OIE Collaborating Centres Reports Activities

Activities in 2017

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Title of collaborating centre:	Training in Integrated Livestock/Wildlife Health
Address of Collaborating Centre:	Faculty of Veterinary Science University of Pretoria Private Bag X04 Onderstepoort 0110 SOUTH AFRICA
Tel.:	+27-12 529.84.26
Fax:	+27-12 529.83.12
E-mail address:	anita.michel@up.ac.za
Website:	http://www.up.ac.za/faculty-of-veterinary-science/
Name of Director of Institute (Responsible Official):	Prof Darrell Abernethy
Name (including Title and Position) of Head of the Collaborating Centre (formally OIE Contact Point):	Prof Anita Michel
Name of writer:	Prof Anita Michel

ToR: To provide services to the OIE, in particular within the region, in the designated specialty, in support of the implementation of OIE policies and, where required, seek for collaboration with OIE Reference Laboratories

ToR: To identify and maintain existing expertise, in particular within its region

1. Activities as a centre of research, expertise, standardisation and dissemination of techniques within the remit of the mandate given by the OIE

Training, capacity building	
Title of activity	**Scope**
June to Sept 2017 Visitation of Vet Faculty at Onderstepoort to five African universities: • Makarere University, Uganda • University of Namibia, Namibia • Sokoine University of Agricultural, Tanzania • KNUST, Ghana (Kwame Nkrumah University of Science and Technology) • University of Zimbabwe, Zimbabwe	A workshop on Open Educational Resources was facilitated at each university
27-29 Sept 2017: Open Educational Resources Workshop at Vet Faculty at Onderstepoort	Evaluation and delivery of educational materials for veterinary training
GIS course	Training in GIS was provided to veterinary officials in Uganda
15-17 Nov 2017: Short course on bovine tuberculosis. Hans Hoheisen WIldilfe Research Station, South Africa	Aetiology, epidemiology, diagnosis and control of BTB wildlife and livestock offered to 18 trainees from 3 southern African countries.
Diagnosis, biotechnology and laboratory	
Title of activity	**Scope**
23-30 Sept 2017: African Anthrax workshop; Skukuza - Kruger National Park	Training of technologists from central veterinary laboratories from 8 southern African countries in the laboratory diagnosis of anthrax and blood parasites

ToR : To propose or develop methods and procedures that facilitate harmonisation of international standards and guidelines applicable to the designated specialty

2. Proposal or development of any procedure that will facilitate harmonisation of international regulations applicable to the surveillance and control of animal diseases, food safety or animal welfare

Proposal title	Scope/Content	Applicable area
0	0	☐Surveillance and control of animal diseases ☐Food safety ☐Animal welfare

ToR: To establish and maintain a network with other OIE Collaborating Centres designated for the same specialty, and should the need arise, with Collaborating Centres in other disciplines

ToR: To carry out and/or coordinate scientific and technical studies in collaboration with other centres, laboratories or organisations

3. Did your Collaborating Centre maintain a network with other OIE Collaborating Centres (CC), Reference Laboratories (RL), or organisations designated for the same specialty, to coordinate scientific and technical studies?

No

4. Did your Collaborating Centre maintain a network with other OIE Collaborating Centres, Reference laboratories, or organisations in other disciplines, to coordinate scientific and technical studies?

Yes

Name of OIE CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise "G.Caporale"	Terramo, Italy	☐Africa ☐Americas ☐Asia and Pacific ☒Europe ☐Middle East	Establishment of the "Enhancing Research for Africa Network"
Reference laboratory for Contagious Bovine Pleuropneumonia	Gaborone, Botswana	☐Africa ☐Americas ☐Asia and Pacific ☐Europe ☐Middle East	Establishment of the "Enhancing Research for Africa Network"

ToR: To place expert consultants at the disposal of the OIE.

5. Did your Collaborating Centre place expert consultants at the disposal of the OIE?

Yes

Name of expert	Kind of consultancy	Subject

Dr Hein Stoltz	Member of OIE Ad Hoc Group meeting, 8-10 Feb 2017, Paris	Theileriosis
Dr Hein Stoltz	Expert during Regional seminar for OIE National Focal Points, Swaziland, 6-8 Dec 2017	Veterinary Products (cycle V)

ToR: To provide, within the designated specialty, scientific and technical training to personnel from OIE Member Countries

6. Did your Collaborating Centre provide scientific and technical training, within the remit of the mandate given by the OIE, to personnel from OIE Member Countries?

