



DST-NRF Centre of Excellence
“Birds as Keys to Biodiversity Conservation”
FitzPatrick Institute of African Ornithology, UCT

ANNUAL REPORT 2017

Reporting Period
1 January - 31 December 2017

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CoE Identification

Name of Director	: Prof. Peter Ryan
Name of CoE	: DST-NRF Centre of Excellence at the FitzPatrick Institute of African Ornithology
Abbreviated CoE name	: FitzPatrick Institute CoE
Host Institution	: University of Cape Town
Date completed	: 15 February 2018

EXECUTIVE SUMMARY

1. Funding of the CoE for 2017

DST-NRF CoE funding for 2017	:	R 7 161 899
Carry forward from 2016	:	R 613 631
Interest earned during 2016	:	R 2 072
UCT URC support for Hotbirds project in 2017	:	R 358 095*
Funding from other sources for the CoE in 2017	:	R 12 747 000**
Total funding	:	R 20 882 697

* represents UCT's direct contribution to the CoE: 5% of R7 161 899 = R358 095

The indirect 5% contribution is defined by staff salaries and institutional operation support by UCT as agreed by the NRF

** funding from sources, other than the DST-NRF or UCT URC 'hotbirds' grants, for projects conducted by the CoE (see Finances Section pages 29 - 32)

2. Summary of progress against Five Key Performance Areas

(i) Research

The CoE had another good year with 132 papers published in peer-reviewed journals during 2017, including 34 in journals with an impact factor rating ≥ 3.5 , of which 10 were in journals with a rating ≥ 5 . The Centre for World University Rankings (CWUR) released their inaugural subject rankings on 3 April 2017, which placed UCT third in Ornithology out of over 26 000 higher education institutions.

(ii) Education and Training

A total of 72 post-graduate students (25 PhD, 45 MSc and two BSc Hons) registered at South African universities (19% black and 54% women) were supported by the CoE during 2017. Twenty-eight students graduated during 2017 (8 PhD, 4 MSc by dissertation, 13 MSc Conservation Biology and 3 BSc Honours). Collaboration with A/Prof. Derek Engelbrecht at the University of Limpopo (UL) resulted in a further four students visiting the CoE for three weeks during June and July 2017 as interns. Nine post-doctoral fellows were supported by the CoE during 2017. CoE post-docs and students received two oral presentation awards and one poster award at conferences during 2017.

(iii) Information Brokerage

CoE members published 55 semi-popular articles, two books and five chapter contributions to semi-technical books during 2017. CoE members attended 18 international and 16 local conferences, and presented over 50 seminars and illustrated talks at universities, bird clubs and membership-based societies during 2017.

(iv) Networking

The CoE conducted a broad range of close collaborative working relationships with at least 100 scientific peers and a variety of conservation NGOs and governmental organisations exists both nationally and internationally. The CoE continues to build much-needed African capacity in the broad arena of biodiversity conservation.

(v) Service rendering

The CoE actively advised NGOs, government departments and industry on a variety of research and applied conservation topics. CoE members served on 27 journal editorial boards, 76 membership fora and advisory services, and reviewed 137 papers for 60 peer-reviewed journals during 2017.

Summary of FitzPatrick Institute CoE 2017 achievements against SLA6 targets

SLA Output	SLA target	Achieved
Number of students	≥ 30	72
Women students	≥ 50%	54%
Black students	≥ 30%	19%*
Average duration of MSc degrees	≤ 2 yrs	1.82
Average duration of PhD degrees	≤ 4 yrs	4.25
Average duration upgraded PhDs	≤ 5 yrs	n/a
Number of Post-docs	≥ 6	9
Number of peer-reviewed papers	≥ 60	129
Papers with IF ≥ 3.5	≥ 15	33
Papers with IF ≥ 5	≥ 5	10
Joint venture training	≥ 2	1

*14 black students = 43% of the SLA student number target

3. Red Flags/concerns for the future of the CoE

Following discussions at the CoE Directors' Forum in Durban in August 2016, and subsequent meetings held between officials from the DST, NRF and host universities, it became clear that there was a desire to see CoEs continue beyond 2019, but with a revised funding model that saw greater contributions from *inter alia*, host institutions, relevant government departments and other potential beneficiaries. Considering the way forward, and as requested by the NRF, a draft FitzPatrick Institute CoE strategic vision document was drafted and tabled at the CoE Steering Committee meeting held on 15 November 2017. The draft was revised following feedback from the Steering Committee and forwarded to the DST via the NRF. The DST undertook to make a decision on the future of the CoE by March 2018. Uncertainty of the process and the ultimate outcome remains a concern for the future of the CoE, and has led to the Senior Secretary of the FitzPatrick Institute CoE resigning in November 2017 to take a permanent position elsewhere in UCT.

4. General Comments

Following the positive news from the NRF in 2012 that the CoE will receive support for a third phase (2015-2019) with a minimum expectation of the same level of funding during 2015, a strategic plan and a sixth service level agreement (SLA 6) for 2015-2019 were drafted and approved by the CoE Steering Committee on 19 November 2014. The UCT Research Contracts Office has also signed a renewed Memorandum of Agreement (MoA) between the NRF and UCT for 2015-2019, and renewed CoE collaboration MoAs with the University of Pretoria and the Nelson Mandela University. Developments towards creating a collaborative partnership with the University of Limpopo has resulted in a MoA being formalised during November 2017. This annual report is the third year of SLA 6 and the renewed MoA between the NRF and UCT.

PROGRESS REPORT

1. Scientific Research

Objective

The research strategy of the CoE is aligned to a medium-term goal of producing world-class research outputs, measured as the number of papers published in international, peer-reviewed journals with high scientific impact-factor ratings. To meet this goal, the CoE SLA 6 has a target of publishing ≥ 60 peer-reviewed publications per year, with an average of ≥ 15 papers with an impact rating ≥ 3.5 , of which 5 should have an impact factor ≥ 5 each year during 2015-2019.

Progress

The CoE had another good year of scientific research publication output, with 132 papers carrying the CoE address published in peer-reviewed journals during 2017 (Appendix 1); 34 papers were in journals with impact factors ≥ 3.5 , including 10 in journals with impact factors ≥ 5 (Fig. 1).

FitzPatrick Institute CoE publications in peer-reviewed journals, 2001-2017

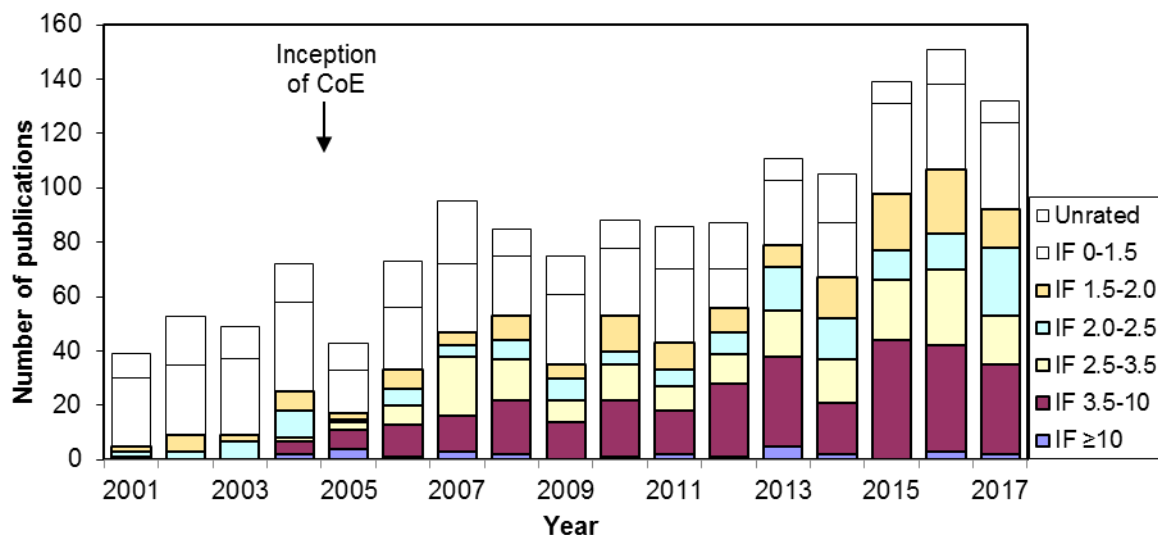


Figure 1. Trends in the number and quality of CoE publications (measured by journal 'Impact Factors' IF) before and after the establishment of the Centre of Excellence.

The Centre for World University Rankings (CWUR) released their inaugural subject rankings on 3 April 2017 which ranked UCT joint third in Ornithology out of over 26 000 higher education institutions, tied with Lund University in Sweden. The University of Groningen in the Netherlands and Cornell University in the USA were ranked first and second, respectively. These rankings highlight the world's elite universities in the sciences and social sciences, based on the number of research articles in top-tier international journals. The CWUR publishes the only global university ranking that measures the quality of education and training of students as well as the prestige of the faculty members and the quality of their research without relying on surveys and university data submissions. In addition to providing authoritative global university rankings, CWUR provides consulting services to governments and educational institutions that aspire to achieve world-class standards.

Prof. Mamokgethi Phakeng, DVC Research and Internationalisation, said: "UCT is very proud that our scholarship in this field has been internationally recognised. Having universities that

rank globally (including other South African universities) benefits the country as a whole. It sends a message that the country's higher-education system is globally competitive". "The high ranking in this field demonstrates that African researchers can take the lead in helping to solve African problems, and also that they are bringing a strong African voice to global debates." Prof. Peter Ryan, director of the Fitztitute, said: "The fact that UCT is so prominent in ornithological research provides further validation of the success of the NRF Centre of Excellence funding model." Prof. Phakeng added: "As a university, we are grateful to the NRF for the funding that we've received to enable much of the work that has happened in this area, putting South Africa and the continent on the map. It is investments such as these that will help to make the issue of African biodiversity visible globally." In addition to the Fitztitute, the Animal Demography Unit (ADU) and the Centre for Statistics in Ecology, the Environment and Conservation (SEEC) have strong interests in bird-related research, giving UCT a critical mass of ornithological researchers and research expertise unmatched in the southern hemisphere.

Prof. Peter Ryan received the Gilchrist Medal at the South African Network for Coastal and Oceanic Research (SANCOR) triennial awards ceremony of the Southern African Marine Science Symposium on 6 July 2017 in Port Elizabeth. The award recognises distinguished marine scientists and serves as recognition of the recipients' contributions to marine science, to further stimulate excellence in South African marine science, and to focus attention on South Africa's marine and coastal environments. Prof. Ryan was also inducted into UCT's prestigious College of Fellows in October 2017, which is recognition of distinguished academic work by permanent academic staff.

