon by hydrothermal techniques for energy storage application. Because faradaic materials have poor electrical conductivity and low electrochemical stability, while carbon materials are known to have good electrical conductivity and electrochemical stability, the main aim was to improve the electrochemical properties of the composite material. The hydrothermal method was used to synthesise cobalt hydroxide carbonate nanorods in the presence of activated carbon (AC) to obtain cobalt hydroxide carbonate/AC composites. Faradaic materials were also synthesised using various methods in order to make graphene-based composite materials. The CoAl-LDH and MoS<sub>2</sub> were synthesised using hydrothermal technique in order to enhance both the electrical double layer properties from graphene with faradaic properties.

This study clearly showed the great potential of carbon based composite electrode materials for supercapacitor application. The research has resulted in seven publications in international accredited scientific journals.



### **Dr Brigitte Melly**

Wetland and Landscape Ecology, Geomorphology, Botany  
South African Environmental Observation Network (SAEON)

Brigitte grew up in KZN before moving to Rhodes University where she completed her Bachelors, Honours and Masters degrees in the Geography Department. She worked on a variety of projects from mapping nature trails to assessing water quality in a fjord, and finally to mapping the habitat preferences of whales and dolphins. Her PhD at Nelson Mandela Metropolitan University, Port Elizabeth, took on a similar spatial 'trend', and involved identifying wetlands in the Port Elizabeth area (NMBM), and understanding patterns in distribution, structure and ecosystem functioning.

Brigitte considers herself a spatial hydro-ecologist, since this tends to incorporate all her interests. She joined the Fynbos Node team in January 2017 after being awarded a DST-NRF Professional Development Programme (PDP) post-doctoral grant and is currently collaborating with the University of the Western Cape (UWC) on a long-term monitoring programme in the Heuningnes River system, Agulhas Plain. This area has many unique and diverse terrestrial and aquatic ecosystems but there is limited published research to date, making this a key area to work in. Brigitte will be working on understanding the hydrological dynamics of the wetland systems along the Heuningnes River system and its tributaries, and their vulnerability to global change. In addition, she will also be supporting existing student projects and management of the long-term data.

In her free time Brigitte keeps active and challenges herself in sports such as open water swimming, running, cycling, hiking (with a map), and any other adrenalin sports.





### **Dr Hooman Motamed**

Risk management in the insurance industry  
International Institute of Earthquake Engineering and Seismology (IIEES), Tehran

Hooman received his PhD in Earthquake Engineering from International Institute of Earthquake Engineering and Seismology (IIEES) in Tehran, Iran. Later, he obtained a Masters in Insurance and Risk Management from Cass Business School in London. He has been involved in a number of multidisciplinary projects and researches covering topics in natural catastrophe risk assessment, catastrophe risk model development, seismic vulnerability and risk assessment, urban disaster risk reduction, urban risk-sensitive land-use planning and (re)insurance catastrophe underwriting decision-making tools.

Hooman was a team member in the World Bank's project of 'Local Disaster Management Assessment and Implementation Strategy' carried out by IIEES. He has also received official WB certificates for completing two courses in disaster risk management and resilient cities. Hooman has worked in Iran at IIEES and the Tehran Disaster Management and Mitigation Organisation (TDMMO), in Germany at the Centre for Disaster Management and Risk Reduction Technology (CEDIM), and in the London insurance market in the UK. In addition to English, he speaks French, German and Arabic.



### **Dr Blessed Muchono**

Solid State Physics  
University of Namibia

Blessed is a lecturer in the Applied Physics department at the National University of Science and Technology (NUST), Bulawayo, Zimbabwe. He has a Bachelors degree in Applied Physics from NUST, a Masters in Applied Physics from the University of Zimbabwe, and a PhD in Solid State Physics from the University of Johannesburg.

Blessed's main research interest is condensed matter physics with a specialisation in quantum critical behaviour and spin-density-wave-effects in chromium and its alloys. He has experience in the measurement of physical properties using the Physical Properties Measurement System (PPMS), Magnetic Properties Measurement System (MPMS) and neutron diffraction measurements using the Wombart Diffractometer at the Australian Nuclear Science and Technology Organisation and the SAFARI-1 Research Reactor at the South African Nuclear Energy Corporation. Blessed has made a contribution to knowledge production through the publication of numerous peer-reviewed journal articles and conference proceedings.



### **Dr Thi Thu Hoai Nguyen**

Biotechnology  
Vietnam National University in Ho Chi Minh City

Hoai obtained her PhD degree, on the topic of the proteome of *Staphylococcus aureus*, from Greifswald University, Germany. She later pursued postdoctoral research on antibiotic resistance mechanisms in Gram-negative pathogens at the Louvain Drug Research Institute at the Université Catholique de Louvain, in Belgium.

