

1. BIOGRAPHICAL SKETCH

1.1 GENERAL INFORMATION										
Surname	Yusuf									
First names	Abdullahi Ahmed				ID Number	7806226064189				
Citizenship	SA (Permanent Resident)				Title	Prof	Female		Male	x
Place of birth	Zaria, Nigeria				Date of birth	22 June 1978				
Population group	African	<input checked="" type="checkbox"/>	Colour ed		Indian		White		<i>(Please specify)</i>	
Department	Zoology and Entomology				Position	Associate Professor				
Direct Telephone	0788876049 (mobile) 012 420 2561/4610 (office/lab)				Direct Telefax					
E-mail	abdullahi.yusuf@up.ac.za ; ayusuf@daad-alumni.de ; aayusuf@yahoo.com									
Date of appointment	01 st -January-2018				Permanent full-time	<input checked="" type="checkbox"/>	Temporary full-time			

1.2 ACADEMIC QUALIFICATIONS OBTAINED				
Degree/ Diploma	Field of study	Higher education institution	Year	Distinctions
PhD	Entomology	University of Pretoria, South Africa	2010	NA
MSc	Instrumental Analytical Sciences: Environmental Analysis	Robert Gordon University, Aberdeen, UK	2004	MSc with Distinction
MSc	Biodiversity, Wildlife and Ecosystem Health	The University of Edinburgh, UK	2015	NA
BSc (Hons)	Biological Sciences	University of Abuja, Nigeria	2000	Second Class Hons Upper Division (GPA 4.32/5.00)

1.3 WORK EXPERIENCE TO DATE		
Name of employer	Capacity and/or type of work	Period From (mm//yy to mm//yy)
University of Pretoria	Associate Professor	Jan 2022- Date
University of Pretoria	Senior Lecturer	Jan 2018 to Dec 2021
Alexander von Humboldt Foundation, Germany	Humboldt Ambassador Scientist	Nov. 2021-Date
Martin Luther University, Halle-Wittenberg, Germany	Georg Forster Experienced Research Fellow	Nov. 2016 to Feb. 2018
University of Pretoria	PI SARChI Chair M3B2	Nov 2013-Date
University of Pretoria	NRF Research Career Advancement Fellow	Dec 2014 to Dec 2017
University of Pretoria	Postdoctoral Research fellow	Nov. 2010 to Nov. 2014
ICIPE Nairobi Kenya	PhD scholar	Sept. 2006 to Feb. 2010
Ahmadu Bello University Nigeria	Assistant Lecturer-Lecturer I	Sept 2006 to Nov 2010
Kaduna State University Nigeria	Assistant Lecturer	Jul. 2005 to Aug. 2006
Kaduna State School of Health	Biology Tutor	Dec. 2004 to Jun. 2005
FRS Marine Laboratory Aberdeen	MSc Research Scholar	Feb. 2004 to Sept. 2004
NTDC Kano Nigeria	Administrative Officer II	Jun. 2003 to Sept. 2003
Ikwerre Local Government Council	Administrative Officer/Integrated Science Teacher	Jun. 2001 to Jun. 2002
Nat. Research Institute of Chemical Technology, Nigeria	Student Intern	Jun. 1999 to Dec. 1999

2. TEACHING ACTIVITIES

2.1 Courses presented		
Course	Level (e.g. second year, Masters)	Self-developed (Yes or No)
*Invertebrate Biology (ZEN 251)	Second year (From 2021)	Yes (co-developed)
Behavioural Ecology (ZEN 363)	Third year (From 2011)	Yes (co-developed)
Physiological Processes (ZEN 361)	Third year (From 2015-2016)	No
#Insect Diversity (ZEN 355)	Third year (From 2019)	Yes (co-developed)
*Behavioural Ecology (ZEN 712)	Honours (From 2015)	Yes (co-developed)
Insect Plant Interactions (ZEN 782)	Honours (From 2018)	Yes (co-developed)
Apiculture elective (VIP 300)	Third year (From 2019)	Yes (co-developed)

*Coordinator, #Co-coordinator 2019, and Interim coordinator 2020

2.2 Other education and pedagogic courses presented		
Course	Year	Institution
Molecular Ecology	2017	Martin Luther University, Halle-Wittenberg, Germany
Insect Taxonomy Evolution and Ecology (ZOOL 735)	Masters (2010)	Ahmadu Bello University, Nigeria
Advance Neurophysiology and Endocrinology (ZOOL 737)	Masters (2010)	Ahmadu Bello University, Nigeria
Research Methodology (HMES 80)	Honours (2012)	Department of Industrial Psychology, UNISA, South Africa
Biology Special Option (BIOL 416)	Fourth year/Hons	Ahmadu Bello University, Nigeria
Nematology (ZOOL 434)	Fourth year/Hons	Ahmadu Bello University, Nigeria
Introductory Ecology (BIOL111)	First year (2010)	Ahmadu Bello University, Nigeria
Statistics for Biology (BIOL 218)	Second year (2009/10)	Ahmadu Bello, University, Nigeria
General Biology I (BIO 101)	First year (2004/5)	Kaduna State University, Nigeria
General Biology II (BIO 102)	First year (2004/5)	Kaduna State University, Nigeria
Biology for Health Technicians (BHT 311)	Third year (2004)	Kaduna State School of Health, Nigeria
Computing in Health Sciences (COMP 301)	Third year (2004/05)	Kaduna State School of Health, Nigeria

3. TEACHING OUTPUTS

3.1 Educational publications and products

Provide full details including full titles, names of all the authors, publishers, dates, page numbers etc. Specify your exact contribution to the publications or products. Note that the publications here should be of a didactic nature e.g. articles in educational publications, papers presented at educational conferences, etc. A summary and description of educational products developed can be provided (e.g. study guides, learning materials, multimedia productions (CDs), educational videos, web materials, text books etc.) relevant to university education.

- Study Guide ZEN 363, 2018, 2019, 2020, 2021, 2022, 2023 revised using the new Faculty template
- Study Guide ZEN 355, 2019, 2020, 2021, 2022, 2023 revised using the new Faculty template
- Study Guide/Lecture and practical guide ZEN 251, 2021, 2022, 2023
- Kiwon kudan zuma littafi na daya: A Hausa Beekeeping manual volume 1 (2011) revised on 2021. Published by Food and Environment Research Agency (FERA), UK

4. OTHER TEACHING CONTRIBUTIONS

4.2 Visits to local and overseas universities as guest professor or lecturer in regard to teaching

Provide details

- Department of Biological Sciences, Ahmadu Bello University Nigeria as a guest Lecturer (December 2022). Spoke on honey bee research at the annual research symposium
- Institute for Zoology, Martin Luther University, Halle-Wittenberg, Germany as a visiting Professor (1st July 2019- 31st December, 2019)
- Zoology II, University of Würzburg, Germany as a Guest lecturer (November, 2019)
- ICIPE Nairobi, Kenya Trainer at International Course for Chemical Ecology (ICE 19) (10th June 2019- 21st June, 2019)
- Department of Zoology, Makerere University Uganda, as a guest Lecturer (May 2019) Gave lectures on prospecting for semiochemical control strategies and genetics of African honeybees
- Institute for Zoology, Martin Luther University, Halle-Wittenberg, Germany as a guest Professor (1st November 2016- 31st January, 2018)
- Department of Biological Sciences Ahmadu Bello University Nigeria as a guest lecturer (11th to 31st December, 2015)
- Department of Biological Sciences, Kaduna state University Nigeria as a guest lecturer (05th to 15th December 2012). Gave lectures on Insect Chemical Ecology with reference to social insects
- Department of Zoology, Makerere University Uganda, as a guest Lecturer (September 2012). Gave lectures on the chemistry of mandibular gland pheromones in African honeybees
- Department of Biological Sciences, Ahmadu Bello University Nigeria as a guest Lecturer (December 2013, and 2014). Spoke on Behaviour and Chemical ecology as a scientific discipline