Prof. Claire Spottiswoode received two prestigious awards during the first half of 2017; the Bicentenary Medal of the Linnaean Society of London for "excellent work done by a scientist under the age of 40 years" on 24 May 2017, and the Scientific Medal of the Zoological Society of London for "distinguished work in Zoology by a scientist with up to 15 years postdoctoral experience" on 20 June 2017.

Dr Arjun Amar was awarded a NRF/STINT Science and Technology Research Collaboration grant based on the Sweden/South Africa research cooperation programme for his team's research on 'Birds as city slickers: Unravelling physiological mechanisms of how birds cope with urban life'. The grant of R600 000 is for the period 2017-2019. He was also promoted to Associate Professor in September 2017, with effect from January 2018.

In February 2017, Prof. Claire Spottiswoode and Dr Callan Cohen undertook an expedition to Chad to search for the Niam-niam Parrot *Poicephalus crassus* which had no documented records for almost 40 years. The Niam-niam is one of the world's most poorly-known parrots, with little known of its conservation status, and was one of the last unphotographed birds in Africa until now. They successfully located and photographed the species, and will publish these records in the near future.

Nature INDEX featured research by Amar et al. on Black Sparrowhawks as 'highlight of the month', and research by Spottiswoode et al. on honeyguides as 'top article by Altmetrics score' during May 2017.

Former BSc Hons student Gabriella Leighton, supervised by Arjun Amar, was awarded the British Ecological Society (BES) Robert May Prize in March 2017 for the best first author paper by an Early Career Researcher in the journal *Methods in Ecology and Evolution*. The BES circulated a press release, which was also sent to the UCT Communications Department.

Post-doc Dayo Osinubi was awarded the British Ecological Society Ecologists in Africa 2017 Grant for R180 000 for his study of Intra-African Bird Migration: ecology and conservation.

Graduated MSc CB student Alex Atkins published a paper titled 'Experimentally manipulating the landscape of fear to manage problem geese' in the *Journal of Wildlife Management* which was highlighted by the journal *Nature*.

PhD December 2017 graduate Kate Carstens was interviewed about the content messages of her thesis which was used for an article for the UCT December 2017 graduation brochure and website page.

Dr Rob Little submitted a CoE research report for inclusion in the UCT Research Council 2017 report on research, which is published for the university Senate Executive Committee (SEC), Senate and Council.

Awards received at conferences during 2017

PhD student Tanja van de Ven took first prize for Student Oral Presentations for her talk titled 'To fledge or not to fledge? Hot days limit hornbill reproductive success' at the Zoological Society of Southern Africa (ZSSA) Biennial Conference held in Pretoria during July 2017.

MSc student Laurie Johnson was first runner up for her poster presentation at the UCT Postgraduate Science Symposium during August 2017.

Dr Dayo Osinubi was awarded the best Post-doc oral presentation at the 8th Annual Research Symposium of the National Zoological Gardens of South Africa at the NZG in Pretoria during November 2017.

2. Education and Training

Objective

The short-term objective, as outlined in the SLA 6, is for the CoE to support (at least partially) an average of ≥ 30 postgraduate students and six Post-doctoral Fellows each year during 2015-2019. A further target is for black students to comprise $\geq 30\%$ and women students to comprise $\geq 50\%$ of the students supported by the CoE over this period. A medium- to long-term objective is to continue to build a vibrant research environment that instils a rigorous hypothetico-deductive approach to problem solving among the postgraduate student body.

Progress

Twenty-five PhD, 45 MSc and two BSc Honours students (total = 72) registered at South African universities were supported by the CoE during 2017 (Tables 1 & 8). Of these, 14 (19%) were black, and 39 (54%) were women (Tables 9 & 10). 43 (60%) of the students were South African, and of these nine were black South African students.

Twenty-eight students graduated during 2017: 8 PhD, 4 MSc by dissertation, 13 MSc Conservation Biology and three BSc Honours.

In July 2017, Sophie Garcia-Heras (UCT), Dominic Rollinson (UCT), Rabi'a Ryklief (NMU) and Rowen van Eeden (UCT) were awarded their PhD, Jonathan Botha (NMU) and Andrew de Blocq (UCT) were awarded their MSc by dissertation, Michelle Blanckenberg, Sarah Casola, Christie Craig, Carles Dura, Wesley Gush, Corey Jeal, Alicia Ly, Matthew Macray, Elelwani Nenzhelele and Ryan Olinger (all UCT) were awarded MScs in Conservation Biology, and Alexis Osborne was awarded his BSc Hons (UCT).

In December 2017, Kate Carstens, Davide Gaglio, Tanja van de Ven and Otto Whitehead were awarded their PhD (all UCT), Jerry Molepo and Danielle van den Heever (both NMU) were awarded their MSc by dissertation, Huyam Abbas, Tendai Chinho and Margaret Parrish were awarded their MSc in Conservation Biology (all UCT), and Nevanya Lubbe (U. Pta) and Abigail Ramudzuli (U. Limp.) completed their BSc Hons.

Nine Post-docs were supported by the CoE during 2017 (Tables 1 & 6). Drs Chevonne Reynolds and Margaux Rat completed their terms, while two new Post-docs, Drs Susan Miller and Alistair McInnes, were appointed. Chevonne Reynolds was appointed to a lectureship position at the University of the Witwatersrand in January 2018 and a new research collaborative partnership will be established with her as a Research Associate in the Fitz CoE.

The MSc Conservation Biology Course has continued to build much-needed capacity within and outside of South Africa in the broad area of biodiversity conservation, with the graduation of students from SA (x4), Australia, Spain, UK, USA (x4), Zambia and Zimbabwe (x2), and the enrolment of students from SA (x4), Botswana, Congo, Finland, UK, USA (x4) and Zimbabwe during 2017.

Efforts were continued to engage with students at HDIs to attract black South African students. Collaboration with A/Prof. Derek Engelbrecht at the University of Limpopo (UL), resulted in 3-4 students visiting the CoE for three weeks during June and July of 2014, 2015 and 2016 as interns. Abigail Ramudzuli, Clementine Malatji, Helga Chauke and Thato Mashigo visited the CoE from 19 June to 6 July 2017. Ditiro Moloto, who came to UCT in 2014, completed her BSc Hons at UL in 2015, with her research project led through the CoE. She continued her MSc at the CoE during 2017 under the supervision of Prof. Peter Ryan. Abigail Ramudzuli, who was part of the 2016 group, undertook her BSc Hons at UL with CoE support in 2017 and will register at UCT for an MSc funded by the CoE in 2018. A MoU between UCT and UL was finalised in November 2017 to bring A/Prof. Engelbrecht onto the core team of the CoE.

PhD student Stefan Schoombie and MSc student Danielle van den Heever attended training in science communication and engagement skills development, to participate in the FameLab heat at the Science Forum South Africa (SFSA) during December 2017.

Post-docs Diana Bolopo and Anina Coetzee were awarded generous Claude Leon scholarships.

Gareth Tate received the Purcell Memorial Award during 2017 for the best Zoology dissertation at UCT during 2016.

Table 1. Summary statistics for CoE Post-doc, PhD & MSc student numbers 2004–2017

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Post-doc	0	6	9	8	9	12	11	12	13	12	15	8	9	9
PhD	6	8	13	18	19	15	18	21	19	21	23	20	27	25
MSc	5	8	6	5	7	6	7	6	13	19	20	21	15	18
MSc CB	15	11	14	12	11	11	12	13	15	13	13	13	14	13
MSc CB ₂	13	15	11	14	12	11	11	12	12	15	13	13	12	14
BSc Hons	0	0	9	6	8	2	2	7	1	0	3	1	3	2
Tot – CB₂	26	33	51	49	54	46	50	59	61	65	74	63	68	67
Tot +CB₂	39	48	62	63	66	57	61	71	73	80	87	76	80	81

2004 = prior to CoE; MSc CB₂ = second year of a CB class cohort

3. Information Brokerage

Objective

Medium- to long-term objectives are to: (1) make a sustained contribution to the semi-popular literature aimed at popularizing science in the fields of conservation biology in general and ornithology in particular; (2) provide expert views on relevant matters for newspaper and magazine articles; and (3) contribute to books of a semi-technical nature. The CoE also has a SLA 6 target to organize at least one local conference during this stage (2015-2019).

Progress

CoE members published 55 semi-popular articles, two books and five chapter contributions to semi-technical books during 2017 (Appendix 1).

At least 50 public talks and outreach activities were given by CoE members to partner organisations and interested parties, such as the Sasol Birds and Birding Fair, various government and non-governmental organisations, environmental action groups, conservancies, bird clubs and other membership-based societies during 2017. Print media exposure included regular features in *African Birdlife*, *Wild* magazine, *SANParks Times* and *The Muse* as well as a feature article in the *Mail & Guardian Science*. Print media features in the UK and USA included placements in *The Economist*, *The Daily Mail*, *The Telegraph*, *International Business Times*, *Cosmos Magazine*, *Audubon Magazine* and *Living Bird*. Various radio interviews also were conducted, including on Cape Talk Radio, Radio 702, OFM Radio, two BBC national radio stations (including BBC Radio 4, part of the “Natural Histories” series),

German and Canadian national radio, the Hectic Nine-9 live television show for the youth on SABC2, 50/50 on SABC3, as well as the BBC World Series.

CoE staff and students attended 18 international and 16 local conferences during 2017 (Table 2), at which CoE staff and students received two oral presentation awards and one poster presentation award.

The CoE contributed material on the research activities of the CoE to the UCT 2016-2017 *Research & Innovation Report* (pages 6, 10 & 11, 14, 30, 62 - 67), the Science Faculty contribution to the UCT Social Responsiveness report for 2014-2015 (pages 100 & 101), the UCT web page to celebrate DST National Science Week during 5-12 August 2017, and the 2017 UCT postgrad prospectus.

Prof. Peter Ryan, Dr Rob Little, Dr Pierre Pistorius and two CoE MSc students, Danielle van den Heever and Jerry Molepo, attended the 2017 NRF CoE Directors Forum at the Nelson Mandela University during 31 August – 1 September 2017 and presented a Fitz CoE stand, which exposed hundreds of school learners to the CoE's research work.

CoE Post-doc Dayo Osinubi was invited to participate on a panel in Accra, Ghana, where the Ghana Wildlife Society, in partnership with Alliance Française Accra and BirdLife International joined the rest of the world to celebrate World Environment Day on 5 June 2017 under the theme 'Connecting people to nature'.