Hoai has been working at the School of Biotechnology, International University, Vietnam National University of Ho Chi Minh City, since 2011. Her group is investigating the virulence and antibiotic resistance mechanisms of bacterial pathogens. Hoai has supervised dozens of bachelor students and 5 master students. Current research topics include antibiotic resistance mechanisms in *Staphylococcus aureus* and *Pseudomonas aeruginosa*; the antibiotic resistance profile of clinical *Pseudomonas aeruginosa* isolates; the virulence of nosocomial *Staphylococcus aureus* isolates; the antimicrobial activity of *Streptomyces spp.*; and the biomarkers of colorectal cancer.



**Dr Van Thanh Nguyen**

Materials of Science and Engineering  
Research Institute of Technology for Machinery (RITM)

Thanh is currently a materials testing expert in the materials of science and engineering sector at the Research Institute of Technology for Machinery (RITM). He was previously on the staff at the Hanoi University of Science and Technology where he supervised a number of students.

Thanh participated in a bilateral project between the governments of Vietnam and the Korea which researched manufacturing technology and the application of active carbon from rice husk in Vietnam. This project developed activated carbon products from rice husk, an agricultural waste product, to create water and air treatment products. Thanh is currently supervising a study on manufacturing technology for mixing paddles and lining plates of concrete mixers, supported by the Ministry of Finance, which is aiming to reduce the cost of concrete production.

Thanh has six years of experience in the science environment and is an energetic, ambitious person who has a mature, responsible approach to everything he undertakes. He loves science and technology and is passionate about discovering new things, conducting research, and improving his English, to further his knowledge and help his country.



**Dr Oyebanjo Ogunlela**

Business Administration  
Mangosuthu University of Technology

Oyebanjo is a Post-Doctoral Research Fellow in the Faculty of Management Science at the Mangosuthu University of Technology, Durban, South Africa. He has a PhD in Business Administration (PhD), focusing on integrated supply chains, from the University of KwaZulu-Natal, Westville Campus.

Oyebanjo has worked as an IT operations consultant at the United Nations World Food Programme (WFP) in Sunninghill, Johannesburg, setting up an IT service desk and developing process documents, working with staff capacity building in IT and project management. He worked for the Shell Nigeria Exploration and Production Company (SNEPCO) as an IT trainer and team leader for desktop support and as an executive support service delivery manager for upstream international (UI) business in sub-Saharan Africa (SSA), managing regional IT service delivery covering 3 countries and 6 geographic locations. He was a capacity building manager providing training to client organisations for Technology Derivatives, Lagos, Nigeria, and head of training for Aptech Limited Ikoyi, leading a team of 8 trainers to develop and deliver individual and corporate training to client organisation. At Reid Crowther international consulting engineers, Oyebanjo was as team leader for geographic information systems/land related information systems (LRIS) for Lagos State, for the Government of Nigeria, and a state construction inspector for the World Bank-assisted water expansion project.

He has core competence in research, consulting, project management and IT service and support, business analysis and training in the exploration and production industry, as well as financial organisations, government parastatals and the academic environment.



**Dr Noah Makula Pauline**

Geography (Climate Change Adaptation)  
University of Dar es Salaam

Noah is a lecturer and researcher at the University of Dar es Salaam, Institute of Resources Assessment (IRA). He holds a PhD degree from the University of the Witwatersrand, Johannesburg and has 10 years of experience in consulting and research in eastern and southern Africa. His areas of interest in research and consultancy are environmental management, natural resources management and climate change adaptation/mitigation. Noah has a special interest in smallholder farmers' vulnerability, coping and adaptation strategies for climate change (including climate variability) and other stresses, looking, in particular, at how such coping and adaptation may be constrained or enhanced given climate variability and change.

Noah has been involved in a number of climate change related projects and various environmental assessment projects as a consultant and reviewer. He has been invited to present papers at various international conferences related to climate change and variability that have greatly improved and broadened his understanding of these issues.



**Dr Ethel Emmarantia Phiri**

Zoology  
Stellenbosch University

Ethel is an NRF Innovation Post-doctoral Research Fellow at Stellenbosch University. Her research interests are wide and varied. She obtained a Bachelor of Science (BSc) Natural and Environmental Sciences degree (majoring in Biochemistry and Botany), and an Honours degree in Botany (Plant Physiology) from Rand Afrikaans University (now the University of Johannesburg). Ethel was awarded a Masters degree in Botany (cum laude) by Stellenbosch University following research conducted on sub-Antarctic Marion Island, where she spent a total of 13 months of data collation. Her PhD (Zoology), also from Stellenbosch University, focused on research into the molecular systematics and biogeography of freshwater crabs. Although this research deviated from what Ethel had studied in the past, she felt that it was necessary to gain molecular (genetics) skills to assist her in her my chosen field for postdoctoral research and the future.

After obtaining her PhD, Ethel embarked on a postdoctoral research fellowship in a molecular plant physiology laboratory where she investigated the phosphorus acquisition of legume plant species under phosphate deficiency. This research can be used to assess crop breeding programs and their interconnections with crop physiology under phosphorus limitations, including other commercially important legumes and non-legume species.