5. POSTGRADUATE SUPERVISION

5.1 Supervision and co-supervision of students who have completed degrees

Post-Doctoral fellows

Name of fellow	Degree/Title of dissertation/ thesis and date completed	Host	Co-host	Duration of studies (years)
Dr Olabimpe Okosun	Pheromones synergies in reproductive honey bees	Prof C Pirk	A Yusuf	2 years (2017-2019)
Dr Sandra Mustapa	Communication in small hive beetles	Prof C Pirk	A Yusuf	2 years (2017-2019)
Dr Mazi Sanda	Genetic diversity of wild bees	A Yusuf		1 year (2019)
Dr Jarkko Routo	Genomics of Varroa mites	A Yusuf		1 year (2019)
Dr Chedly Kastally	Reproductive biology of Varroa mites	A Yusuf		1 year (2019)
Dr Anja Buttstedt	Major royal jelly proteins in honey bees	A Yusuf		1 year (2021)

Dr Fiona Mumoki	Pheromone communication in drone honey bees	Prof C Pirk	A Yusuf	2 years (2021-2023)
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PhDs				
Name of student	Degree/Title of dissertation/thesis and date completed	Supervisor	Co-supervisor(s)	Duration of studies (years)
Olabimpe Okosun	PhD Entomology , Pheromonal communication in African honeybee workers, <i>Apis mellifera scutellata</i> and <i>Apis mellifera capensis</i> the role of tergal gland secretions (September, 2016)	Prof C Pirk	A Yusuf , Prof R. Crewe	Four
Nelly Ndungu	PhD Entomology , Discrimination of <i>Hypotrigona</i> species (Apidae: Meliponinae) in Kenya using Nest architecture, cephalic secretions and molecular tools (April 2019)	Prof C Pirk	A Yusuf , D Masiga, N Kiatoko (icipe)	Three
Beatrice Nganso	PhD Entomology , Mechanisms of Resistance and Tolerance in African and European Honeybees, <i>Apis mellifera</i> L. against <i>Varroa destructor</i> (April 2019)	A Yusuf	Profs C Pirk, B Torto	Three
Njelembo Mbewe	PhD Entomology , The ecology of <i>Glossina fuscipes fuscipes</i> (Diptera: Glossinidae) and its responses to 4-Methylguaiaicol and specific compounds in waterbuck odour (April 2019)	Prof C Pirk	A Yusuf , B Torto, R Saini, J Irungu (icipe)	Two and half years
Abdelmutalab Gesmalla	PhD Entomology Future distribution and life history traits of three insect pests of Arabica coffee in East Africa: Risks of assessment in the light of global warming (September 2019)	A Yusuf	Prof C Pirk. R Babin (CIRAD)	Three
Fiona Mumoki	Using functional genomics to provide insights into social parasitism by Cape honey bee clonal workers based on mandibular gland pheromones (<i>Apis mellifera capensis</i> Eschscholtz) (December 2019)	Prof R Crewe	Prof C Pirk, A Yusuf	Three
Akua Antwi-Agyakwa	Development of semiochemical based tools for the management of African citrus trizoid (ACT) (May, 2020)	A Yusuf	Prof C. Pirk, Prof B. Torto	Three

Olabimpe Olaide	The Semiochemical basic of repellency to tsetse by Zebra (September 2020)	A Yusuf	Prof C Pirk, Prof B. Torto	Three
Aiki Istifanus	Ecology and nesting behaviour of termites in savannahs (September 2021)	A Yusuf	Prof C Pirk	Four
Bethelihem Mekonnen	Semiochemicals of ants for the control of fruit flies (September 2021)	A Yusuf	Prof C Pirk, Dr E Deletre (CIRAD)	Four
Pascal Ayelo	Bioprospecting for semiochemicals against the tomato moth <i>Tuta absoluta</i> (September 2021)	A Yusuf	Prof C Pirk, Dr E Deletre (CIRAD)	Three
Nadia Toukem	Integrated Pest and Pollinator Management in Avocado farms (September 2021)	A Yusuf	Dr Thomas Dubous (icipe)	Two
Vongai Pradza	Development of Effective Bio-pesticides against whiteflies infesting vegetables in Kenya (September 2022)	A Yusuf	Dr Fathiya Khamis, Dr Komivi Akutse (icipe)	Three
Fairo Foryuy	Diversity of plants and pollinators and their networks in East African Afromontane regions (December 2022)	Prof C Pirk	A Yusuf Dr M Lattorff (icipe)	Three
Ayaovi Agbesenou	Integrating auto dissemination device and fungal endophytes for sustainable management of <i>Tuta absoluta</i> (December 2022)	A Yusuf	Dr Fathiya Khamis, Dr Komivi Akutse (icipe)	Two

MSc				
Name of student	Degree/Title of dissertation/ thesis and date completed	Supervisor	Co-supervisor(s)	Duration of studies (years)
Lerata Mataeli	MSc Applied Mathematics (September 2019)	Prof J Lubuma (Department of Mathematics)	A Yusuf	Two
Zoe van Vuuren	MSc Entomology Cohabitation in honey bee hives: Development of HPGs and trophallaxis in Small hive beetles. (September, 2019)	Prof C Pirk	A Yusuf	Two
*Johanna Pipelow	MSc Molecular Biology Introgression of Capensis honey bees into the Kruger National park (January, 2019)	Prof R Moritz (MLU, Halle)	A Yusuf	Two
Chamanti Liang	MSc Entomology, Production and secretions	Prof C Pirk	A Yusuf Prof R Crewe, Dr H Human	Three

	from mandibular glands of honeybees (July, 2018)			
Frans Reyneke	MSc Wildlife Management The efficacy of two snake repelling agents when applied outdoors (2021)	Dr M Keith	A Yusuf, L Verburgt	Two

BSc Hons				
Name of student	Degree/Title of dissertation/ thesis and date completed	Supervisor	Co-supervisor(s)	Duration of studies (years)
Chamanti Liang	BSc Hons Entomology , How to sneak and overrun a honeybee colony (2013)	Prof C Pirk	A Yusuf Prof R Crewe	One
Nikita Venter	BSc Hons Entomology , Temperature and pheromones production in honeybees (2014)	Prof C Pirk	A Yusuf	One
Zoe van Vuuren	BSc Hons Entomology , Modelling the stability of the hybrid zone between <i>scutellata</i> and <i>capensis</i> (2015)	A Yusuf	Prof C Pirk	One
Lerata Mataeli	BSc Hons Applied Mathematics , Honeybee population dynamics in the presence of a social parasite (June 2016)	Prof J Lubuma (Department of Mathematics)	A Yusuf	Two
Anneke Schoeman	BSc Hons Entomology , Speciation and chemical ecology of <i>Epirinus</i> dung beetles (November 2016)	Prof C Sole	Prof C Pirk, A Yusuf ,	One
Frans Reyneke	BSc Hons (Wild Life Management) Repellences of some commercial snake repellents (November 2018)	Dr M Keith	A Yusuf L Verburgt	One
Keandra Langston	BSc Hons Entomology . Optimising substrates for mealworms rearing (November 2020)	A Yusuf		One
Marjorie Tornout	BSc Hons Zoology . Chemistry of honey bees from three South African Provinces (November 2020)	A Yusuf	Prof Christian Pirk	One
Frederich Hennecke	BSc Hons Entomology Low resource rearing of edible crickets (November 2021)	A Yusuf		One
Ronald G. Oepeng	BSc Hons Entomology	F Mumoki	A Yusuf	One

	Effects of brood pheromone to honey bee physiology (November 2022)			
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5.2 Current post-graduate students (Post Docs)

Name of fellow	Degree/Title of dissertation/thesis and date completed	Host	Co-host	Duration of studies (years)
Dr Ezette du Rand	Pheromones and diets in honey bees	Prof C Pirk	A Yusuf	Nov 2019-Date
Dr Ikechukwu Onah	Stingless bees and climate change in Nigerian vegetative zones	A Yusuf		Jul 2021-Date
Dr Mohammed Mustafa	Climate change in Sudanese honey bees	A Yusuf		Jul 2021-Date
Dr Tiwonge Gawa	Pollinators and parasitoids in macadamia productions in Malawi	A Yusuf		Jul 2021-Date
Dr Bethelihem Mekonnen	Flights abilities of small hive beetles and ant's chemotaxonomy	A Yusuf	Prof C. Pirk	April 2022-Date

5.3 Current post-graduate students (PhDs)

Name of student	Degree enrolled for and date of first registration	Project title	Supervisor	Co-supervisor(s)	Year of registration
Refilwe Modiba	PhD Entomology (2019)	Population genetics and behaviour of the Termite raiding ant <i>Megaponera analis</i>	A Yusuf	Prof C Pirk	Fourth
Jackson Muyobela	PhD Entomology (2020)	Effective methods for identifying isolated populations of	Prof C Sole	Prof C Pirk, A Yusuf	Third