CB MSc student Julia van Velden was awarded a grant to attend and present her CB MSc project on 'Blue Cranes in agricultural lands of the Western Cape' at the Student Conference on Conservation Science at the University of Cambridge during March 2017. This conference's purpose is to bring together students from around the world to talk about conservation and hear about the amazing work being done in all corners of the globe, with over 60 countries represented at the Cambridge conference.

Dr Margaux Rat was given the privilege to present the Chris Hemborg Lecture on 6 October 2017 at the Evolutionary Biology Centre of the University of Uppsala, Sweden. Margaux was invited to give the lecture by Prof. Mats Bjorklund, and shared the stage with Prof. Johanna Mappes from the University of Jyväskylä who was invited to give the Nils von Hofsten Lecture at the two-day conference. Margaux's talk was titled 'Exploring the costs of behavioural thermoregulation within the Hot Birds Research Project'. Other keynote addresses at the meeting were presented by Dr Kjetil Lysne Voje from the University of Oslo and by Prof. Erik Svensson from Lund University.

The activities of the Sociable Weaver nests as an important resource project were filmed by the BBC in December 2016 specifically to film Pygmy Falcon and Sociable Weaver interactions at nests for a new series called 'Animals Behaving Badly' which was aired during 2017.

PhD student Selena Flores facilitated the filming of a documentary segment by Cape Town's Homebrew Studios featuring the coastal shorebird disturbance research and conservation programme in the Garden Route which was released by the Smithsonian Earth/LoveNature network as part of the 'Great Parks of Africa' season of the series *Wildlife Odyssey*, and aired in North America and online during 2017.

Table 2. Conferences attended by CoE staff and students during 2017

Meeting (month, place), people who attended

Beyond Frugivory Conference (Feb; Seville, Spain) Chevonne Reynolds
12th Annual Conference of the EWT- Birds of Prey Programme (March; Witsand Nature Reserve, Kalahari, SA) Arjun Amar, Robert Thomson, Petra Sumasgutner, Megan Murgatroyd, Anthony Lowney, Christie Craig
18th Student Conference on Conservation Science (March; U. Cambridge, UK) Julia van Velden
WWF-SA Plastic Pollution Workshop (March; Tokai, SA) Peter Ryan
7th International Hornbill Conference (May; Kuching, Malaysia) Kate Carstens
Parliamentary Portfolio Committee on the Environment briefing (June; CT, SA) Peter Ryan
45th Australian Society for the Study of Animal Behaviour Conference (ASSAB) (July; Hobart, Australia) Mandy Ridley
Evolution Meeting (July; Oregon, USA) Anina Coetzee
Tristan Marine Biodiversity Workshop (July; Cambridge, UK) Peter Ryan
2nd Annual Swaziland Biodiversity Research Conference (July; Mbabane, Swaziland) Chevonne Reynolds
Zoological Society of Southern Africa Conference (ZSSA) (July; CSIR ICC, Pretoria, SA) Andrew McKechnie, Susie Cunningham, Margaux Rat, Amanda Bourne, Ditiro Moloto, Matthew Noakes, Michelle Thompson, Darren Pietersen, Mpho Malematja
Southern African Marine Science Symposium (SAMSS) (July, PE, SA) Pierre Pistorius, Alistair McInnes, Davide Gaglio, Jonathan Botha, Laurie Johnson, Noelle Tubbs
13th Southern African Society for Systematic Biology conference (SASSB) (July; CSIR, Pta, SA) Tim Crowe
11th European Ornithologist's Union Conference (EOU) (Aug; Univ. of Turku, Finland) Arjun Amar, Susie Cunningham, Robert Thomson, Dayo Osibuni, Petra Sumasgutner, Diana Bolopo, Megan Murgatroyd, Carina Nebel, Miqayla Stofberg, Christiaan Brink, Edmund Rodseth
102nd Ecological Society of America Conference (ESA) (Aug; Portland, Oregon, USA) Anina Coetzee
Behaviour 2017 (Aug; Estoril, Portugal) Diana Bolopo, Rita Covas
Prince Edward Island MPA Workshop (Aug; Kirstenbosch, SA) Peter Ryan
Southern Ground Hornbill PHVA Workshop (Aug; Mabula SA) Rob Little, Kate Carstens, Kyle Middleton
UCT Postgraduate Science Symposium (Aug; Cape Town, SA) Laurie Johnson
6th International Bio-logging Symposium (Sept; Lake Konstanz; Germany) Pierre Pistorius, Tegan Carpenter Kling
Southern African Wildlife Management Association Conference (SAWMA) (Sept; Goudini Spar, SA) Arjun Amar
Zoological Foundation Week 2017 (Oct; Univ. Uppsala, Sweden) Margaux Rat
Polar Research Facility Meeting (Oct; Observatory, SA) Peter Ryan
South African Renewable Energy Forum (Oct; Pretoria, SA) Vonica Perolds
8th Oppenheimer – De Beers Group Research Conference (Oct; Jhb., SA) Tim Crowe, Andrew McKechnie, Robert Thomson, Anthony Lowney (BSc Hons students Billi Krochuk & Eleanor Weideman)
BirdLife SA & EWT Birds & Renewable Energy Forum (Oct; Jhb, SA) Vonica Perold
African Bat Research Conference (Oct; SANBI CT, SA) Vonica Perold
7th Western Hemisphere Shorebird Group Conference (Nov; Paracas, Peru) Selena Flores
Biology and Economics of Mutualisms Workshop (Nov; Plön, Germany) Claire Spottiswoode
8th Research Symposium of the National Zoological Gardens of SA (Nov; Pretoria, SA) Dayo Osinubi
34th Australian & New Zealand Society for Comparative Physiology and Biochemistry Conference (Dec; Daintree Rainforest Observatory, Cape Tribulation, Australia) Andrew McKechnie
UN Environment Assembly (Dec; Nairobi, Kenya) Peter Ryan
Meeting of the Portuguese Society of Evolutionary Biology (Dec; Faro, Portugal) Martim Melo
Fear: Brain Behaviour Society Conference (Dec; Denmark) Tom Flower

National Geographic photographer Thomas Peschak, accompanied by PhD student Otto Whitehead, visited Marion Island to film mice attacking albatross chicks for a forthcoming series in the magazine on seabirds.

A film company commissioned by the Department of Higher Education and Training (DHET) filmed BSc Hons student Mikayla Stoffberg, supervised by A/Prof. Arjun Amar, during July 2017 while working on her Red-winged Starlings on campus to investigate the influence of urbanization of bird behavior and fitness. This promotional film will be used for learners to illustrate what biologists do for career guidance.

Dr Rob Little facilitated the engagement of previous CoE MSc graduate Dane Paijmans to produce an overview of African Black Oystercatcher research and conservation during March 2017 for the TV show 50/50.

A photograph of a Barn Owl flying within a solar energy facility taken by Prof. Peter Ryan was submitted for the 'African Energy Photo of the Year' and was shortlisted and received special congratulations in the category 'The Photographic Excellence Photo'.

Lorien Pichegru published an article titled 'Cape gannets are teetering on the brink' in the December 2017 issue of *SANParks Times* (page 19), which also featured as the cover image.

4. Networking

Objective

Medium- to long-term objectives are to: (1) establish a wide range of key collaborative associations with scientific peers and peer research groups, both locally and abroad; (2) establish partnerships with conservation organisations and NGOs; and (3) establish strong relationships with business organisations with either direct or indirect interests in the fields of conservation biology and ornithology.

Progress

The CoE continued its involvement with networking interactions between institutions directly or loosely collaborating with the CoE (Table 3). Primary collaboration continued with Prof. Andrew McKechnie at the University of Pretoria, with Dr Pierre Pistorius, Dr Lorien Pichegru and Dr Ben Smit at the Nelson Mandela University, and with A/Prof. Derek Engelbrecht at the University of Limpopo. Secondary collaboration will continue with the molecular laboratory of A/Prof. Rauri Bowie at the University of California, Berkeley and with Prof. Paulette Bloomer at the University of Pretoria (Table 4).

Close collaborative working relationships with scientific peers now exist both nationally and internationally (Tables 3 & 7). Additional emphasis has been placed on working with historically black universities in South Africa and African universities, e.g. University of Limpopo, Fort Hare University, Tshwane University of Technology and the Universities of Zimbabwe and Zambia. Five of the nine Post-doctoral Fellows at the CoE during 2017 came from five different foreign countries.

Prof. Peter Ryan and Dr Pierre Pistorius have a significant ongoing collaborative relationship with the South African National Antarctic Programme (SANAP), and are co-investigators on SANAP projects with Dr Azwianewi Makhado (DEA), Dr Maelle Connan (NMU), and Dr Pete le Roux (UP). Prof. Ryan also has close links to the Royal Society for the Protection of Birds

(RSPB) and the British Antarctic Survey, mainly through research at Tristan da Cunha and Gough Island. Dr Lorien Pichegru continues as a member of a Penguin Task Team organized by the Department of Agriculture, Forestry and Fisheries' Pelagic Working Group to address conservation issues relating to fishery closures around African Penguin colonies in Algoa Bay.

Prof. Claire Spottiswoode maintained her affiliation with co-funding from the University of Cambridge, UK. Her ongoing research work in Zambia has led to a formal MoU between UCT, Cambridge and Copperbelt Universities, with Dr Lackson Chama as a contact person in Zambia. She also has strong links with the Niassa Carnivore Project in Niassa Province, Mozambique, for her ongoing research on honeyguide-human interactions. She is investigating the mechanistic basis of egg coloration in honeyguides in collaboration with a physicist, Dr Silvia Vignolini, from Cambridge. Her research on the maintenance of evolutionary processes in plant-animal interactions is done in collaboration with Dr Colleen Seymour at SANBI, Dr Silvia Vignolini from Cambridge and Dr Rebecca Karanja from Jomo Kenyatta University, Kenya. She continues to collaborate closely with evolutionary geneticist Professor Michael Sorenson at Boston University, USA, and has current collaborations with Dr Mary Caswell Stoddard (Princeton University, USA), Professor Mark Hauber (University of Illinois, USA), Dr Steve Portugal (Royall Holloway, University of London, UK), Dr David Labonte (Imperial College, University of London, UK) and Dr Violaine Llaurens (Muséum national d'Histoire naturelle, Paris, France).