Yes
a) Technical visits: 0
b) Seminars: 0
c) Hands-on training courses: 8
d) Internships (>1 month): 0

Type of technical training provided (a, b, c or d)	Content	Country of origin of the expert(s) provided with training	No. participants from the corresponding country
c	Laboratory diagnosis of anthrax and blood parasites	Lesotho, Swaziland, Namibia, Botswana, Mozambique, ZImbabwe, Zambia, South Africa	8

ToR: To organise and participate in scientific meetings and other activities on behalf of the OIE

7. Did your Collaborating Centre organise or participate in the organisation of scientific meetings on behalf of the OIE?

Yes

National/International	Title of event	Co-organiser	Date (mm/yy)	Location	No. Participants
International	ERFAN Workshop	Istituto Zooprofilattico Sperimentale "G.Caporale"	4-5 October 2017	Pretoria, South Africa	31

ToR: To collect, process, analyse, publish and disseminate data and information

relevant to the designated specialty

8. Publication and dissemination of any information within the remit of the mandate given by the OIE that may be useful to Member Countries of the OIE

a) Articles published in peer-reviewed journals: 66

Chipangura JK, Eagar H, Kgoete SM, Abernethy DA, Naidoo V
(2017). An investigation of antimicrobial usage patterns by small animal veterinarians in South Africa . PREVENTIVE VETERINARY MEDICINE, 136 pp. 29 - 38..
Azeez OI, Myburgh JG, Meintjes RA, Oosthuizen MC, Chamunorwa JP (2017). Histomorphology, ultrastructure and fatty acid composition of the
adipose tissue in pansteatitis, the potentials in understanding the underlying mechanism and diagnosis of pansteatitis in the Nile crocodile . Lipids in Health and Disease, 16 (47), pp. 1 - 19..
Mubemba B, Thompson PN, Odendaal L, Coetzee P, Venter E
(2017). Evaluation of positive Rift Valley fever virus formalin-fixed paraffin embedded samples as a source of sequence data for retrospective phylogenetic analysis . JOURNAL OF VIROLOGICAL METHODS, 243 pp. 10 - 14..
Bruns AC, Tanner M, Williams MC, Botha L, O'Brien A, Fosgate GT, van Helden P, Clarke J, Michel AL (2017). Diagnosis and implications of mycobacterium bovis infection in banded mongooses (mungos mungo) in the Kruger National Park, South Africa. JOURNAL OF WILDLIFE DISEASES, 53 (1), pp. 19 - 29..
Barrows M, Koeppel KN, Michel AL, Mitchell E (2017). Mycobacterial arthritis and synovitis in painted reed frogs (Hyperolius marmoratus) . JOURNAL OF COMPARATIVE PATHOLOGY, 156 pp. 275 - 280.
Thomson GR, Fosgate GT, Penrith ML
(2017). Eradication of transboundary animal diseases: Can the rinderpest success story be repeated?. Transboundary and Emerging Diseases, 64 pp. 459 - 475..
Albers-Wolthers K, de Gier J, Walen M, van Kooten P, Lambalk C, Leegwater P, Roelen B, Schaefers-Okkens A, Rutten VP, Millar RP
(2017). In vitro and in vivo effects of kisspeptin antagonists p234, p271, p354, and p356 on GPR54 activation. PLoS One, 12 (6), pp. 1 - 16..
Burroughs REJ, Penzhorn BL, Wiesel I, Barker N, Vorster I, Oosthuizen MC (2017). Piroplasms in brown hyaenas (Parahyaena brunnea) and spotted hyaenas (Crocuta crocuta) in Namibia and South Africa are closely related to Babesia lengau. PARASITOLOGY RESEARCH, 116 pp. 685 - 692.
Jenkins AO, Michel AL, Rutten VP
(2017). Original Mycobacterial Sin, a consequence of highly homologous antigens?. VETERINARY MICROBIOLOGY, 203 pp. 286 - 293.
Chisi S, Marageni Y, Naidoo P, Zulu G, Akol G, van Heerden H
(2017). An evaluation of serological tests in the diagnosis of bovine brucellosis in naturally infected cattle in KwaZulu-Natal province in South Africa . Journal of the South African Veterinary Association, 88 pp. 1 - 7.
Ngere L, Burke J, Herring A, Sanders J, Craig T, van Wyk JA, Riley D
(2017). Utilization of year-round data in the estimation of genetic parameters for internal parasite resistance traits in Dorper sheep. SMALL RUMINANT RESEARCH, 151 pp. 5 - 10..
Munzhelele P, Oguttu J, Fasanmi OG, Fasina FO
(2017). Production constraints of smallholder pig farms in agro-ecological zones of Mpumalanga, South Africa. TROPICAL ANIMAL HEALTH AND PRODUCTION, 49 pp. 63 - 69.
Troskie C, Latif A, Mans BJ, Combrink M
(2017). Efficacy of South African Babesia bovis vaccine against field isolates
. Ticks and Tick-Borne Diseases, 8 pp. 671 - 674..
Mathebula EM, Faber F, van Wyngaardt W, van Schalkwyk A, Pretorius A, Fehrsen J
(2017). B-cell epitopes of African horse sickness virus serotype 4 recognised by immune horse sera
. ONDERSTEPOORT JOURNAL OF VETERINARY RESEARCH, 84 (1), pp. 1 - 12..
Carpenter S, Mellor P, Fall A, Garros C, Venter GJ
(2017). African Horse Sickness Virus: History, transmission, and current status. Annual Review of Entomology, 62 pp. 343 - 358..
Loots AK, Mitchell E, Dalton D, Kotze A, Venter EH (2017). Advances in canine distemper virus pathogenesis research: A wildlife perspective. JOURNAL OF GENERAL VIROLOGY, 98 pp. 311 - 321..
Schellack N, Benjamin D, Brink A, Duse A, Faure K, Goff D, Mendelson M,
Meyer J, Miot J, Jansen van Vuuren M (2017). A situational analysis of current antimicrobial governance, regulation, and utilization in South Africa
. INTERNATIONAL JOURNAL OF INFECTIOUS DISEASES, 64 pp. 100 - 106..
Conan AY, Geerdes J, Akerele O, Reininghaus B, Simpson GJG, Knobel D (2017). Census and vaccination coverage of owned dog populations in four resource-limited rural communities, Mpumalanga province, South Africa