Because of my interests in promoting Africa as a research forward continent, my current research is on indigenous orphan crops and their potential as a solution to food security in Africa.



**Dr Terence Suinyuy**

Evolutionary Biology, Botany, Pollination Ecology, Insect Chemical Ecology  
University of KwaZulu-Natal

Terence is a postdoctoral researcher in the Pollination Ecology Laboratory, School of Life Sciences, University of KwaZulu-Natal (UKZN), Pietermaritzburg. He graduated for the University of Cape Town (UCT) with an MSc (Conservation Biology) in 2006 and a PhD (Botany). His research falls under the 'evolution and ecology' theme of IIASA.

The human population is increasing globally and its activities are continuously shaping the ecosystems and the environments it inhabits. Terence's research in evolution and ecology is vital as it enhances the patterns of production in the ecosystems and environment through ecological and evolutionary processes for the wellbeing of humanity. His research emphasis focuses on the role of floral heat and odour in the evolution of insect-plant interactions using the African cycads *Encephalartos* as model plants.

Terence is a highly motivated, diligent, and dedicated emerging scientist who is always eager to learn. His adaptability has enabled him to integrate different subjects such as biochemistry, chemistry, entomology, microbiology and physiology in pursuing his overall goals.



**Dr Phumza Vuyokazi Tikilili**

Chemical Technology  
Mangosuthu University of Technology

Phumza is currently a postdoctoral research fellow in the Faculty of Natural Sciences at Mangosuthu University of Technology. She has a PhD from the University of Pretoria focusing on the use of biological methods for treatment of wastewater. In her research, Phumza developed an innovative biological wastewater treatment process for the removal of nitrogenous compounds (pollutants) from wastewater. The study addressed the current quest for water security resulting from degraded water environments and sanitation that severely impact almost half of the population globally.

Her current research involves the removal of pesticides from water and soil environments. Although the use of pesticides is vital in agriculture, they also have adverse effects on non-target species including humans. Therefore Phumza's current research is aimed at combating the toxic effects of pesticides in order to safeguard human and environmental health. Her expertise ranges from water and wastewater treatment, and remediation of contaminated land, to waste management and pollution control.



### **Dr Simone Titus**

Emerging ICTs in higher education  
University of the Western Cape

Simone is a teaching and learning specialist in the Faculty of Community and Health Science at the University of the Western Cape. She graduated with a PhD in Education from the University of Cape Town where she developed an interest in the use of emerging technologies as a tool to mediate learning. Her special research interests are game-based learning and using emerging technologies to foster cross cultural interaction, learning and engagement in higher education. During the past seven years in academia, Simone has taught undergraduate and postgraduate students and has a growing number of Masters and PhD students under her supervision. Her current portfolio entails developing teaching and learning strategies in health science education and interprofessional education.

Simone was selected for the South African and Netherlands Programme for Advanced Development (SANPAD), AESOP Mobility to the University College of Dublin, and has been awarded grants for various other projects. Her cross-disciplinary background allows her to engage in both the health and social sciences domains, including gender studies, management and psychology. She is currently working on an EU-funded project entitled 'Caring Societies' with a focus on Health and Lifestyle Programmes.

### **Dr Viet Dung Trinh**

Branding, Communication Effectiveness and Big Data  
Vietnam National University in Ho Chi Minh City

Viet has a strong background in consumer behaviour research and management consultancy, with business experience in the B2B sectors and marketing research industry. Recent portfolios including AMR Group, Honda, and Lixil among others. He is currently the Head of the Marketing Department in the School of Business at the International University (IU), the first English-language public university in Vietnam, and part of the Vietnam National University in Ho Chi Minh City. He has been actively involved in curriculum review and courses development and teaches brand management, B2B marketing, marketing strategy, international marketing, service marketing and research design and analysis at both undergraduate and postgraduate level. Viet has supervised Bachelors and Masters research across a wide range of research areas.

Viet's research focus is on branding, communication effectiveness and big data and he has published articles in academic journals such as *Asian Journal of Business Research*, *Contemporary Management Journal*, and *Marketing Science eJournal*. He serves actively in the research community, chairing conference tracks, reviewing research papers and organising research symposiums.

### **Dr Sibusiso Zuma**

Public Health (Clinical Research)  
University of South Africa (UNISA)

Sibusiso is a health executive with more than 8 years' experience in health services management. He has a Doctor of Literature and Philosophy in Health Studies, Total Quality Management degree from UNISA and completed various management development programmes. He is an action research specialist with a special interest in health care management and systems strengthening. He is a member of the Board of Directors for the Council of Health Services Accreditation in Southern Africa – a body accredited by ISQUA to provide quality assurance services – and is currently employed as a Technical Advisor for Primary Health Care to the South African Government.



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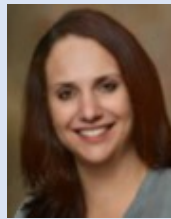


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