Dr Arjun Amar collaborated regularly with Prof. Steve Redpath from the University of Aberdeen, Scotland, regarding research into human-wildlife conflict and related issues. In collaboration with Dr Christopher Briggs in the United States, Arjun Amar's raptor research team are using MORPHIC, which they developed during 2016, to describe the distribution of morphs of Swainson's Hawks *Buteo swainsoni* across North America. In another collaboration lead by Dr Chiara Morosinotto, University of Turku, including the research group of Prof. Jon Brommer and Dr Patrik Karell in Finland, Dr Rui Lourenço in Portugal and Priv-Doc Anita Gamauf in Austria, Arjun's team are using MORPHIC to describe spatial distribution of Tawny Owls *Strix aluco* across Europe in relation to climate, habitat, anthropogenic impact and diet. Within the scope of the STINT-NRF bi-lateral research project, Arjun's team held a joint workshop before the European Ornithologists' Union conference during August 2017, at the University Turku, Finland. Main collaborators at the workshop from Lund University were Dr Caroline Isaksson, Dr Arne Hegemann, Dr Hannah Watson and Dr Johan Nilsson. Additional collaborations were continued with Dr Anita Gamauf from the National History Museum Vienna, Austria, and Dr Erkki Korpimäki, from Turku University, Finland.

Drs Arjun Amar and Megan Murgatroyd continued to collaborate with Dr Andrew Jenkins, of Avisense Consulting, to GPS tag Verreaux's Eagles at a wind farm development site in the Karoo. In partnership with the AVISENSE field team, six Verreaux's Eagles were equipped with high-resolution GPS tags from the University of Amsterdam Bird Tracking System, yielding very fine-scale tracking data. These data will be used for the Environmental Impact Assessment and for their proposed collision risk model. Dr Murgatroyd applied her collision risk model for Verreaux's Eagles to a wind development at Victoria West (working with Avisense consulting and Mainstream Renewables), which assisted the development planning and the technique will be available nationally in 2018.

Dr Robert Thomson collaborates with Dr Jukka Forsman from the University of Oulu, Finland and Dr Tomas Grimm from Palacky University, Czech Republic, investigating front-line defences in host-brood parasite systems using Common Cuckoo parasitism of cavity nesting Redstarts. He also works with Dr Andrea Santangeli from the University of Helsinki, Finland, to reconcile farmers with vulture conservation in southern Africa. This project also forms a broad collaboration of NGO in southern Africa involved with vulture conservation: VulPro, EWT, BildLife SA, Vultures Namibia and Raptors Botswana.

Dr Susie Cunningham is leading a research team to investigate the comparative anatomy of ibis bill-tip organs, using histological and micro-CT scanning techniques to understand bill-tip organ morphology and the structure of bill-tip organ mechanoreceptors. Collaborators on this project are Dr Isabel Castro (Massey University, New Zealand), A/Prof. Jeremy Corfield (Salisbury University, New Zealand), Prof. Anusuya Chinsamy-Turan (BioSci UCT) and Morea Petersen (HUB histology lab, Groote Schuur campus UCT). She has also been approached by Dr Steve Portugal (Royal Holloway – University of London) and Dr Alex Bond (RSPB) for a collaboration to understand bill-tip structure in petrels and albatrosses.

The collaboration between Prof. Andrew McKechnie and Dr Blair Wolf, University of New Mexico (UNM), has secured a significant grant from the US National Science Foundation for joint research which started in 2015 between the FitzPatrick CoE and UNM focussing on the 'Hot Birds' project. Andrew's new MSc student, Mpho Malematja, has developed a project in collaboration with Prof. W.H. Karasov (University of Wisconsin, USA) that will explore digestive flexibility in White-browed Sparrow-weavers.

During August 2017 the Sociable Weaver Project team led by Research Associate Dr Rita Covas concluded the annual capture of their entire study population at Benfontein Nature Reserve in the Northern Cape. This was the 23rd annual capture of this population, which makes it one of the longest studied animal systems in South Africa. This year, an international team from South Africa, Portugal, France, New Zealand and the USA captured 686 Sociable Weavers and a few by-catch species, including 52 Red-headed Finches, three Ashy Tits, two Acacia Pied Barbets and one Cape Turtle Dove. The record number of individuals caught in one session was 98 birds, which were caught from the largest colony, and the team recruited some extra skilled hands from the Department of Biological Sciences, UCT, to process this large number of individuals.

Dr Martha Nelson-Flower, a former Post-doc at the FitzPatrick Institute CoE, now based at the University of British Columbia, Canada, continued her ongoing collaborations on Southern Pied Babbler research with Dr Mandy Ridley at the University of Western Australia, looking at aspects of dispersal, kin selection and nepotism.

Post-doc Chevonne Reynolds coordinated an international research experience for students (IRES) based in northeast Swaziland. This University of Florida project, funded by a USA National Science Foundation (NSF) grant, is designed to train young ecologists to conduct field-based research. The project also aims to broaden the experience of the students by encouraging collaboration across countries and cultures. In 2017, five students from various US-based institutes and five students from the University of Swaziland undertook extensive field surveys of several taxonomic groups along gradients of increasing agricultural land-use in Swaziland. The students were exposed to a variety of survey and trapping techniques, from point counts to determine bird diversity to baited camera trapping to detect meso-carnivores. To further enhance their numeracy skills, each student analysed the data for a specific taxon and presented the findings to the Swaziland National Trust Commission in a feedback session. Several papers arising from this research have been submitted to peer-reviewed journals, including one on bird diversity co-led by a Swazi student and an American student.

A MoU remained active for 2017 between the Mabula Ground-Hornbill Project (MGHP) and the FitzPatrick CoE. Dr Rob Little is Vice-Chairman of the MGHP Advisory Board and also continued to contribute to the activities of the national Southern Ground-Hornbill Action Group.

Dr Rob Little, Kate Carstens and Kyle Middleton participated in a population and habitat viability assessment (PHVA) workshop for the Southern Ground Hornbill in South Africa at Mabula Private Game Reserve during August 2017. The conservation and research objectives

decided by the participants of the workshop will guide the development of a Biodiversity Management Plan (BMP) for the species, which will be implemented in collaboration with the Department of Environmental Affairs.

Prominent research and conservation partners who visited the CoE during 2017:

Dr Claire Doutrelant from the Centre d'Ecologie Fonctionnelle et Evolutive, Montpellier France, visited the CoE during February 2017 and gave a presentation titled 'Microevolution of female coloured ornaments: space and time matter'.

Three collaborators, Prof. Caroline Isaksson, Dr Johan Nilsson and Dr Hannah Watson from Lund University, Sweden, who are partners in a three-year NRF/STINT project visited the CoE during March and facilitated an Ecophysiology mini-symposium on implementing a biomarker approach in avian urban ecology on 20 March 2017.

Dr Johan Nilsson from Lund University, Sweden, and Managing Editor of the *Journal of Avian Biology* visited the CoE and gave a talk titled 'From metrics to Altmetrics' on 22 March 2017.

Dr Mark Mainwaring from Lancaster University (now University of Montana) visited the CoE and gave a presentation titled 'Environmental conditions influence nest-building in birds' on 12 April, and examined a CoE PhD thesis during his visit.

Dr Nicholas Mundy, Deputy Head of Department (Teaching) and University Reader in Evolutionary Genetics, University of Cambridge visited the CoE and gave a presentation titled 'Seeing red to being red: unexpected links between colour vision and coloration in birds' on 4 October 2017.

Dr Steve Portugal from Royal Holloway, University of London, visited the CoE and gave a presentation titled 'From Secretarybirds to White-headed Vultures: finding your next meal while avoiding a collision' on 12 October 2017.

Steve Dudley, British Ornithologist's Union Senior Administrator, visited the CoE and gave a presentation titled '#TheTweetingBird: Using #socialmedia to support your author community and drive their research articles' @Altmetric Attention Scores' on 13 October 2017.

Prof. Stephen Redpath from Aberdeen University UK visited the CoE, and attended a research retreat during 20-22 September 2017 with the research groups of A/Prof. Arjun Amar and Dr Robert Thomson.

Table 3. Collaborators involved with the CoE

Title	Surname	Country	Institution	Gender	Race	% time in CoE
South Africa						
Prof.	Res Altwegg	SA	UCT	M	W	5
Ms	Andrea Angel	SA	BirdLife SA	F	W	20
Dr	Mark Brown	SA	NVT/UKZN	M	W	10
Dr	Maelle Connan	SA	NMU	F	W	10
Dr	Dave Glassom	SA	UKZN	M	W	10
Prof.	Raymond Jansen	SA	Tshwane U Tech	M	W	1
Dr	Ian Little	SA	EWT	M	W	5
Dr	Amanda Lombard	SA	NMU	F	W	5
Dr	Guy Midgley	SA	U Stellenbosch	M	W	2
Dr	Chevonne Reynolds	SA	Wits	F	W	10
Dr	Colleen Seymour	SA	SANBI	F	B	5
Dr	Hanneline Smit-Robinson	SA	BirdLife SA	F	W	2
Dr	Andrew Tucker	SA	CS Vet Consultancy	M	W	5
Dr	Ross Wanless	SA	BirdLife SA	M	W	20
Ms	Kerri Wolter	SA	VulPro	F	W	20
Africa						
Dr	Colleen Begg	Mozambique	Niassa Carnivores	F	W	2
Dr	Jackson Chama	Zambia	Copperbelt U	M	B	2
Dr	Christine Dranzoa	Uganda	Makerere U	F	B	1
Dr	Rebecca Karanja	Kenya	Jomo Kenyatta U	F	W	2
Prof.	Cwbisile Magagula	Swaziland	U Swaziland	F	B	5
Mr	Innocent Magunje	Zimbabwe	BirdLife Zimbabwe	M	B	10
Mr	Fadzai Matsvimbo	Zimbabwe	BirdLife Zimbabwe	F	B	30
Prof.	Ara Monadjem	Swaziland	U Swaziland	M	W	5
Asia, Australia & New Zealand						
Prof.	Jeremy Corfield	New Zealand	Salisbury U	F	W	2
Prof.	Isabel Castro	New Zealand	Massey U	F	W	2
Dr	Janet Gardner	Australia	Australian National U	F	W	5
Dr	Nicola Mitchell	Australia	U Western Australia	F	W	10
Prof.	Bruce Robertson	New Zealand	Otago	M	W	1
Prof.	Hideshige Takada	Japan	Tokyo Agric U	M	W	2
Dr	Alan Tennyson	New Zealand	Te Papa	M	W	1
Europe & UK						
Dr	Stefano Aliani	Italy	CNR-ISMAR	M	W	5
Dr	Per Alstrom	Sweden	Uppsala U	M	W	5
Dr	Beatriz Arroyo	Spain	IREC, Ciudad Real	F	W	10
Prof	Andrew Balmford	UK	U Cambridge	M	W	1
Dr	Alex Bond	UK	RSPB	M	W	5
Dr	Marta Cuellar Cerda	Spain	CreSa U Barcelona	F	W	5
Dr	Richard Cuthbert	UK	Wildlands Trust	M	W	2
Dr	Dan Chamberlain	Italy	U Turin	M	W	5
Dr	Claire Doutrelant	France	CNRS Montpellier	F	W	5
Prof.	Nicholas Davies	UK	Cambridge	M	W	1
Dr	Gareth Dyke	Ireland	UC Dublin	M	W	1
Prof.	Jon Fjeldsa	Denmark	U Copenhagen	M	W	1
Dr	Jukka Forsman	Finland	U Oulu	M	W	2
Dr	Jérôme Fuchs	France	Natural History Mus.	M	W	5
Dr	Anita Gamauf	Austria	Nat Hist Mus. Vienna	F	W	10
Dr	David Grémillet	France	CNRS Montpellier	M	W	20
Dr	Michael Griesser	Switzerland	U Zurich	M	W	3
Dr	Tomas Grimm	Czech Rep.	Palacky U	M	W	5
Dr	Jacob Gonzalez-Solis	Spain	U Barcelona	M	W	5
Dr	Steffen Hahn	Switzerland	Swiss Ornith. Inst.	M	W	5
Dr	Bengt Hansson	Sweden	Lund U	M	W	10
Prof.	Ben Hatchwell	UK	U Sheffield	M	W	3
Dr	Arne Hegemann	Sweden	Lund U	M	W	5
Dr	Nicholas Horrocks	UK	U Cambridge	M	W	10
Dr	Hugo Mathe Hubert	Switzerland	EAWAG Zurich	M	W	5
Dr	Caroline Isaksson	Sweden	Lund U	F	W	5