. Journal of the South African Veterinary Association, 88 pp. 1 - 7..
Horak IG, Heyne H, Halajian A, Booysen SN, Smit W (2017). Parasites of domestic and wild animals in South Africa. L. Ixodid ticks infesting horses and donkeys
. ONDERSTEPOORT JOURNAL OF VETERINARY RESEARCH, 84 (1), pp. 1 - 6..
Chaisi ME, Baxter JR, Hove P, Choopa CN, Oosthuizen MC, Brayton KA, Khumalo ZT, Mutshembele A, Mtshali M, Collins NE
(2017). Comparison of three nucleic acid-based tests for detecting Anaplasma marginale and Anaplasma centrale in cattle. ONDERSTEPOORT JOURNAL OF VETERINARY RESEARCH, 84 (1), pp. 1 - 9..
Penzhorn BL, Vorster I, Harrison-White R, Oosthuizen MC
(2017). Black-backed jackals (Canis mesomelas) are natural hosts of Babesia rossi, the virulent causative agent of canine babesiosis in sub-Saharan Africa
. Parasites & Vectors, 10 (124), pp. 1 - 6..

Turner W, K€usters M, Versfeld W, Horak IG
(2017). Ixodid tick diversity on wild mammals, birds and reptiles in and around Etosha National Park, Namibia
. AFRICAN JOURNAL OF ECOLOGY, 55 pp. 714 - 721..
McDermid K, Snyman A, Verreynne F, Carroll J, Penzhorn BL, Yabsley M
(2017). Surveillance for viral and parasitic pathogens in a vulnerable African lion (Panthera Leo) population in the Northen Tuli Game Reserve, Botswana. JOURNAL OF WILDLIFE DISEASES, 53 (1), pp. 54 - 61..
Koehler S, Buyuk F, Celebi O, Demiraslan H, Doganay M, Sahin M, Moehring J, Ndumnego OC, Otlu S, van Heerden H (2017). Protection of farm goats by combinations of recombinant peptides and formalin inactivated spores from a lethal Bacillus anthracis challenge under field conditions
. BMC Veterinary Research, 13 (220), pp. 1 - 11.