		Savannah tsetse flies			
*Nolwandle Nolen Khumalo	PhD Microbiology (2021)	The impact of endophytes on the health and fitness of the plant and its pollinator	Prof R Adeleke (NWU)	A Yusuf	Third
Raphael Maino	PhD Chemistry (2021)	Olfactomes of fruit flies	Prof E Rohwer	A Yusuf	Third
Aklilu Bailey	PhD Entomology (2021)	Semiochemical baits for trapping mosquitoes	Prof C Sole	A Yusuf	Third
Adams Bashiru	PhD Entomology (2022)	Below ground factors of tomato and development of effective biorationals for the management of <i>Tuta absoluta</i>	Prof B Toto	A Yusuf	Second
Kokou Fiaboe	PhD Entomology (2021)	Understanding the chemical ecology underpinning fall armyworm resistance mechanisms	A Yusuf	Dr F Khamis (ICIPE)	Third
Ramahloe Mphahlele	PhD Entomology (2022)	Environmentally friendly management strategies for the tomato leafminer <i>Tuta absoluta</i>	A Yusuf	Dr R Nofemela (ARC-PPRI)	Second
Emmanuel Peter	PhD Entomology (2022)	Fall army worm resistance and maize intercropping systems	Prof B Torto	A Yusuf	Second
Abdul Jalloh	PhD Entomology (2022)	Soil microbes mediating tritrophic interaction in FAW	A Yusuf	Dr. F. Khamis Dr D. Mutambai	Second

Waleign Wanore	PhD Entomology (2022)	Tolerance of honey bees to <i>Varroa destructor</i> in Ethiopian	A Yusuf	Prof C Pirk	Second
Onana Alphonse	PhD Microbiology (2023)	Antimicrobial properties of propolis	Dr S Cosa	A Yusuf Prof L Moleleki	First
*Oluwakemi Akinmolode	PhD Microbiology (2023)	Utilization of probiotics microbes for the elimination of risks associated with microbial exchanges between honeybees flowering plants	Prof R Adeleke (NWU)	A Yusuf	First

* Non UP student.

Current MSc students

Name of student	Degree enrolled for and date of first registration	Project title	Supervisor	Co-supervisor(s)	Year of registration
Eloise Butcher	MSc Entomology	Cuticular hydrocarbons in honey bee drones	A Yusuf	Prof C Pirk	Third
Carli Swart	MSc Plant Sciences	Analyses of smoke extracts	Dr G Stafford	A Yusuf	First
Marjorie Tournut	MSc Entomology	Chemical ecology of honeybees from Re-union Island	A Yusuf	Prof C Pirk	Second
Keandra Langston	MSc Entomology	Mass rearing and nutritional contents of mealworms	A Yusuf		Second
Frederich Hennecke	MSc Entomology	Mass rearing and nutritional contents of house crickets	A Yusuf		Second

Nombasa Quaqela	MSc Entomology	Sterols in honey bee glands	A Yusuf	A Buttstedt	Second
Olanrewaju Adekunle	MSc Entomology	Resistance to insecticide by anopheline mosquitoes in Nigeria	A Yusuf	A Bastos	Second

RESEARCH FUNDING

6.1 Obtaining research funds (Optional)				
Origin of research funds (e.g. contract research, THRIP, international funding organisations, other(s))	Title of research project or programme	Duration	Money allocated (R) (Optional - exact amounts not required)	
NRF competitive funding (Rated/Unrated) co PI	Microbial exchanges and ecosystem functionalities in pollination of sunflower plant	Mar 2023-Fed 2025	R 1, 300, 000	
Technology Innovation Agency	The Feasibility study of a new value chain for lower grade potatoes in the agro-processing industry (GMS Number: 12792/02)	Mar 2023-Mar 2025	R1,937,100	
Knowledge and Interchange Collaboration (KIC) African Interaction travel grant	Entomology in the Gambia: visit to University of the Gambia	2023	R50,000	
Commonwealth MSc Scholarship	Insecticide resistance in mosquitoes	Nov 2022-Dec 2024	R 56,000 (\$ 3500)	
DAAD ClimpAfrica	Climate change and bees in Nigeria and Sudan	July 2021-Dec 2022	R900,000 (Eur 50000)	
Gauteng Dept of Agric and Rural Development	Integrated management of <i>Tuta absoluta</i>	Jan 2021-Dec 2023	R450,000	
Alexander von Humboldt Foundation	Major Royal jelly proteins	2021	R890,000 (Eur 48000)	
South Africa-Sweden University Forum (SASUF)	Microbial exchange between plants and honey bees	2020-2022	R240,000	
Alexander von Humboldt Foundation	Equipment subsidy grant	2020	R320,000 (Eur 20,000)	
African Union Inter-African Bureau for Animal Resources (AU-IBAR)	Genetic support to selection and conservation in member states (South Africa and Zimbabwe)	May-July 2019	R710,000 (\$50,000)	
Tandem Research Fellowship, Alexander von Humboldt Foundation, Germany	Pathogen loads and diversity of wild and managed honey bees	July-Dec 2019	R895,000 (Eur 56,200)	

Alumni Networking Initiative awards, Alexander von Humboldt Foundation, Germany	Networking and capacity building between Germany and Sub-Saharan Africa	2019-2021	R400,000 (Eur 25,000)
Research Development Grant for Y-rated Researchers NRF	From pheromones to Genes: Drones hold a key to our understanding of chemical communication in honey bees	2019-2021	R299,600
Knowledge and Interchange Collaboration (KIC) African Interaction travel grant	Honey bees in Uganda: visit to Makerere University Uganda	2019	R50,000
Incentive Funding for Rated Researchers NRF		2017-2021	R50,000
Ruckenstipendium Alexander von Humboldt Foundation, Germany	Population genetics and disease loads in African honey bees	2018-2019	R97,500 (Eur 6,500)
DAAD Regional office Cairo	To organise the 22 nd meeting of the AAIS in Wad Medani, Sudan	2017	R710,000 (Eur 40,000)
Thuthuka NRF Rating track	Genomic basis of chemical communication in honeybees	2016-2019	R1,173,000
NRF Research Career Award	Chemical Communication in honeybees	5 years (2014-2019)	R2,250,000
NRF/DST Innovation Post Doc.	Pheromones of the Cape honey bee	3 years (2012-2014)	R813,000
Principal Investigator SARChI Chair in Mathematical Models and Methods in Bioengineering and Biosciences	Pheromones of <i>Apis m. adansonii</i> and mathematical modelling of honeybee population dynamics	Since 2013-date	R50,000 x 10 = 500,000
Knowledge Interchange and Collaboration (KIC) NRF African Interaction travel grant	To visit Ahmadu Bello University, Zaria, Nigeria	November 2015	R27,109
Georg Foster Research Fellowship for experienced researchers Alexander von Humboldt Foundation Germany	Population dynamics and pathogen loads in South African honey bees	September 2016 – February 2018	R1,310,000 (Eur 87,000)
DAAD Germany	Organise the 21 st scientific conference of the African Association of Insect Science	October 2015	R1,222,936
Commonwealth MSc research scholarship	An assessment of desertification and counter desertification methods in Northern Nigeria	September 2012- August 2015	592,300 (£27,890)
Boehringer Ingelheim Fonds (BIF)	To attend student chemical ecology course	4 th to 16 th June 2007	31,446 (Eur 1,800)

7. RESEARCH OUTPUTS

7.1 Publications in peer-reviewed or refereed journals

Provide full details of each publication, including full titles, names of all the authors, journals, dates, page numbers etc.