Dr	Gabriel Jamie	UK	U Cambridge	F	B	10
Dr	Felix Liechti	Switzerland	Swiss Ornith.I Inst	M	W	5
Dr	Anoushka Kinahan	Ireland	Frankfurt Zoo Soc	F	W	1
Dr	Erkki Korpimäki	Finland	Turku U	M	W	10
Prof.	Luc Lens	Belgium	U Ghent	M	W	1
Dr	Violaine Llaurens	France	Mus. d'Histoire Nat.	F	W	5
Dr	Rowan Martin	UK	World Parrot Trust	M	W	10
Dr	Chiara Morosinotto	Finland	U Turku	F	W	10
Dr	Francois Mougeot	Spain	IREC, Ciudad Real	M	W	20
Dr	Johan Nilsson	Sweden	Lund U.	M	W	5
Dr	Veli-Matti Pakanen	Finland	U Oulu	M	W	10
Dr	Mathieu Paquet	UK	U Edinburg	M	W	5
Dr	Richard Phillips	UK	Br Antarctic Survey	M	W	2
Dr	Steve Portugal	UK	Royal Holloway	M	W	2
Prof.	Petra Quillfeldt	Germany	U Giessen	F	W	1
Prof.	Andy Radford	UK	U Bristol	M	W	5
Dr	Nichola Raihani	UK	IOZ, London	F	W	5
Prof.	Steve Redpath	UK	Aberdeen U	M	W	10
Dr	Angela Ribiero	Denmark	U Copenhagen	F	W	10
Dr	Yan Ropert-Coudert	France	CNRS Chize	M	W	5
Dr	Andrea Santangeli	Finland	U Helsinki	M	W	2
Dr	Marjorie Sorenson	UK	U Cambridge	F	W	1
Dr	Martin Stevens	UK	U Exeter	M	W	2
Prof.	Cedric Suer	France	U Strasberg	M	W	5
Dr	Jakub Szymkowiak	Poland	Adam Mickiewicz U	M	W	10
Dr	Alex Thornton	UK	U Exeter	M	F	5
Dr	Rose Thorogood	Finland	U Helsinki	F	W	5
Dr	Rene van Dijk	UK	U Sheffield	F	W	5
Dr	Silvia Vignolini	UK	U Cambridge	F	W	5
Dr	Henri Weimerskirch	France	CNRS Chize	M	W	5
Dr	Stephen Willis	UK	Durham	M	W	2
Dr	Hannah Watson	Sweden	Lund U.	F	W	5
Prof.	Rory Wilson	UK	Swansea U	M	W	2
USA & Canada						
Prof.	Mark Brigham	Canada	U Regina	M	W	5
Dr	Theresa Burg	Canada	U Lethbridge	F	W	1
Dr	Tom Flower	Canada	Simon Fraser U	M	W	5
Dr	Alex Gerson	USA	U Massachussetts	M	W	5
Dr	Robert Hackett	USA	Chicago Mus	F	W	1
Prof.	Bill Karasov	USA	U Wisconsin	M	W	5
Prof.	Martinez del Rio	USA	U Wyoming	M	W	1
Dr	Mark Mainwaring	USA	U Montana	M	W	2
Dr	Martha Nelso-Flower	Canada	U British Colombia	F	W	5
Prof.	Michael Sorenson	USA	Boston U	M	W	2
Dr	Mary Stoddard	USA	Princeton U	F	W	10
Prof.	Gary Voelker	USA	Texas A&M U	M	W	1
Dr	Blair Wolf	USA	U New Mexico	M	W	5
Dr	Brian Wood	USA	U California	M	W	10

5. Service rendering

Objective

A medium- to long-term objective is to establish formal contact with a range of conservation agencies and other relevant government bodies, such as the Department of Environmental Affairs and the Department of Agriculture, Forestry & Fisheries, to ensure the expertise of the CoE is used to address practical research and information needs. CoE members will continue to render their services to the broader scientific community and the general public.

Progress

Links continue to be serviced with a diversity of conservation agencies, NGOs, government departments, and industry partners. These include the Department of Environmental Affairs (DEA), Department of Agriculture, Forestry & Fisheries (DAFF), the South African National Biodiversity Institute (SANBI), SANParks, IUCN, Conservation International, Fauna & Flora International, the Royal Society for the Protection of Birds (RSPB), BirdLife South Africa & Zimbabwe, the World Parrot Trust, the Endangered Wildlife Trust, the Namibian Ministry of the Environment, the Wildlife Conservation Society, the Nature Conservation Corporation and the South African Deep Sea Trawling Industry Association.

CoE members served on the editorial boards of 27 scientific journals, and as members of 76 relevant membership and advisory fora. They also served the broader scientific community by participating on scientific steering committees and working groups, and by reviewing project proposals for science funding agencies and 137 papers for 60 peer-reviewed international and local journals during 2017 (see below).

Members of the CoE continued to offer technical advice on biodiversity conservation measures to a wide range of governmental departments, conservation implementing agencies and other industry players (e.g. Plastics SA and the South African Deep Sea Trawling Industry Association). This advice is offered directly to policy makers in para-statals (SANBI, SANParks, CapeNature, Ezemvelo KwaZulu-Natal Wildlife) and government departments (e.g. drafting NEMBA regulations and permitting guidelines for the DEA, contributing to fishery management working groups for the DAFF, reviewing best-practice guidelines for managing the wind and solar energy industry for DEA, etc.). Service rendering is not confined to South Africa, with inputs being given to neighbouring countries, including the UK (for Tristan da Cunha and Gough Island), international agreements (e.g. CCAMLR, CMS, ACAP and RFMOs, see Appendix 1), as well as collaboration with the Namibian Ministry of the Environment, the Botswana Department of Wildlife and National Parks, and the Marine Stewardship Council for regional fisheries. The CoE also works with partner NGOs such as the BirdLife network (including BirdLife Botswana, South Africa, Zimbabwe), Conservation International, the Endangered Wildlife Trust (EWT), Fauna & Flora International, the IUCN, Nature Conservation Corporation, the Royal Society for the Protection of Birds, the World Conservation Society (WCS) and the World Parrot Trust to effect changes in the biodiversity conservation arena and related industries.

Prof. Peter Ryan was one of only two project leaders to participate in all three legs of the Antarctic Circumnavigation Expedition (ACE). The expedition sailed from Cape Town in December 2016 on the Russian icebreaker *Akademik Tryoshnikov*, and called in at Hobart and Punta Arenas before returning to Cape Town in March 2017. It was organized by the Swiss Polar Research Institute, and supported 22 research projects. Ryan was involved in two projects: one on microplastic pollution of the Southern Ocean, and one estimating bird populations at seldom visited breeding sites – aerial surveys were conducted at Iles aux Cochons in the Crozet Archipelago as well as the Balleny Islands, Mount Siple, Peter 1 Øy and

Bouvetøya. In addition to generating data on the health of Southern Ocean ecosystems, the expedition collected samples to better understand historical climate changes in the region, and studied how the Southern Ocean is reacting to rapid climate change in the region. This is crucial because of the pivotal role played by the Southern Ocean in regulating the global climate. Ryan also facilitated the donation of the expedition's three helicopters to the South African Department of Environmental Affairs for use in attempts to eradicate House Mice from oceanic islands. This donation stimulated the SA government to prepare for an eradication attempt on Marion Island in 2020, following the eradication planned for Gough Island by the UK in 2019.

Prof. Peter Ryan is also on the editorial Board of *Bird Conservation International* and is an editorial assistant for *Antarctic Science*. He is the South African representative on ACAP's Taxonomy Working Group, a member of the IMAF Working Group of CCAMLR, the South Atlantic Island Plant Specialist Group, the UN's GESAMP Working Group 40, and is a core member of the newly-constituted SCOR Working Group on Floating Marine Debris.

Prof. Andrew McKechnie served on the ethics and scientific committees of the National Zoological Gardens, and chaired the ethics committee of BirdLife South Africa. Peter Ryan and Andrew McKechnie are also scientific advisors for the BirdLife magazine *African Birdlife*.

Dr Pierre Pistorius is an external examiner for an undergraduate course at the Walter Sisulu University and reviewed funding proposals for the Chilean Antarctic Institute and the French Polar Institute.

At the Indian Oceans Tuna Commission (IOTC) working party on ecosystems bycatch held during September 2016 in the Seychelles, recommendations emanating from the research work of PhD student Dom Rollinson were put forward to change IOTC regulations with regards to line-weighting of longline branchlines to reduce seabird bycatch. Dom's study was conducted in 2015 in collaboration with scientists from the National Institute of Fishery Science, Republic of Korea, with whom he drafted a paper that will to be published soon. Their recommendations were assessed by the IOTC Scientific Committee during December 2016, before being introduced into IOTC legislation during 2017.

Dr Lorien Pichegru is Chairperson of the Algoa Bay Hope Spot steering committee, driving the Hope Spot initiative for Mission Blue and the Sustainable Seas Trust in Algoa Bay. She facilitates monthly public talks about local and international environmental issues (estuaries conservation, plastic pollution, renewable energy, etc.), fund raises for marine education initiatives, such as Marine Week in Port Elizabeth, and co-ordinates environmental projects, such as regular beach clean-ups, setting waste recycling plans for the squid fishing industry and the Nelson Mandela University. She is also a Trustee of the South African Marine Rehabilitation and Education Centre (SAMREC), a committee member of the Wildlife and Environment Society of South Africa (WESSA), a member of the Advisory Panel of the African Marine Waste Action Network.