Matsimbe A, Magaia V, Sanches G, Neves LCBGD, Noormahomed E, Antunes S, Domingos A (2017). Molecular detection of pathogens in ticks infesting cattle in Nampula province, Mozambique. EXPERIMENTAL AND APPLIED ACAROLOGY, 73 pp. 91 - 102.
Mans BJ, Featherston J, de Castro M, Pienaar R (2017). Gene duplication and protein evolution in tick-host interactions. Frontiers in Cellular and Infection Microbiology, 7 pp. 1 - 14..
Dippenaar A, Parsons S, Miller M, Hlokwe T, Gey van Pittius N, Adroub S,
Abdallah A, Pain A, Warren R, Michel AL (2017). Progenitor strain introduction of Mycobacterium bovis at the wildlife- livestock interface can lead to clonal expansion of the disease in a single ecosystem. Infection, Genetics and Evolution, 51 pp. 235 - 238..
Nefefe T, Liebenberg J, van Kleef M, Steyn H, Pretorius A
(2017). Innate immune transcriptomic evaluation of PBMC isolated from sheep after infection with E. ruminantium Welgevonden strain
. MOLECULAR IMMUNOLOGY, 91 pp. 238 - 248.
Fasanmi OG, Balogun F, Makinde G, Fasina FO. (2017). Review of microbial zoonoses in Slaughterhouses and identified potential critical risk points along red meat processing chain in Nigeria. CAB Reviews: Perspectives in Agriculture, Veterinary Science, Nutrition and Natural Resources, 12 (25), pp. 1 - 12..
Sands A, Apanaskevich D, Matthee S, Horak IG, Harrison A, Karim S,
Mohammad M, Mumcuoglu K, Rajakaruna R, Santos-Silva M (2017). Effects of tectonics and large scale climatic changes on the evolutionary history of Hyalomma ticks. . MOLECULAR PHYLOGENETICS AND EVOLUTION, 114 pp. 153 - 165..
van der Heijden EMD, Chileshe J, Vernooij J, Gortazar C, Juste R, Sevilla I,Crafford JE, Rutten VP, Michel AL(2017). Immune response profiles of calves following vaccination with live BCG and inactivated Mycobacterium bovis vaccine candidates.. PLoS One, 12 (11), pp. 1 - 20.

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(2017). Farm-level risk factors associated with bovine tuberculosis in the dairy sector in Eritrea Not approved online copy only. Transboundary and Emerging Diseases, 2017 pp. 1 - 9..
Abubakar RH, Madoroba E, Adenubi OT, MorarLeather D, Fasina FO
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Nyanhongo N, Hansen M, Nymo I, Godfroid JXL, Michel AL
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Zivcec M, Albarino C, Guerrero L, Ksiazek T, Nichol S, Swanepoel R, Rollin P,Spiropoulou C (2017). Genome sequences of Crimean-Congo Hemorrhagic Fever Virus strains isolated in South Africa, Namibia and Turkey.