1. Istifanus, A.P., Abdelmutalab, A.G.A.; Pirk, C.W.W.; **Yusuf, A. A.** (2023) Predicting the Habitat Suitability and Distribution of Two Species of Mound-Building Termites in Nigeria Using Bioclimatic and Vegetation Variables. *Diversity* 15, 157. <https://doi.org/10.3390/d15020157>
2. Adams, B., **Yusuf, A. A.**, Torto, B., Khamis, F.M. (2023) Non-host plant odours influence the tritrophic interaction between tomato, its foliar herbivore *Tuta absoluta* and mirid predator *Nesidiocoris tenuis*, *Frontiers in Plant Science* 14 <https://doi.org/10.3389/fpls.2023.1014865>
3. Dzekashu, F. F., Pirk, C.W.W., **Yusuf, A. A.**, Classen, A., Kiatoko, N., Steffan-Dewenter, I., Marcell K. P., Lattorff, H.M.G. (2023) Seasonal and elevational changes of plant-pollinator interaction networks in East African mountains, *Ecology and Evolution* <https://doi.org/10.1002/ece3.10060>
4. Peter, E., Tamiru, A., Sevgan, S., Dubois, T., Kalem, S., Kruger, K., Torto, B., Yusuf, A. A. (2023) Companion crops alter olfactory responses of the fall armyworm (*Spodoptera frugiperda*), and its larval endoparasitoid (*Cotesia icipe*), *Chemical and Biological Technologies in Agriculture* (Accepted)
5. Khamis, F.M., Fiaboe, R. K., **Yusuf, A. A.**, Torto, B., (2023) Herbivore intraguild interactions decrease ectoparasitoid *Bracon nigricans* parasitism of *Phthorimaea absoluta* and responses to tomato volatiles, *Frontiers in Ecology and Evolution, Chemical Ecology* (Accepted)
6. Langlands, Z., duRand, E.E., **Yusuf, A. A.**, Pirk, C. W. W. (2022) Functional response of the hypopharyngeal glands to a social parasitism challenge in Southern African honey bee subspecies. *Parasitology Research* 121, 267–274. <https://doi.org/10.1007/s00436-021-07391-6>
7. Dzekashu, F. F., **Yusuf, A. A.**, Pirk, C.W.W., Steffan-Dewenter, I., Lattorff, H.M.G., Marcell K. P. (2022) Floral turnover and climate drive seasonal bee diversity along a tropical elevation gradient, *Ecosphere* 13:e3964. <https://doi.org/10.1002/ecs2.3964>
8. Toukem, N. K., Mohamed, S. A., **Yusuf, A.A.**, Lattorff, H. M. G., Copeland, R. S., Dubois, T. (2022) Interactions between integrated pest management, pollinator introduction, and landscape context on avocado *Persea americana* productivity, *Entomologia Generalis* <https://doi.org/10.1127/entomologia/2022/1365>
9. Ayelo, P., **Yusuf, A.A.**, Chailleux, A., Mohamed, S., Pirk, C. W.W., Deletre, E. (2022) Chemical cues from honeydew and cuticular extracts of *Trialeurodes vaporariorum* serve as kairomones for the parasitoid *Encarsia Formosa*, *Journal of Chemical Ecology* <https://doi.org/10.1007/s10886-022-01354-6>
10. Agbessenou, A., Akutse, K. S., **Yusuf, A. A.**, Khamis, F. M. (2022) The Endophyte *Trichoderma asperellum* M2RT4 Induces the Systemic Release of Methyl Salicylate and (Z)-jasmone in Tomato Plant Affecting Host Location and Herbivory of *Tuta absoluta*, *Frontiers in Plant Science*, <https://doi.org/10.3389/fpls.2022.860309>
11. Miano, R.N., Mohamed, S.A., Cheseto, X., Ndlela, S., Biasazin, T.D., **Yusuf, A. A.**, Rohwer, E., Dekker, T., (2022). Differential responses of *Bactrocera dorsalis* and its parasitoids to headspaces of different varieties of tree-attached mango fruits and the associated chemical profiles. *Frontiers in Ecology and Evolution*, <https://doi.org/10.3389>

12. Paradza V.M, Khamis F.M, **Yusuf, A. A**, Subramanian, S., Akutse K.S., (2022) Efficacy of *Metarhizium anisopliae* and (E)-2-hexenal combination using autodissemination technology for the management of the adult greenhouse whitefly, *Trialeurodes vaporariorum* Westwood (Hemiptera: Aleyrodidae). *Frontiers in Insect Sciences* 2:991336.doi: 10.3389/finsc.2022.991336
13. Toukem, N. K., Dubois, T., Mohamed, S. A., Lattorff, H. M. G., Jordaens, K., **Yusuf, A. A.** (2022) The effect of annual flower strips on pollinator visitation and fruit set of avocado (*Persea americana* Mill.) in Kenya, *Arthropod-Plant Interactions* <https://doi.org/10.1007/s11829-022-09939-4>
14. Mumoki, F. N., Pirk, C. W., **Yusuf, A. A.**, Crewe, R. M. (2022). Anniversary of a beekeeper's discovery of thelytoky in Cape honey bees. *South African Journal of Science*, 118(11/12). <https://doi.org/10.17159/sajs.2022/14126>
15. Baloyi, I. T., Adeosun, I. J., **Yusuf, A. A.**, Cosa, S. (2022) Antibacterial, anti-quorum sensing, antibiofilm activities and chemical profiling of selected South African medicinal plants against multi-drug resistant bacteria, *Journal of Medicinal Plants Research*, 16:52-65 DOI:10.5897/JMPR2021.7192
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7.2 Books and/or chapters in books

Provide full details, including full titles, names of all the authors, publishers, dates, page numbers etc. Specify your exact contribution to the book e.g. editorial role, co-author

- Yusuf, A. A. (2019). Allomonas. In C. Starr (Ed). Encyclopaedia of Social Insects, Springer Nature. https://doi.org/10.1007/978-3-319-90306-4_5-1.
- Pirk, C.W.W. and Yusuf, A. A. (2017) A small hive beetle lesson from South Africa. In N.L. Carreck (Ed) The small hive beetle - a growing problem in the 21st century. International Bee Research Association / Northern Bee Books; Congresbury, UK. ISBN: 978-0-86098-278-4 p. 51-58

7.3 Published full-length conference papers/keynote addresses

Provide full details of each publication, including full titles, names of all the authors, journals, dates, page numbers etc.

- Yusuf, A. A. (2023) Honey bees and pollinator networks an African perspective. South African- Swedish University forum, 27th – 31st March 2023- **Plenary talk.**
- Yusuf, A. A. (2022) Hot and sort after: Pheromone correlated heat in honey bees, 24th Biennial hybrid meeting and conference of the African Association of Insect Scientists (AAIS), Addis Ababa, Ethiopia, 21st – 25th March, 2022. **Plenary talk.**

- **Yusuf, A. A.** (2021) Impact of virtual mobility to scientists in Africa, Humboldt New Virtual mobility conference, 13th-14th September 2021. **Keynote address and panellist.**
- **Yusuf, A. A., Mumoki, F.** (2021) Fascinating anomalies: understanding social parasitism in an African honey bee subspecies. Animal Behaviour Live monthly seminar series, 28th May, 2021, **Keynote address.**
- **Yusuf, A. A.** (2020) From pheromones to Genes-an easy switch to royalty in African honey bees. IUSSI-NWES Winter meeting 18th December 2020, **Plenary talk.**
- **Yusuf, A. A.** (2020) The uniqueness of African honey bees amidst threats from pesticides and pests. Zimbabwe Apicultural Platform virtual meeting 7th May 2020, **Keynote address.**
- **Yusuf, A. A.** (2019) Ecology, behaviour and threats to African honey bees, 23rd Biennial meeting and conference of the African Association of Insect Scientists (AAIS), 18th -22nd November 2019, Abidjan, Cote d'ivoire, **Plenary talk.**
- Lerata, M. B., **Yusuf, A. A.,** Lubuma, J. (2017) On continuous models and reliable numerics for the declines of the honey bee colonies. BIOMATH 2017, Biomath Communication supplement: BIOMATH 2018, 4(1)
- **Yusuf, A. A.** (2013) How to eat healthy: Dietary aspects of honey bees in the light of global pollinator decline. 20th Conference of the African Association of Insect Scientists (AAIS), 27th – 31st October 2013, Yaoundé, Cameroon. **Plenary talk.**
- **Yusuf, A. A.,** Webster, L., Pollard, P. (2010) Development of an Analytical Method for the Determination of Storage Lipids in *Calanus finmarchicus* Omics Conference on analytical and Bioanalytical methods 01st – 3rd November, 2010, Hyderabad, India DOI: 10.4172/2155-9872.1000091
- **Yusuf, A. A.** (2008) Predation on termites of the sub-family Macrotermitinae by the ant *Pachycondyla analis*. Proceedings of ARPPIS Alumni Association Biennial conference/silver jubilee celebrations, 24th -27th November, 2008, *icipe*, Duduville campus, Nairobi, Kenya, 1- 5

7.4 Non-refereed publications or popular articles

Provide full details of each publication, including full titles, names of all the authors, journals, dates, page numbers etc.