Ongoing research by Lorien and her team on the foraging behaviour of African Penguins in Algoa Bay since 2008 and during the experimental purse-seine fishing exclusion has shown the impact of the competition with industrial fisheries on seabirds for the first time and the benefit of closing small areas to fishing. The results are used by the Island Closure Task Team of the Small Pelagic Scientific Working Group, from the Department of Agriculture, Forestry and Fisheries, to assess the use of fishing exclusion around penguin colonies to increase penguin numbers. South African National Parks henceforth extended the Greater Addo Marine Protected Area in Algoa Bay to include the foraging habitat of African Penguins around St Croix Island, the world largest African Penguin colony.

Following his research on a novel and inexpensive method to quantify relative fish abundance using recreational fish-finders for his PhD, Alistair McInnes designed and analysed small pelagic fish surveys in Plettenberg Bay to assess the suitability of pelagic habitat for an artificial African Penguin breeding colony. The study was commissioned by BirdLife South Africa under the supervision of Christina Hagen and in collaboration with Dr Gwenith Penry. Six surveys were undertaken between February and August 2016 within the African Penguin foraging range centered at the Keurbooms Estuary, which is the proposed new penguin colony site. Results to date are largely inconclusive largely due to a poor year for fish stocks in the Eastern Cape probably related to anomalous oceanographic conditions associated with the prevailing El Niño effect. Surveys continued during 2017 to establish if this site is suitable for breeding African Penguins.

As part of her MSc, Jenny Roberts tracked African Penguins from Dassen Island on the west coast and Bird Island on the south coast during the pre-moult and post-moult periods. She explored the potential for competition between penguins and fisheries during the non-breeding period. She consistently showed contrasting results between the coasts, with a large dispersal of penguins from the west coast compared to the south during both pre- and post-moult periods, suggesting that a combination of the low relative fish abundance and higher commercial fishing pressure on the west coast may force pre-moulting birds to seek food sources farther from the colony, putting them at higher risk of not surviving the annual moult. Recently she also noticed a high proportion of PTTs that stopped emitting on the west coast, suggesting that the penguin died, were localised in a relative small area off St Helena Bay. She is writing a short note about important areas for penguins during the non-breeding season that require specific protection.

The CoE also assisted a team of SANParks rangers with manufacturing artificial nests for African Penguins to shelter them from extreme weather events (storms or heat waves) and from predation on land by gulls targeting their eggs and small chicks. Artificial nests made from fiberglass have been placed on different colonies in the past but were proved to be not suited as they retained heat. As a consequence the hatching success in these nests was lower than those of surface nests. SANParks is now exploring different material, such as Styrofoam in cement, which so far has been successful in reducing temperatures inside the nest.

Dr Martim Melo is the coordinator of the Biodiversity TwinLab between CIBIO (Research Center in Biodiversity and Genetic Resources from the University of Porto, Portugal) and the Zoological Museum and Herbarium of Lubango (Angola). This initiative will establish a network of TwinLabs in Southern Africa (South Africa, Namibia, Zimbabwe and Mozambique). The main goal is capacity building in biodiversity conservation in the Portuguese speaking countries particularly Angolan TwinLab, since that country has a stark contrast between the rich biodiversity & the huge threats it faces, and the almost absence of a researchers, technicians, and managers. Most of the capacity building is based on research projects with integrated MSc and PhD students. The intention is that within 10-15 years, English will no longer be an obstacle and the Portuguese-speaking countries will be more integrated at the international level. Dr Melo also contributes to capacity building of members of a conservation NGO in São Tomé and Príncipe that supports the implementation of the BirdLife International and BirdLife Africa action plans for the threatened species in those countries.

In January 2017, PhD student Selena Flores partook in a workshop to train the SANParks CoastCare team on how to be aware while cleaning up beaches in shorebird breeding areas, including spotting incubating/brooding adult shorebirds, nests, and behavioural indicators that chicks or nests are nearby. From results of her PhD research on White-fronted Plover responses to disturbance, in conjunction with local research supervisor Dr Mark Brown and other coastal bird research with the associated NGO the Nature's Valley Trust, beaches in the greater Plettenberg Bay region have been re-zoned with regards to dog access. Initial

recommendation maps were requested by the Bitou Municipality in May 2017, with implementation of new regulations in November and December 2017. This includes new and additional signage, enforcement logistics and a social media campaign.

Dr Rita Covas advised staff from the Endangered Wildlife Trust (South Africa) on how to deal with Sociable Weaver colonies built on telephone and electricity poles, which become a hazard for those structures.

Post-doc Dayo Osinubi has supported the MSc Conservation Biology programme at the AP Leventis Ornithological Research Institute (APLORI) in Nigeria by teaching courses in behavioural ecology, field techniques, and writing and presentation skills, as well as supervising a MSc student's research project. His services on the African-Eurasian Migratory Landbirds Working Group led to the adoption of the Abuja Declaration on Sustainable Land Use for People and Biodiversity in West Africa.

Dr Rob Little assisted SANBI and the Centre for Invasion Biology (CIB) during early 2017 with avian inputs to the National Status Report on Biological Invasions as required by regulations under the National Environmental Management: Biodiversity Act (NEM:BA, Act 10 of 2004). Inputs included; (i) an estimate of the stage of invasion according to the scheme proposed by Blackburn et al. 2011, (ii) the extent of occurrence of each species, for example the number of quarter-degree squares occupied, and (iii) an estimate of each species impact status according to defined categories (minimal, minor, moderate, major, massive).

During January 2017, Dr Rob Little sent a letter of comment on behalf of the Fitz CoE with respect to a permit application to use a vehicle for guided tours within the coastal area of Arniston in the Western Cape, and facilitated that MSc graduate Dane Paijmans also play a consulting role in this process.

Three CoE students took part in the annual Champions of the Flyway bird race in Israel during April 2017. The race pits teams from all over the world against one another in a gruelling 24-hour race to identify as many bird species as possible. One of the aims of the event is to raise funds and awareness around the illegal killing of birds along their migratory flyways – southern Israel is a bottleneck and hotspot of migrant bird diversity during spring. Jessleena Suri (ex CB MSc & Research Assistant) and Andrew de Blocq (MSc student) competed with the Birding Ecotours Youth Africa Birders. The team raised close to €9 000 up to and including race day, which was €2 000 more than any other team, and took home the title of Guardians of the Flyway for their efforts. They were also awarded the Knights of the Flyway title for their awareness campaign, which included various social media and even canvassing at street lights in creative outfits. Dominic Rollinson (PhD student) and Callan Cohen (CoE Research Associate) with the Birding Africa Black Harriers team identified 163 species, placing them a commendable joint sixth out of the 19 teams. “The Champions of the Flyway is so much more than a bird race”, de Blocq said. “The event brings people together from all over the world to help contribute to solving a problem that transcends political, religious and geographical boundaries. Once again, a joint Palestinian–Israeli team competed in the race, showing that it's possible for conservation topics to transcend even the bitterest feuds. At the end of the day the birds were certainly the biggest winners, which is what is important.”

Graduated MSc CB student Alex Atkins et al. published a paper titled ‘Experimentally manipulating the landscape of fear to manage problem animals’ in the *Journal of Wildlife Management* in early 2017. The paper and an associated article published in *African Birdlife* (Fitz News May/June 2017) were sent to all stakeholders of the use of falconry to control problem Egyptian Geese at the golf courses, National Society for the Protection of Cruelty to Animals (NSPCA), Cape Nature and the relevant falconry associations.

Dr Rob Little also continued to participate on the Ford Wildlife Foundation (FWF) advisory panel to assist the FWF with the placement of loan vehicles in support of conservation projects.

Positions on Editorial Boards, Councils, Advisory/Steering Committees during 2017

Editorial Boards

- *Acta Ethologica* (Associate Editor; Covas)
- *African Journal of Ecology* (International Review Panel; Barnard)
- *African Journal of Marine Science* (Editorial Advisory Board; Pistorius)
- *African Journal of Wildlife Research* (Associate Editor; Cumming, Miller)
- *Animal Conservation* (Associate Editor; Barnard)
- *Antarctic Science* (Associate Editor; Ryan)
- *Behavioral Ecology* (Editorial Board; Ridley)
- *Biology Letters* (Associate Editor; Cunningham, Spottiswoode)
- *Bird Conservation International* (Associate Editor; Ryan)
- *BMC Climate Change Responses* (Associate Editor; Barnard, McKechnie)
- *BMC Evolutionary Biology* (Editorial Board; Bowie)
- *Diversity and Distributions* (Associate Editor; Cumming)
- *Ecology & Society* (Associate Editor; Cumming)
- *Emu – Austral Ornithology* (Associate Editor; McKechnie)
- *Frontiers in Ecology and the Environment* (Editorial Board; Ridley)
- *Frontiers in Ecology and Evolution* (Reviews Editor; Covas)
- *Frontiers in Marine Science* (Review editor; Pichegru)
- *Ibis* (Editor; Bowie, Associate Editor; Amar, Pichegru, Sumasgutner, Wanless)
- *International Scholarly Research Notices ISRN Ecology* (Editor; Ridley)
- *International Scholarly Research Notices ISRN Zoology* (Associate Editor; Pistorius)
- *Journal of Comparative Physiology B* (Editorial Board; McKechnie)
- *Landscape Ecology* (Editorial Board; Cumming)
- *National Geographic News Watch* (Contributing Editor; Boyes)
- *Marine and Freshwater Behaviour and Physiology* (Associate Editor; Pistorius)
- *Ornis Fennica* (Associate Editor; Thomson)
- *Ostrich – Journal of African Ornithology* (Editor-in-Chief; Lee; Associate Editors; Little, McKechnie, Osinubi, Ridley; Book Review Editor; Mvungi)
- *Peer J* (Editorial Board; Amanda Ridley)

Membership & Advisory services

- ACAP Taxonomy Working Group (Ryan)
- African-Eurasian Migratory Landbirds Working Group (Osinubi)
- *Africa Geographic* (Director; Boyes)
- African Biosphere Reserves Project Advisory Committee (Member Dayo Osinubi)
- *African Birdlife* (Scientific Advisors; McKechnie, Ryan)
- African Penguin Population Reinforcement Working Group (Pichegru, Pistorius)
- African Penguin Habitat Working Group (Pichegru)
- African Seabird Group (Cook, Pistorius, Pichegru, Steinfurth, Ryan, Wanless)
- African Marine Waste Action Network (Advisory panel member, Pichegru, Ryan)
- American Ornithologists' Union (Bowie, Cunningham, McKechnie, Melo, Sumasgutner)
- Animal Demography Unit, UCT (Deputy Director: Thomson)
- Association for the Study of Animal Behaviour (Flower)