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Announcements, 5 (NOT ACCREDITED), pp. 1 - 2..
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Fruit Bats (Eidolon helvum). Tropical Medicine and Infectious Disease, 2
(26), pp. 1 - 4..
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Distemper Virus Strains from a recent disease outbreak in South Africa .
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Mbugi E, Katale B, MLupindu A, Keyyu J, Kendall S, Dockrell H, Michel AL, Matee M, van Helden P (2017). Tuberculosis Infection: Occurrence and Risk Factors in Presumptive Tuberculosis Patients of the Serengeti Ecosystem in
Tanzania. . The East African Health Research Journal(EAHRJ), 1 (1), pp. 19 - 30..
Horak IG, Boshoff C, Cooper D, Foggin C, Govender D, Harrison A, Haulser
G, Hofmeyr M, Kilian J, MacFadyen D (2017). Parasites of domestic and wild animals in South Africa. XLIX. Ticks (Acari: Ixodidae) infesting white and black rhinoceroses in southern Africa
. ONDERSTEPOORT JOURNAL OF VETERINARY RESEARCH, 84 (1), pp. 1 -11.
Michel AL, Lane E, de Klerk-Lorist L, Hofmeyr M, van der Heijden EMD,
Botha L, van Helden P, Miller M, Buss P (2017). Experimental Mycobacterium bovis infection in three white rhinoceroses (Ceratotherium simum): Susceptibility, clinical and anatomical pathology. PLoS One, 12 (7), pp. 1 - 16..
Tuppurainen E, Venter EH, Shisler J, Gari G, Mekonnen G, Juleff N, Lyons N,
De Clercq K, Upton C, Bowden T (2017). Capripoxvirus diseases: current status and opportunities for control. Transboundary and Emerging Diseases, 69 (2017), pp. 729 - 745..
Seo W, Servat A, Cliquet F, Jenkins AO, Prehaud C, Lafon M, Sabeta CT (2017). Comparison of G protein sequences of South African street rabies viruses showing distinct progression of the disease in a mouse model of experimental rabies
. MICROBES AND INFECTION, 19 (2017), pp. 485 - 491.
Seo W, Prehaud C, Khan Z, Sabeta CT, Lafon M (2017). Investigation of rabies virus glycoprotein carboxyl terminus as an in vitro predictive tool of neurovirulence. A 3R approach. MICROBES AND INFECTION, 19 (2017), pp. 476 - 484..
Cangi N, Pinarello V, Bournez L, Lefrançois T, Albina E, Neves LCBGD,
Vachiéry N
(2017). Efficient high-throughput molecular method to detect Ehrlichia ruminantium in ticks. . Parasites & Vectors, 1 pp. 1 - 12..
Fasanmi O, Odetokun I, Balogun F, Fasina FO
(2017). Public health concerns of highly pathogenic avian influenza H5N1 endemicity in Africa. . Veterinary World, 10 pp. 1194 - 1204.
de Beer C, Moyaba P, Boikanyo S, Majatladi D, Yamada H, Venter GJ,
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. PLoS Neglected Tropical Diseases, 1 pp. 1 - 16..
Phaswana PH, Ndumnego OC, Koehler S, Beyer W, Crafford JE, van Heerden H
(2017). Use of the mice passive protection test to evaluate the humoral response in goats vaccinated with Sterne 34F2 live spore vaccine
. VETERINARY RESEARCH, 1 pp. 1 - 8..
Coetzee M, Blumberg L, Paweska J, Leman P, Swanepoel R, de Kocka A (2017). Crimean-Congo haemorrhagic fever presenting with undiagnosed chronic myeloid leukaemia
. Southern African Journal of Infectious Diseases (Formelry Southern African Journal of Epidemiology and Infection), 4 pp. 142 - 144..
Hassim A, Dekker E, Byaruhanga C, Reardon T, van Heerden H (2017). A retrospective study of anthrax on the Ghaap Plateau, Northern Cape province of South Africa, with special reference to the 2007–2008 outbreaks
. ONDERSTEPOORT JOURNAL OF VETERINARY RESEARCH, 1 pp. 1 - 15..
Ali M, El-Shesheny R, Shehata M, Elsokary B, Gomaa M, Hassan N, El Sayed A, El-Taweel A, Sobhy H, Fasina FO
(2017). Cross-sectional surveillance of Middle East respiratory syndrome coronavirus (MERS-CoV) in dromedary camels and other mammals in Egypt, August 2015 to January 2016
. Eurosurveillance, 22 (11), pp. 1 - 8..
Estrada-Pena A, D'Amico G, Palomar A, Dupraz M, Fonville M, Heylen D,

Habela M, Hornok S, Lempereur L, Madder M (2017). A comparative test of ixodid tick identification by a network of European researchers
. Ticks and Tick-Borne Diseases, 8 (4), pp. 540 - 546..
Nyangiwe N, van der Mesch L, Horak IG, Matthee S (2017). Range expansion of the economically important Asiatic blue tick, Rhipicephalus microplus, in South Africa. Journal of the South African Veterinary Association, 88 (0), pp. 1 - 7..

Combrink L, Combrink HJ, Botha A, Downs C
(2017). Habitat structure and diversity influence the nesting success of an endangered large cavity-nesting bird, the Southern Ground-hornbill. Koedoe, 59 (1), pp. 1 - 8..