- Frederich, H., Niassy, S., **Yusuf, A.** (2022) Edible Insects? How Smart! *Quest*, 18 (3). <http://hdl.handle.net/20.500.11911/256>
- Tournot, M., Pirk, C. W.W., **Yusuf, A. A.** (2022) Variation in worker honey bee pheromone in Reunion, *South African Bee Journal* 94(2): 36.
- Mumoki F. N., Pirk C. W.W., **Yusuf A. A.** (2021) Costs and benefits of honey bee drones *South African Bee Journal* 93(3): 94-99.
- Buttstedt, A., **Yusuf, A.** (2021) World food day: Become an entomologist and be a food hero https://www.up.ac.za/faculty-of-natural-agricultural-sciences/news/post_3026057-worldfoodday-become-an-entomologist-and-be-a-food-hero
- **Yusuf, A.,** Human, H., Pirk, C., Crewe, R. (2020) Can the Capensis clone problem be cured using static queen pheromone lures? *South African Bee Journal* 92(2): 46-47.
- Mumoki F. N., Pirk C. W.W., **Yusuf A. A.,** Crewe R. M. (2019) Do scutellata queens influence the mandibular gland pheromones of the A. m. capensis clone workers and their ability to lay eggs? *South African Bee Journal* 91 (3): 23-25.

- **Yusuf, A.A.** (2016). Hope for African Mountain honey bees? African mountain honey bees in the light of climate change and threat to honeybees' diversity. Mountain Research Initiative Blog, March edition <http://www.blogs-mri.org/?p=1036>
- **Yusuf, A. A.,** Gordon Ian (2007). Understanding the behaviour and chemical ecology of the African termite raiding ant *Pachycondyla analis* could lead to the development of a novel termiticide, *Mpala News*, issue 4:*

8. OTHER SCHOLARLY RESEARCH-BASED CONTRIBUTIONS

8.1 Participation in conferences, workshops and short courses - specify type of contribution

Provide full details of participation in national and international conferences etc

8.1.1 National

1. 22nd Entomological Society of Southern Africa Congress, July 2021. Title of paper: The functional response of the hypopharyngeal gland in *Apis mellifera scutellata* workers after exposure to a social parasite (Oral presentation).
2. 22nd Entomological Society of Southern Africa Congress, July 2021. Title of paper: Identifying the effects of neonicotinoid pesticides on communication cues produced by foragers of *Apis mellifera scutellata* (Lepeletier)
3. 10th Oppenheimer Research Conference, 1st 3rd October, 2019, Johannesburg, South Africa. Title of Paper: Queen-mediated regulation of reproductive parasitism in Cape honey bee (*Apis mellifera capensis* Eschscholtz) clonal workers (Oral presentation).
4. 20th Entomological Society of Southern Africa and 38th ZSSA joint congresses, 03th- 07th July 2017, CSIR, Pretoria, South Africa. Title of paper: *Apis mellifera scutellata* queens can control reproductive parasitism in *A. m. capensis* clones by blocking production of the queen substance (Oral presentation).
5. 19th Entomological Society of Southern Africa and 37th ZSSA joint congresses, 12th- 16th July 2015, Rhodes University, Grahamstown, South Africa. Title of paper: Ontogenetic changes in the tergal gland secretions of queen-less honey bee workers, *Apis mellifera scutellata* and *Apis mellifera capensis* (Oral presentation)
6. 19th Entomological Society of Southern Africa and 37th ZSSA joint congresses, 12th- 16th July 2015, Rhodes University, Grahamstown, South Africa. Title of paper: Hot and sort after: Body temperature correlates pheromone production in honeybee workers (Oral presentation)
7. 19th Entomological Society of Southern Africa and 37th ZSSA joint congresses, 12th- 16th July 2015, Rhodes University, Grahamstown, South Africa. Title of paper: Modulation of honeybee nutrient consumption by natural and synthetic compounds (Oral presentation)
8. 18th Entomological Society of Southern Africa (ESSA), 30th June– 3rd July 2013. North-West University, Potchefstroom, South Africa. Title of paper: Does herbivory induce defences in Africa's wild tobacco? (Oral presentation)
9. BeeCon 2012, South African Bee Industry Organisation (SABIO), 15th – 16th June 2012 Pretoria, South Africa. Title of Paper: Addressing the Cape Bee Problem through understanding its biology (Oral presentation)
10. 17th Entomological Society of Southern Africa (ESSA), 3rd – 6th July 2011. University of the Free State, Bloemfontein, South Africa. Title of paper: Caste determines production of

volatiles in the African termite raiding ant *Pachycondyla analis* (Hymenoptera: Formicidae) (Oral presentation)

8.1.2 International

1. 1st US-Africa Frontiers in STEM, Using a drone to catch a drone: honey bee census, 12th -15th October, 2022, Nairobi, Kenya (poster)
2. EU-IUSSI conference, Sterol provisioning in honey bees, 21st- 22nd October 2021 (Oral presentation)
3. 36th International Society of Chemical Ecology (ISCE), South Africa-Eusocial Insects: chemical ecology of social organisation at the genetic, behavioural and ecological levels- 5th – 10th September 2021-Symposium co-organiser (virtual)
4. 36th International Society of Chemical Ecology (ISCE), Eavesdropping into host communication: the bee louse *Braula coeca* selects its host using kairomones, 5th – 10th September 2021 (Oral presentation).
5. 36th International Society of Chemical Ecology (ISCE), The role of the host queen in regulating reproductive parasitism in *Apis mellifera capensis* laying workers, 5th – 10th September 2021 (Oral presentation).
6. 36th International Society of Chemical Ecology (ISCE), Reproductive dominance and the role of multiple pheromones sources in honey bees, 5th – 10th September 2021 (Oral presentation).
7. South Africa-Sweden University forum 2020 digital edition 23rd-27th November 2020. Title: Honey bee research in South Africa (Oral presentation)
8. IV All Africa Horticultural Congress – AAHC 2020 Title: Integrated pest and pollinator management (IPPM) as a novel tool to merge ecosystem services: lessons learnt from avocado and cucurbits in Kenya (Oral presentation)
9. Entomological Society of America International Branch virtual symposium, 26th-28th April 2020, online. Title of Paper: Identifying the chemical cues used by drones of *Apis mellifera scutellata* (Lepeletier) for communication within and outside the hive (Poster presentation).
10. 23rd meeting and scientific conference of the African Association of Insect Scientists (AAIS), 18th -23rd November, 2019, Abidjan, Ivory Coast. Title of Paper: The connection between edible insects and sustainable development goals (Oral presentation)
11. 23rd meeting and scientific conference of the African Association of Insects Scientists (AAIS), 18th – 23rd of November 2019, Abidjan, Ivory Coast: Title of Paper: Thermal regulatory mechanisms of termites from two different savannahs (Oral Presentation)
12. 23rd meeting and scientific conference of the African Association of Insects Scientists (AAIS), 18th – 23rd of November 2019, Abidjan, Ivory Coast: Title of Paper: Trait-mediated avoidance behaviour of fruit flies to Semiochemicals of *Oecophylla longinoda* (Latreille) (Hymenoptera: Formicidae) (Oral presentation)
13. 9th Bonn Humboldt award winners forum, 16th -20th October, 2019, Bonn, Germany. Title of Paper: Queen turnover rates in African honey bees are not the classic textbook example (Poster presentation)