- Association for Tropical Biology & Conservation (Lee)
- BirdLife Portugal (Melo)
- BirdLife South Africa Council (President; Barnard)
- BirdLife South Africa Conservation Advisory Committee (Member; Ryan, Thomson)
- BirdLife South Africa Ethics Committee (McKechnie)
- British Ecological Society (Boyes, Johnson, Flower, Moloto, Nelson-Flower, Ridley, Tubbs, Sumasgutner)
- British Ornithologists' Union (Council; Amar, Bowie; Member; Cunningham, Lee, Spottiswoode, Sumasgutner)
- Cambridge Philosophical Society (Ridley)
- Cooper Ornithological Society (Amar, Bowie, McKechnie)
- Eastern Cape Forest Management and Research Committee (Boyes)
- Ecological Society of America (Cumming, Tubbs)
- Endangered Wildlife Trust Birds of Prey Programme Advisory Committee (Amar)
- Endangered Wildlife Trust Threatened Grassland Species Programme Advisory Group (Little, McKechnie)
- European Ornithologists Union (Council Member: Sumasgutner; Members: Amar, Bolopo, Brink, Murgatroyd, Thomson)
- European Society of Evolutionary Biology (Melo)
- Expert Group on Birds and Marine Mammals of the Scientific Committee for Antarctic Research (Cook, Ryan)
- Faculty Member, 'Faculty of 1000'. See <http://f1000.com/> (Cumming)
- Fellow of Magdalene College, Cambridge (Spottiswoode)
- Ford Wildlife Foundation Advisory Board (Little)
- Forest & Bird Society (Cunningham)
- Galapagos Conservation Trust (Ambassador; Steinfurth)
- German Ornithologists' Society (Member; Sumasgutner)
- International Association of Vegetation Science (Coetzee)
- International Bio-logging Society (Cook, Pistorius)
- International Ornithology Council Taxonomy Advisory Committee (Bowie, Ryan)
- International Parrot Research Group (Africa Coordinators; Boyes, Martin)
- International Society for Behavioural Ecology ISBE (Flower, Nelson-Flower, Ridley, Spottiswoode, Thomson)
- IUCN Red List of Threatened Species (Cook)
- IUCN SSC Galliform Specialist Group (Member Rob Little)
- Lion Management Forum of South Africa (Trustee; Miller)
- Mabula Ground-Hornbill Project Advisory Board (Vice Chairman; Little)
- Migrant Landbird Study Group (Osinubi)
- National Geographic Society (Boyes)
- National Zoological Gardens Research Ethics & Scientific Committee (McKechnie)
- Pan-African Ornithological Congress Committee (Osinubi)
- Raptor Research Foundation (Amar, Sumasgutner)
- Red Data Book Revision Steering Group (Chair: Barnard, Member; Amar, Wanless)
- Resilience Alliance (Cumming)
- RNSC-SNAAS (Reseau National des Systemes Complexes-Social Network Analysis in Animal Societies) (Rat)
- SAFRING Steering Committee (Barnard)
- SCOR working group on monitoring plastics at sea (Core member; Ryan)
- Seabird Scientific Working Group – Department of Environmental Affairs (Pichegru)
- Society for Conservation Biology (Barnard, Cumming, Melo, Pichegru, Tubbs)
- Society for Integrative and Comparative Biology (McKechnie)

- Society for Systematic Biology (Bowie)
- Society for the Study of Evolution (Bowie, Coetzee, Melo)
- South African Association of Botanists (Scientific Committee; Coetzee)
- South African Biosystematics Initiative Steering Committee (Bloomer)
- South African Bird Atlas Project 2 Steering Committee (Chair; Barnard)
- South African Marine Rehabilitation and Education Centre (SAMREC) (Trustee; Pichegru)
- South African Young Academy of Science (Founder member; McKechnie)
- Southern African Bird List Committee (Bowie, Ryan)
- Southern African Society for Systematic Biology (President; Bloomer)
- Southern African Wildlife Management Association (Carstens, Little, Maciejewski, Miller)
- Southern Ground-hornbill Action Group (Carstens, Little)
- Sustainable Seas Trust (Chairperson Algoa Bay Hope Spot committee; Pichegru)
- Tristan's Biodiversity Advisory Group (Ryan, Wanless)
- UN GESAMP Working Group 40 – phase 3: 2017-2018 Harmonising methods for monitoring and assessment of marine plastics and microplastics (Ryan)
- Wild Bird Trust (Trustees; Boyes, Little)
- Wildlife and Environment Society of South Africa (Board member; Pichegru)
- WI-IUCN SSC Cormorant Specialist Group (Cook)
- World Parrot Trust (Africa Director; Boyes)
- World Seabird Union (Africa representatives; Pichegru, Wanless; Member; Cook)
- Zoological Society of Southern Africa (Members; Cunningham, Little, McKechnie, Pistorius)

Manuscripts reviewed for scientific journals during 2017

African Journal of Marine Science (1 Ryan)

African Journal of Wildlife Research (1 Osinubi)

Animal Behaviour (2 Flower, 1 Rat, 2 Ridley, 1 Sumasgutner)

Animal Cognition (1 Flower, 2 Ridley)

Antarctic Science (1 Ryan)

Anthropocene (1 Rat)

Applied Vegetation Science (1 Coetzee)

Ardea (1 Amar)

Auk (2 Ridley, 1 Thomson)

Avian Research (1 Little)

Behavioural Ecology (2 Bolopo, 1 Covas, 1 Flower, 8 Ridley, 1 Spottiswoode, 1 Thomson)

Behavioural Ecology and Sociobiology (1 Thomson)

Behavioural Processes (2 Ridley)

Birdlife Conservation International (1 Little, 1 Osinubi)

Bird Study (1 Amar)

Biological Conservation (2 Flower, 2 Joseph, 1 Reynolds, 2 Ridley)

Biological Journal of the Linnean Society (1 Melo, 1 Sumasgutner)

Biology Letters (1 Flower, 1 McKechnie)

Chemoecology (1 Flower)

Condor (2 Murgatroyd)

Ecology (1 Joseph, 1 McKechnie)

Ecology & Evolution (1 Pistorius)

Ecosystems (1 Joseph)

Environmental Pollution (2 Ryan)

Environmental Research Letters (1 Ryan)

Evolution (1 Covas, 1 Cunningham, 1 Rat, 1 Spottiswoode)

Freshwater Biology (1 Reynolds)

Frontiers in Ecology and Evolution (1 Ridley)

Global Change Biology (1 Joseph)
Global Ecology & Biogeography (1 McKechnie)
Ibis (1 Bolopo, 1 Flower, 2 Melo, 3 Murgatroyd, 8 Sumasgutner)
Journal of Avian Biology (1 Cunningham, 1 Sumasgutner, 2 Thomson)
Journal of Biogeography (1 Joseph)
Journal of Ecology (1 Joseph)
Journal of Field Ornithology (1 Cunningham)
Journal of Marine Systems (1 Pichegru, 1 Pistorius)
Journal of Ornithology (2 Sumasgutner)
Journal of the Royal Society Interface (1 Ryan)
Journal of Vegetation Science (2 Joseph)
Journal of Zoology, London (3 McKechnie)
Land Degradation and Development (1 Joseph)
Koedoe (1 Cunningham)
Marine Biology (1 Pistorius)
Marine Ecology Progress Series (1 Cook, 1 Pichegru, 1 Pistorius)
Marine Environmental Research (1 Ryan)
Marine Pollution Bulletin (1 Ryan)
Molecular Phylogenetics & Evolution (1 Miller)
Nature Communications (3 Ridley)
Nature Ecology & Evolution (2 Ridley)
Ostrich (1 Crowe, 3 Little, 1 Osinubi, 1 Reynolds)
Peerage of Science (1 Bolopo)
Philosophical Transactions of the Royal Society B (1 Ridley)
PLoS ONE (1 Cunningham, 1 Miller, 2 Sumasgutner)
Polar Biology (1 Pistorius)
Proceedings of the National Academy of Sciences (1 Covas)
Proceedings of the Royal Society of London B (1 Covas, 1 Flower, 1 McKechnie, 2 Ridley)
Royal Society Open Science (1 Flower, 1 McKechnie, 2 Ridley)
Science (1 Spottiswoode)
Scientific Reports (1 Murgatroyd, 1 Pichegru)
Wilson Journal of Ornithology (1 Thomson)
Zootaxa (2 Melo)

HUMAN RESOURCES

Prof. Peter Ryan was inducted into UCT's prestigious College of Fellows in October 2017. All CoE core members are NRF rated. Dr Arjun Amar was promoted to Associate Professor in September 2017, with effect from January 2018.

The following people worked within or were students at the CoE during 2017:

Table 4. Core FitzPatrick Institute CoE team members for 2017

Title	Name	Citizen	Institution	Gender	Race	% time in CoE
Dr	Jaqueline Bishop	SA	UCT	F	W	10
Prof.	Paulette Bloomer	SA	U Pretoria	F	W	10
Dr	Susan Cunningham	NZ	UCT	F	W	100
Dr	Lorien Pichegru	France	NMU	F	W	50
Prof.	Claire Spottiswoode	SA	UCT/U Cambridge	F	W	66
A/Prof.	Arjun Amar	UK	UCT	M	W	100
A/Prof.	Rauri Bowie	SA	U Cal. Berkeley	M	W	10
A/Prof.	Derek Engelbrecht	SA	U Limpopo	M	W	10
Prof.	Andrew McKechnie	SA	U Pretoria	M	W	30
Dr	Pierre Pistorius	SA	NMU	M	W	40
Prof.	Peter Ryan	SA	UCT	M	W	100
Dr	Ben Smit	SA	NMU	M	W	20
Dr	Robert Thomson	SA	UCT	M	W	100

Table 5. Administrative and support staff at the CoE for 2017

Title	Name	Position	Gender	Race
Ms	Anthea Links	SAP Administrator	F	B
Ms*	Phelisa Hans	Library Assistant	F	B
Ms*	Denise Scheepers	CoE Senior Secretary	F	B
Ms	Susan Mvungi	Niven Librarian	F	B
Ms	Hilary Buchanan	Admin Assistant	F	W
Mr	Gonzalo Aguilar	Principal Technical Officer	M	W
Dr*	Rob Little	CoE Manager	M	W
Mr*	Chris Tobler <i>part time</i>	Principal Technical Officer	M	W

* CoE funded.