Bastiaensen PX, Abernethy DA, Etter EMC (2017). Assessing the extent and use of risk analysis methodologies in Africa, using data derived from the Performance of Veterinary Services (PVS) Pathway. REVUE SCIENTIFIQUE ET TECHNIQUE-OFFICE INTERNATIONAL DES EPIZOOTIES, 36 (1), pp. 163 - 174..
Scott KA, Rathogwa NM, Capozzo A, Maree FF. (2017). Evaluation of immune responses of stabilised SAT2 antigens of foot-
and-mouth disease in cattle. VACCINE, 35 (2017), pp. 5426 - 5433.
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. One Health, 3 (2017), pp. 70 - 75.
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Scott KA, Kotecha A, Seago J, Ren J, Fry E, Stuart D, Charleston B, Maree FF
(2017). SAT2 Foot-and-Mouth Disease Virus Structurally Modified for Increased Thermostability. JOURNAL OF VIROLOGY, 91 (10), pp. 1 - 15..
Combrink L, Combrink HJ, Botha A, Downs C (2017). Nest temperature fluctuations in a cavity nester, the southern ground-hornbill
. JOURNAL OF THERMAL BIOLOGY, 66 (2017), pp. 21 - 26.
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Sungirai M, ABATIH E, Moyo D, DeClercq P, Madder M (2017). Shifts in the distribution of ixodid ticks parasitizing cattle in Zimbabwe. MEDICAL AND VETERINARY ENTOMOLOGY, 31 pp. 78 - 87..
Rodrigues C, Garcia H, Rodrigues A, Costa-Martins A, Pereira C, Pereira D,
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Parsons S, MorarLeather D, Buss P, Hofmeyr J, McFadyen R, Rutten VP, van Helden P, Miller M, Michel AL (2017). The Kinetics of the humoral and interferon-gamma immune responses to experimental Mycobacterium bovis infection in the White rhinoceros (Ceratotherium simum). Frontiers in Immunology, 8 December: pp. 1 - 7..
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b) International conferences: 4

Anita Michel. Writing a scientific article for publication. Newton Researcher Links Workshop. Viruses without borders. 26 February - 1 March 2017. La Wiida Lodge, Hennopsriver, Gauteng, South Africa.

Anita L. Michel, Annett Annandale, Liezl Kok. Development of a diagnostic intradermal tuberculin test model for bovine tuberculosis. Poster presented at The 5th International Veterinary Simulation in Teaching Conference. Intundla Lodge, South Africa, 10 – 13 April 2017.

Anita Michel. Infectious Diseases and Livelihoods: Connecting the dots. Keynote address. 2nd RP-PCP Regional Conference. Coexisting (with)in TFCA, local perspectives. Palm Tree Lodge, Chiredzi, South East Lowveld, Zimbabwe. 22 - 26 May 2017.

Anita Michel. 2017. Mycobacterium bovis infection at the wildlife/lilvestock/humann interface: what is different in

the African perspective? Symposium on Zoonoses. A One Health Approach. 10 September, University of the West Indies.

c) National conferences: 3
Anita Michel, Peter Buss, Emily Lane, Darshana Morar, Elise van der Heijden, Lin-Mari de Klerk-Lorist, Markus Hofmeyr, Victor Rutten, Paul van Helden, Sven Parsons, Michele Miller. Exploring the susceptibility of white rhinoceroses (Ceratotherium simum) to bovine tuberculosis. Veterinary management of African Wildlife Conference. 22 – 25 February 2017. University of Pretoria, Onderstepoort, South Africa.

Anita Michel. Blame it on the Animals? 2nd One Health Day Symposium. 21 November 2017, ARC-Onderstepoort Veterinary Institute.

Sichewo, P., Etter, E., Michel A.L. 2017. Mycobacterium obvis infection in cattle at the wildlife/livestock interface in northern KwaZulu-Natal province, South Africa. Conference presentation, Annual congress of the Southern African Society for Veterinary Epidemiology and Preventive Medicine. 2 – 27 July 2017, Birchwood Hotel, Boksburg, South Africa.

d) Other
(Provide website address or link to appropriate information): 1
Bovine Tuberculosis Outreach Day information booklet
http://www.up.ac.za/veterinary-tropical-diseases