14. 35th Meeting of the International Society for Chemical Ecology (ISCE) 2nd-7th June 2019, Georgia, Atlanta, USA. Title of paper: Eavesdropping into host communication: the bee louse *Braula coeca* selects its host using kairomones (Oral presentation)
15. Advanced Technologies and Treatment for Diabetes (ATTD) conference. Berlin, Germany 20th – 23rd February 2019. Title of paper. Nano formulation of eucalyptus oil with chitosan improves its antidiabetic property (Oral presentation)
16. XVIIIth International Congress of the International Union for the study of Social Insects (IUSSI), 5th – 10th August 2018 Guarujá, Brazil. Title of paper: Pheromonal plasticity of minor and major workers in the African termite raiding ant *Megaponera analis* (Latr.) (Oral presentation).
17. XVIIIth International Congress of the International Union for the study of Social Insects (IUSSI), 5th – 10th August 2018 Guarujá, Brazil. Title of paper: Plasticity in the mandibular gland signals of honey bees (Oral presentation).
18. XVIIIth International Congress of the International Union for the study of Social Insects (IUSSI), 5th – 10th August 2018 Guarujá, Brazil. Title of paper: Use of diverse glandular sources for pheromonal control by reproductively dominant honey bee workers (Oral presentation).
19. XVIIIth International Congress of the International Union for the study of Social Insects (IUSSI), 5th – 10th August 2018 Guarujá, Brazil. Title of paper: Reproductive plasticity in workers of the African honey bee *Apis mellifera capensis* (Oral presentation)
20. 34th Meeting of the International Society of Chemical Ecology (ISCE), 12th – 19th August 2018 Budapest, Hungary. Title of paper: Effects of brood pheromone on survival and nutrient intake of African honey bees under controlled conditions (Oral presentation)
21. 34th Meeting of the International Society of Chemical Ecology (ISCE), 12th – 19th August 2018 Budapest, Hungary. Title of paper: Presence of C10 fatty acids in the cephalic secretions of bees (Poster presentation).
22. 34th Meeting of the International Society of Chemical Ecology (ISCE), 12th – 19th August 2018 Budapest, Hungary. Title of paper: Equids as potential source of repellents for savannah tsetse fly control (Oral presentation)
23. 34th Meeting of the International Society of Chemical Ecology (ISCE), 12th – 19th August 2018 Budapest, Hungary. Title of paper: Behavioural responses of African citrus Triozid to odours from common host plants-an evidence of host finding by olfaction (Poster presentation).
24. 34th Meeting of the International Society of Chemical Ecology (ISCE), 12th – 19th August 2018. Title of paper: Tergal gland pheromones of honey bee workers (Poster presentation)
25. EUROBEE 8, 18th – 20th September 2018 Ghent, Belgium. Title of paper: Use of quadcopter drones to estimate honey bee population densities and define drone congregation locations (Oral presentation)
26. 22nd Scientific conference of the Association of African Insect Scientists (AAIS), 23rd – 26th October 2017, Wed-Medani Sudan. Title of paper: Exposure to brood pheromones increases nutrient intake and decreases survival of African honey bees *Apis scutellata* (Oral presentation)
27. 34th International Scientific Council for Trypanosomiasis Research and Control, 11th – 15th September 2017 Livingstone, Zambia. Title of paper: Responses of *Glossina fuscipes fuscipes* to 4-methylguaiaicol and specific compounds in waterbuck odour at stationary visual attractive devices (Oral presentation)

28. 34th International Scientific Council for Trypanosomiasis Research and Control, 11th – 15th September 2017 Livingstone, Zambia. Title of paper: Effects of vector control on the population structure of tsetse (*Glossina fuscipes fuscipes*) in western Kenya (Poster presentation)
29. 19th International Conference on Apiculture and Bee Health, 11th – 12th December 2017 Rome, Italy. Title of paper: Assessment of tolerance mechanisms in African and European honey bees against *Varroa destructor* (Oral presentation)
30. American Mathematical Society (AMS) Joint Mathematics meeting, 2017. Title of Paper: Continuous and discrete models for the declines of honey bees colonies (Oral presentation).
31. 32nd Meeting of the International Society of Chemical Ecology (ISCE) and 5th meeting of the Association of Latin American Chemical Ecology Society 4th - 8th of July, 2016 Iguassu, Brazil. Title of paper: Mandibular gland pheromones from African honeybees: New insights and prospects as a complementary taxonomic tool (Oral presentation)
32. XXV International Congress of Entomology (ICE) 25th – 30th September 2016, Florida, USA. Title of paper: Managing reproduction in workers: The primer and releaser effects of tergal glands secretions in honey bee workers (Oral presentation)
33. 21st scientific conference of the Association of African Insect Scientists (AAIS), 19th – 23rd October 2015 Cotonou, Benin Republic. Title paper: Pheromonal and reproductive dominance of invasive social parasites, *Apis mellifera capensis* worker clones on its host, *Apis mellifera scutellata* workers (Oral presentation)
34. 21st scientific conference of the Association of African Insect Scientists (AAIS), 19th – 23rd October 2015 Cotonou, Benin Republic. Title paper: Managing a social parasites using pheromone supplement (Oral presentation)
35. 31st Meeting of the International Society of Chemical Ecology (ISCE), 29th June – 4th July 2015, Stockholm, Sweden. Title of paper: Prospects of managing a social parasite using pheromone supplements (Oral presentation)
36. SA-UK pollination and threats to pollinators' workshop, University of Pretoria, South Africa, 11th – 13th March 2015. Title of paper: Prospects of managing a social parasite using pheromone supplements (Oral presentation)
37. 1st SA-China workshop on honeybees' research, Zhejiang University, Hangzhou, China, 2nd – 9th August, 2014. Title of paper: Composition of mandibular gland pheromones in African honeybees: New insights? (Oral presentation)
38. 30th Meeting of the International Society of Chemical Ecology (ISCE) and Chemical Signalling in Vertebrates (CSIV), 8th – 12th July 2014, Chicago, USA. Title of paper: Pheromonal plasticity in *Apis mellifera adansonii* (Latr.) (Oral presentation)
39. 20th Conference of the African Association of Insect Scientist (AAIS), 27th – 31st October 2013, Yaoundé, Cameroon. Title of paper: How to eat healthy: Dietary aspects of honeybees in the light of global pollinator decline (Keynote)
40. 20th Conference of the African Association of Insect Scientist (AAIS), 27th – 31st October 2013, Yaoundé, Cameroon. Title of paper: Composition of mandibular glands in three subspecies of African honeybees and its implication for apiculture (Oral presentation)
41. EuroBee 2012, European Bee Organisation conference, 5th -8th September 2012 University of Halle, Germany. Title of Paper: Mandibular glands pheromones in races of African Honey Bee (Oral presentation)

42. SEMIO 11, Semiochemicals in the African perspective, 12th – 15th November 2011, Nairobi, Kenya. Title of paper: Odour mediated behaviour of the African termite raiding ant *Pachycondyla analis* (Hymenoptera: Formicidae) (Oral presentation)
43. 19th Conference of the African Association of Insect Scientist (AAIS), 8th – 12th November 2011, Nairobi, Kenya. Title of paper: Do physical challenges affect dominance hierarchies and pheromone production in Honey bees? (Oral presentation)
44. 41st Annual Conference of the Entomological Society of Nigeria, 4th-7th October 2010. Wesley University of Science and Technology, Ondo (WUSTO). Title of paper: Direct behavioural evidence of olfactory detection of prey by the termite raiding ant *Pachycondyla analis* (Hymenoptera: Formicidae) (Oral presentation)
45. Development of an Analytical Method for the Determination of Storage Lipids in *Calanus finmarchicus* Omics Conference on analytical and Bioanalytical methods 01st – 3rd November, 2010, Hyderabad, India DOI: 10.4172/2155-9872.1000091 (Oral presentation)
46. 25th Meeting of the International Society of Chemical Ecology (ISCE), 23rd- 27th August 2009, Neuchatel, Switzerland. Title of paper: Cuticular Hydrocarbons as Nestmate recognition cues in the African termite raiding ant *Pachycondyla analis* (Poster presentation)
47. ARPPIS Alumni Association Biennial conference/silver jubilee celebrations, 24th -27th November 2008, icipe, Duduville campus, Nairobi, Kenya. Title of paper: Predation on termites of the sub-family Macrotermitinae by the ant *Pachycondyla analis* (Oral presentation)
48. XXIII International Congress of Entomology (ICE), 5th-12th July 2008, Durban, South Africa. Title of paper: Termite raiding behaviour of the Ponerine ant *Pachycondyla analis* in a Kenyan savannah (Poster presentation)
49. Semiochemicals in Insect Pest and Disease Vector Management: the African Perspective (SEMIO-08), 11th- 15th February 2008, Arusha, Tanzania. Title of paper: Semiochemicals involved in termite raiding by the Ponerine ant *Pachycondyla analis*, observations on raiding behaviour (Poster presentation)

8.2 Teamwork and collaboration with others:

Other researchers (national and international)

International:

- Prof Robert Paxton, Institute of Biology and Zoology, Martin Luther University, Halle, Germany (Bee viruses)
- Prof Tuen Dekker, Swedish University of Agriculture, Alnarp, Sweden (fruit fly chemistry)
- Prof Anne Akol, Department of Zoology, Entomology and Fisheries, Makerere University, Uganda (Ant and honey bee ecology)
- Prof Robin Moritz, Molecular Ecology Research Group, Martin-Luther University Halle, Germany (Honey bee molecular ecology)
- Prof Ado Baba Ahmed, Faculty of Arts and Science, University of the Gambia (forensic entomology)
- Prof Adamu Abu-Kassim, Department of Biological Sciences, Ahmadu Bello University, Nigeria (General zoology)
- Idris Barau, Director Beekeeping Extension Society, Zaria, Nigeria (Community beekeeping)
- Dr Dennis vanEngelsdorp, Honeybee laboratory, University of Maryland, USA (honey bee research)

- Dr Naina Razafidaraleva, Department of Entomology, University of Antananarivo, Madagascar (Honey bee research)
- Prof Huo-Qing Zheng, Honeybee Research Group, Zhejiang University, China (Honey bee research)
- Dr Saliou Niassy, International Centre of Insect Physiology and Ecology, Nairobi, Kenya (Edible insects)
- Prof Baldwin Torto, International Centre of Insect Physiology and Ecology, Nairobi, Kenya (Chemical ecology)
- Prof Fu-Liang Hu, Honeybee Research Group, Zhejiang University, China (Honey bee research)
- Dr Fathiya Khamis, Molecular Biology Research Unit, International Centre of Insect Physiology and Ecology, Nairobi, Kenya (Arthropod genetics)
- Dr Akutse Komivi, International Centre of Insect Physiology and Ecology, Nairobi, Kenya (Arthropod pathology)

National (University of Pretoria):

- Prof Jean Lubuma and Prof Salisu Garba, Department of Mathematics and Applied Mathematics, University of Pretoria (mathematical modelling of honey bee pheromones and population)
- Prof Marion Meyer, Department of Plant Sciences, University of Pretoria (plant natural products)
- Dr Natasha October, Department of Chemistry, University of Pretoria (plant natural products)
- Prof Lucy Moleleki BGM, University of Pretoria (AHLs and Quorum sensing in bacteria)
- Prof Sue Nicolson and Prof Kerstin Kruger, Department of Zoology, University of Pretoria (Alkaloids from Nicotine plant)
- Prof Emmanuel Tshakeleng, Department of Plant Sciences, University of Pretoria (Anti Inflammatory properties of plants)
- Dr Sekelwa Cosa Department of Biochemistry Genetics and Microbiology (Quorum sensing and bioprospecting for plant-based antibiotics)
- Dr Johana Bapela, Department of Plant and Soil Science (Medicinal plants)
- Dr Gary Stafford, Department of Plant and Soil Science (Analysis of smoke and plant volatiles)

Other research institutions (national and international)

- Dr Claire Spottiswoode, University of Cape Town (honey guide project)
- Samaru College of Agriculture, Zaria, Nigeria (project on *Apis mellifera adansonii*)
- Dr Robert S. Nofemela, ARC –Plant Protection Research Institute, Pretoria, South Africa (Integrated pest management for invasive pests)
- Prof Rasheed Adeleke, Department of Microbiology, School of Biological Sciences, Northwest University, South Africa (Microbial exchange in honey bees)
- Dr Terence Suinyuy, University of Mpumalanga, Mbombela (Flower volatilome)
- Dr Michael Meusel, University of Kwazulu-Natal, Pietermaritzburg (Population dynamics of honey bee colonies), South Africa
- Dr Mohammed Balogun, CSIR, Pretoria (Natural product chemistry)
- Peter Hawkes, AfriBugs, CC (Chemo-taxonomy of ants)
- Dr Gimo Daniel, National Museum Bloemfontein (General taxonomy)
- Dr Tharina Bird, Ditsong museum, Pretoria (Chemical ecology of arthropods).

Industry

- South African Bee Industry (SABIO)
- Potato South Africa

8.3 Membership in national and international bodies

List all the scientific associations or societies to which you belong. Name your involvement, e.g. honorary member, founder member, full member, chairman, president, secretary

- African German Network for Excellence in Science (AGNES)
- Pan-African Scientific Research Council (Fellow)
- Registered Professional Natural Scientist (Pr. Sci. Nat.) Reg no. 400260/13
- Entomological Society of Southern Africa (Member)
- African Association of Insect Scientist (AAIS) (Advisory committee member).
- Entomological Society of Nigeria (Member)
- International Beekeepers' Associations-Apimondia (Member)
- European Cooperation in Science and Technology (COST-Action) (Member)
- International Society of Chemical Ecology (ISCE) (Member)
- South African Chromatography Society (ChromSA) (Member)
- International Union for the Study of Social Insects (IUSI) (Treasurer/Convener African Section)
- Society for Chemical Industry (SCI) Member
- African Apimondia Regional network- Leader Task force on honey adulteration.

8.4 Visits to local and overseas universities or research institutes as guest professor or researcher

Details are required

- School of Art and Sciences, University of the Gambia, (May – June 2023)
- Department of Biological Sciences Ahmadu Bello University, Zaria, Nigeria (December 2022– January 2023)
- Institute of Biology/Zoology, Martin Luther University, Halle-Wittenberg, Germany (July- December 2019)
- Molecular Ecology Research Group, Martin Luther University, Halle-Wittenberg, Germany (August 2016 to February 2018)
- University of Würzburg, Zoology II Zentrum, Germany, Research and Postgraduate training collaboration (June 2018)
- International Centre of Insect Physiology and Ecology (ICIPE), Nairobi, Kenya. Research collaborations in applied arthropods (15th to 21st May, 2016)
- Zhejiang University, Honeybee Research Group as part of the South Africa- China honeybee NRF funded research (2nd to 10th August, 2014)
- Department of Zoology, Makerere University, Uganda, for apicultural research (September 2012 and April 2019)

10. ARTISTIC OUTPUTS (if applicable)

9.1 Provide full details of artistic outputs, including public reviews of work, coordinating reports by experts in the field, publisher, production company etc

NA

10. MANAGEMENT AND ADMINISTRATIVE DUTIES

○ *List your involvement in departmental activities (e.g. administrative functions), faculty (e.g. Faculty Committees) or other university activities.*

- NAS Faculty Admission committee member (Since 2022)
- Acting as HoD on adhoc basis (Since 2022)
- Member FABI MANCOM (Since 2021)
- Member MAN COM UP Institute for Sustainable Malaria Control
- Member Departmental Transformation Committee (Since 2018)
- Member representing DZE on MeR experimental committee
- Member Hillcrest Experimental farm/Innovation Africa
- Research Leader Future Africa (Since 2017)
(<http://www.futureafrica.science/index.php/our-community/research-leaders>)
- Member University of Pretoria Reference Group on UP Africa strategy (2014)
- Internal reviewer for NRF MSc, PhD, Post Doc applications (2014, 2015, 2022)
- Departmental coordinator for *UP with science* (2014 to 2016)
- Manager Analytical Chemistry facilities of the Chemical Ecology laboratory at the Social Insects Research Group (Since 2010)
- Participated in UP open days (Since 2011)

11. COMMUNITY SERVICE OR PROFESSIONAL SKILLS

11.1 Outreach projects

(e.g. project titles, institutions and communities involved, etc.)

- UP Way activations #UPcares on the campuses of University of Pretoria, 2022
- Speaker on research and time management-MasterCard scholarship programme UP, 2019, 2020, 2021, 2022
- Project on adoption of sustainable edible insect practices in collaboration with Kujenga Digital during Pan-African cultural week events
- Annual talk/lectures (since 2010) to the Southern and Eastern Gauteng beekeepers association on the need to embrace proper beekeeping practices
- Visits to primary/high schools in and around Pretoria for talks and display on honey bees and the importance of insect pollinators
- Beekeeping extension services via the Beekeeping Extension Society (BES) in Zaria, Nigeria
- Speaker at Postgraduate welcome/induction day(s) for Department of Research Support, University of Pretoria

11.2 Professional service performed

(e.g. courses presented, lectures at professional associations/clubs, radio or TV appearances, outside expert or appointment committee, etc.)

- Reviewer European Research Foundation grants, 2023
- Review panel member to University of Namibia, Namibian Council for Higher Education- October, 2022

- Humboldt Ambassador Scientist-2021 to date
- Commission member and reviewer for DAAD in country/region scholarships, East Africa
- Member Executive committee of the AU's African Apicultural Platform (AAP), 2015 to 2018
- UP Coordinator for African Regional Postgraduate Programme in Insect Science (ARPPIS)- 2021
- Reviewer for KU-Leuven's internal research proposals C1 category, 2023
- Alternate member representing professional bodies (scientist) NSTF-South 32 awards adjudication panel, 2019 to date
- Interview with ChaiFM on pesticides and their effects on bees 29th June 2023- [Link](#)
- Interview with SABC Channel 404-Floods, climate change and impacts on bees, 22nd June 2023
- Why bee farms fail-Interview with Sundaytrust Newspaper, Nigeria world bee day feature 21st May 2022- <https://dailytrust.com/why-many-bee-farmers-fail-professor-yusuf>
- Featured on Farmer's inside track podcast-how insects can help reduce waste 24th May 2022- <https://open.spotify.com/episode/5PVBfnxEr9axn36yYUdIN>
- My work on alcohol-based hand sanitisers was featured in more than 50 news articles including live TV and Radio interviews between 05th-09th December 2021.
- Member scientific committee 1st African edible insects conference, Harare, Zimbabwe (2019)
- Reviewer African German Network for Excellence in Science (AGNES)
- Jury Falling Walls Lab, Johannesburg, DAAD information centre Johannesburg 2019
- Trainer: Insect Chemical Ecology course for PhD students, ICE 2019, icipe, Nairobi, Kenya
- Member adjudication panel for NRF-Sweden research grant (2018, 2023)
- Featured on Living Land an SABC education series on alternative sources of nutrition in the use of Insects for food and feed (April 2016)
- Member Agricultural Sciences adjudication panel for NRF-TWAS-DAAD PhD and MSc applications (December 2015)
- Featured as a guest on the pod cast: Round the fire, a taste of Africa. Episode 1: practical ways on how to make edible insects as part of our weekly diets (April, 2021)
- Regularly featured on Voice of America Hausa (VOA) service discussing beekeeping and other related activities (at least twice in a year)
- Featured as a guest on CII International radio programme *Witness Special* discussing Honeybees and beekeeping.
- Presented lectures as part of the BIOMATH coffee meetings, University of Pretoria

11.4 Involvement with other universities/scientific institutions

(e.g. external examiner, editor of journal, advisory council, CSIR, SA Council for Scientific Professions)

- Editorial board member: Scientific Reports
<https://www.nature.com/srep/about/editors>
- Associate Editor Pest Management Science
<https://onlinelibrary.wiley.com/page/journal/15264998/homepage/editorialboard.html>
- Associate Editor Royal Society Open
- Associate Editor International Journal of Tropical Insect Sciences,
<https://www.springer.com/journal/42690/editors>

- Associate Guest Editor special issue on: Pest, Pathogens and invasions-Frontiers in Forests and Global Change, <https://www.frontiersin.org/research-topics/17688/invasive-pathogens-and-arthropods-biogeography-drivers-of-success-impacts-and-emerging-management-st>
- Guest Editor special issue on: The impacts of metals and metalloids on insect health-Frontiers in Insect Science <https://www.frontiersin.org/research-topics/29365/the-impacts-of-metals-and-metalloids-on-insect-health>
- Review Editor Insect Health and Pathology, Frontiers in Insect Science, <https://www.frontiersin.org/journals/insect-science#editorial-board>
- Subject Editor Insect Behaviour and Chemical Ecology, African Entomology <https://www.africanentomology.com/about/editorialTeam>
- External moderator Postgraduate research -Department of Zoology, University of Johannesburg
- External examiner PhD, University of Madras, Chennai, India
- Internal examiner PhD, Department of Genetics, University of Pretoria
- Internal examiner PhD, Department of Zoology & Entomology, University of Pretoria
- Internal examiner PhD, Department of Consumer and Food science
- External examiner MSc, Makerere University, Uganda
- External examiner for MTech at Tshwane University of Technology, Pretoria
- External examiner for MSc at University of Johannesburg
- External examiner for M Horticulture, Cape Peninsula University

11.5 Referee duties

(e.g. journals, dissertations/theses)

Journals: Served as a reviewer for the following journals:

- *Evolutionary Applications*
- *Chemosphere*
- *Scientific Reports*
- *Food chemistry*
- *Journal of Chemical Ecology*
- *Pest Management Science*
- *Journal of Experimental Biology*
- *Proceedings of the Royal Society B*
- *Plos One*
- *PloS NTD*
- *Biology Letters*
- *Journal of Thermal Biology*
- *Crop Protection*
- *Chemoecology*
- *Parasites and Vectors*
- *Journal of Insect Behaviour*
- *Journal of Insect Physiology*
- *Journal of Apicultural Research*
- *Journal of Applied Entomology*
- *African Entomology*

- *Bulletin of Experimental Research*
- *Heltares*
- *Journal of Biological and Agricultural Sciences*
- *International Journal of Tropical Insect Science*
- *Journal of Hymenopteran Research*
- *Phytoparasitica*
- *Physiological Entomology*
- *Royal Society Open Science*
- *Frontiers in Insect Science*
- *Frontiers in Forest and Global Change*
- *Frontiers in Sustainable Food Systems*
- *Journal of Photochemistry & Photobiology, B: Biology*
- *Chemistry and Biodiversity*

12. AWARDS AND SCIENTIFIC/SCHOLARLY RECOGNITION

12.1 Evaluation status as scientist/scholar

(e.g. NRF; first evaluation and date, subsequent evaluations and dates)

Y2 rated in 2017 (first evaluation)

C2 rated in 2023 (re-evaluation)

12.2 Research awards and prizes

Full details are required

- National Research Foundation KIC African Interaction travel grant (May-June 2023)
- Humboldt's Alumni Award for Innovative Networking ideas, Alexander von Humboldt's foundation, Germany (2019-2021)
- Tandem Research Fellowship, Alexander von Humboldt's Foundation, Germany (July-December 2019)
- National Research Foundation (NRF) Research Development Grant for Y-rated Researchers (2019-2021)
- National Research Foundation KIC African Interaction travel grant (January-July 2019)
- National Research Foundation (NRF) Incentive Funding for Y-rated Researchers (January 2017-December 2020)
- National Research Foundation (NRF) Thuthuka rating track grant to study genomic basis of communication in honeybees (March 2016 – December 2019)
- Georg Foster (HERMES) Research Fellowship for Experience Researchers, Alexander von Humboldt Foundation, Germany (August 2016 – February 2018)
- National Research Foundation (NRF) Knowledge Interchange and Collaboration (KIC) Africa interaction travel grant (December 2015-January 2016)
- National Research Foundation (NRF)/Department of Science and Technology (DST) Research Career Advancement Fellowship (2014 – 2019)
- Commonwealth MSc scholarship for Distance learning, at the University of Edinburgh, UK (2012 – 2015) to cover tuition and research

- National Research Foundation (NRF)/Department of Science and Technology (DST) Innovation Post-Doctoral Fellowship (2012 – 2014)
- Dean Assistantship Post-Doctoral Fellow, University of Pretoria, (January 2012 – June 2012)
- University of Pretoria Postdoctoral fellowship (November 2010 – December 2011),
- International Society of Chemical Ecology (ISCE), Scientists in developing countries grant to attend the 25th annual meeting in Neuchâtel, Switzerland (2009), Euro 1, 500 (R26,205)
- PhD fellowship of the African Regional Postgraduate Programme in Insect Science (ARPPIS) through the German Academic Exchange Programme (DAAD) at the International Centre of Insect Physiology and Ecology (ICIPE), Nairobi, Kenya (2006 – 2010)
- European Chemoreception Research Organisation (ECRO) student travel grant (2007)
- Boehringer Ingelheim Fonds (BIF) PhD student travel allowance to attend a PhD student course ICE 07 at the Swedish University of Agricultural Sciences Alnarp Sweden (4th- 16th June, 2007) to attend the Student chemical ecology course
- Overseas MSc Scholarship of the Petroleum Technology Development Fund (PTDF) Nigeria, (2003-2004)
- Total Nigeria PLC prize for Best graduating student in Biological Sciences 1999/2000 session, University of Abuja Nigeria (2000)

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