Table 6. FitzPatrick Institute CoE Post-doctoral Fellows for 2017

Title	Name	Citizen	Gender	Race	NRF CoE support	
					Bursary	Running
Dr	Diana Bolopo	Spain	F	B	Yes	Yes
Dr	Anina Coetzee	SA	F	W	Yes	Yes
Dr	Megan Murgatroyd	UK	F	W	Yes	Yes
Dr	Chevonne Reynolds	SA	F	W	Yes	Yes
Dr	Margaux Rat	France	F	W	Yes	Yes
Dr	Susan Miller	SA	F	W	No	No
Dr	Petra Sumasgutner	Austria	F	W	No	Yes
Dr	Dayo Osinubi	Nigeria	M	B	Yes	Yes
Dr	Alistair McInnes	SA	M	W	No	Yes

Table 7. Honorary Professors and Research Associates for 2017

Title	Name	Citizen	Institution	Gender	Race	% time in CoE
Prof.	Phoebe Barnard *	UK	U Washington	F	W	10
Dr	Rita Covas *	Portugal	CEFE-CNRS	F	W	60
Dr	Claire Doutrelant	France	CEFE-CNRS	F	W	30
Dr	Genevieve Jones	SA	BirdLife SA	F	W	10
Dr	Kristi Maciejewski *	SA	OTS	F	W	20
Dr	Colleen Seymour	SA	SANBI	F	W	10
Prof.	Sue Milton	SA	Renu Karoo	F	W	10
Dr	Jessica Shaw	UK	Scottish Natural Heritage	F	W	10
Dr	Antje Steinfurth	Germany	RSPB U Cambridge	F	W	50
Dr	Jane Turpie	SA	Anchor Consulting	F	W	10
A/Prof.	Mandy Ridley *	New Zealand	U Western Australia	F	W	50
Dr	Lizanne Roxburgh	SA	EWT	F	W	10
Dr	Azwianewi Makhado	SA	Marine & Coastal Mgmt	B	M	10
Dr	Steve Boyes	SA	Wild Bird Trust	M	W	30
Dr	Callan Cohen	SA	Birding Africa	M	W	20
Dr	Tim Cook	France	Diderot Education, France	M	W	10
Prof.	Graeme Cumming *	SA	James Cook U, Australia	M	W	10
Prof.	David Cumming *	Zimbabwe	U Zimbabwe	M	W	20
Dr	Richard Dean	SA	Renu Karoo	M	W	10
Dr	Tom Flower *	UK	U St Andrews, Canada	M	W	20
Dr	David Grémillet *	France	CNRS	M	W	20
Dr	Andrew Jenkins	SA	Avisense	M	W	20
Dr	Grant Joseph	SA	Freelance	M	W	10
Dr	Alan Lee	SA	Blue Hill Nature Reserve	M	W	10
Dr	Ian Little	SA	EWT	M	W	20
Dr	Rowan Martin	UK	World Parrot Trust	M	W	10
Dr	Yan Rupert-Coudert	France	French Polar Institute IPEV	M	W	20
Dr	Martim de Melo	Portugal	CIBIO	M	W	10
Dr	Antoni Milewski	Australia	Murdoch U, Australia	M	W	20
Mr	Michael Mills	SA	Angola Country Program	M	W	20
Prof.	Stephen Redpath *	UK	U Aberdeen	M	W	10
Dr	Richard Sherley	UK	U Exeter	M	W	10
Dr	Rob Simmons *	UK	UCT	M	W	40
Dr	Ross Wanless *	SA	BirdLife SA	M	W	30

* Official UCT Honorary Professor or Honorary Research Associate

Table 8. FitzPatrick Institute CoE Students registered for, or graduating in, 2017

* = thesis students graduated during 2017; ** = MSc CB course students graduated during 2017

Name	Citizen	Univ.	Gender	Race	Degree	1 st year	NRF CoE support	
							Bursary	Running
Ryklief, Rabi'a *	SA	NMU	F	B	PhD	2014	No	No
Bourne, Amanda	SA	UCT	F	W	PhD	2016	No	Yes
Carpenter-Kling, Tegan	SA	NMU	F	W	PhD	2017	Yes	Yes
Carstens, Kate *	SA	UCT	F	W	PhD	2014	No	No
Flores, Selena (upgraded)	USA	UCT	F	W	PhD	2015	Yes	Yes
Garbett, Rebecca	UK	UCT	F	W	PhD	2015	Yes	Yes
Garcia-Heras, Sophie *	Spain	UCT	F	W	PhD	2014	No	No
Nebel, Carina	Austria	UCT	F	W	PhD	2017	Yes	Yes
Stevens, Kim	SA	UCT	F	W	PhD	2016	Yes	Yes
Traisnel, Gwendoline	France	NMU	F	W	PhD	2016	Yes	Yes
Thompson, Michelle	SA	U. Pta	F	W	PhD	2014	Yes	Yes
van de Ven, Tanja *	Dutch	UCT	F	W	PhD	2012	No	No
Brink, Christiaan	SA	UCT	M	W	PhD	2017	Yes	Yes
Cloete, Daniel	SA	UCT	M	W	PhD	2016	No	No
Dilley, Ben	SA	UCT	M	W	PhD	2015	Yes	Yes
Gaglio, Davide *	Italy	UCT	M	W	PhD	2015	No	Yes
Lowney, Anthony	UK	UCT	M	W	PhD	2015	Yes	Yes
Noakes, Matthew	SA	U. Pta	M	W	PhD	2015	Yes	Yes

O'Connor, Ryan	USA	U. Pta	M	W	PhD	2013	No	No
Pietersen, Darren	SA	U. Pta	M	W	PhD	2013	No	No
Rodseth, Edmond (upgraded)	SA	UCT	M	W	PhD	2015	No	Yes
Rollinson, Dominic *	SA	UCT	M	W	PhD	2013	No	No
Schoombie, Stefan	SA	UCT	M	W	PhD	2017	Yes	No
van Eeden, Rowen *	SA	UCT	M	W	PhD	2013	No	No
Whitehead, Otto *	SA	UCT	M	W	PhD	2014	No	No
Abbas, Huyam **	Sudan	UCT	F	B	MSc CB	2016	No	No
Chinho, Tendai **	Zimbabwe	UCT	F	B	MSc CB	2016	No	No
Davis, Sydney	USA	UCT	F	B	MSc CB	2017	No	No
Malematja, Mpho	SA	U. Pta	F	B	MSc	2017	Yes	Yes
Masiko, Oyena	SA	UCT	F	B	MSc CB	2017	No	No
Moloto, Ditiro	SA	UCT	F	B	MSc	2016	Yes	Yes
Nenzhelele, Elelwani **	SA	UCT	F	B	MSc CB	2016	No	No
Blanckenberg, Michelle **	SA	UCT	F	W	MSc CB	2016	No	No
Button, Rio	SA	UCT	F	W	MSc CB	2017	No	No
Casola, Sarah **	USA	UCT	F	W	MSc CB	2016	No	No
Catto, Sarah	SA	UCT	F	W	MSc CB	2017	No	No
Craig, Christie **	SA	UCT	F	W	MSc CB	2016	No	Yes
Day, Belinda	SA	UCT	F	W	MSc CB	2016	No	No
Dubay, Shannon	USA	UCT	F	W	MSc CB	2017	No	No
du Toit, Carla	SA	UCT	F	W	MSc	2017	No	Yes
Engelbrecht, Ilana	SA	NMU	F	W	MSc	2017	Yes	Yes
Johnson, Laurie	SA	UCT	F	W	MSc	2016	Yes	Yes
Kelly, Caitlin	USA	UCT	F	W	MSc CB	2017	No	No
Lindberg, Colleen	USA	UCT	F	W	MSc CB	2017	No	No
Ly, Alicia **	USA	UCT	F	W	MSc CB	2016	No	No
Mottram, Phoebe	UK	UCT	F	W	MSc CB	2017	No	No
Parrish, Margaret **	USA	UCT	F	W	MSc CB	2016	No	No
Tubbs, Noelle	USA	UCT	F	W	MSc	2013	No	No
van den Heever, Danielle *	SA	NMU	F	W	MSc	2016	Yes	Yes
van der Merwe, Rona	SA	UCT	F	W	MSc	2017	Yes	Yes
Leepile, Leungo	Botswana	UCT	M	B	MSc CB	2017	No	No
Mavinga, Franck	Congo	UCT	M	B	MSc CB	2017	No	No
Molepo, Jerry *	SA	NMU	M	B	MSc	2015	Yes	Yes
Osborne, Alexis	SA	UCT	M	B	MSc	2017	Yes	Yes
Sigqala, Makabongwe	SA	NMU	M	B	MSc	2017	Yes	No
Zimunya, Tapiwa	Zimbabwe	UCT	M	B	MSc CB	2017	No	No
Botha, Johnathan *	SA	NMU	M	W	MSc	2015	No	No
de Blocq, Andrew *	SA	UCT	M	W	MSc	2015	No	No
Dura, Carles **	Spain	UCT	M	W	MSc CB	2016	No	No
Fleming, Campbell	SA	UCT	M	W	MSc	2016	Yes	Yes
Gush, Wesley **	SA	UCT	M	W	MSc CB	2016	No	No
Hyvarinen, Olli	Finland	UCT	M	W	MSc CB	2017	No	No
Jeal, Corey **	Australia	UCT	M	W	MSc CB	2016	No	No
Jones, Christopher	SA	UCT	M	W	MSc	2016	Yes	Yes
Kemp, Ryno	SA	U. Pta	M	W	MSc	2017	Yes	Yes
Macray, Matthew **	Zimbabwe	UCT	M	W	MSc CB	2016	No	No
McClellan, Luke	UK	UCT	M	W	MSc	2016	No	Yes
Middleton, Kyle	SA	UCT	M	W	MSc	2017	Yes	Yes
Olinger, Ryan **	USA	UCT	M	W	MSc CB	2016	No	Yes
van Beuningen, David	SA	UCT	M	W	MSc CB	2017	No	No
Ramudzuli, Abigail *	SA	U Limp	F	B	Hons	2017	No	Yes
Lubbe, Nevanya *	SA	U. Pta	F	W	Hons	2017	Yes	Yes

Table 9. CoE Post-doctoral Fellow and Student demographics in 2017

	Black			White			Total
	Female	Male	Total	Female	Male	Total	
P-doc	1	1	2	6	1	7	9
PhD	1		1	11	13	24	25
MSc	7	6	13	18	14	32	45
BSc H	1		1	1		1	2
Total	10	7	17	36	28	64	81

Table 10. Proportion of Black students supported by the CoE during 2005-2017

	Year												
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Number students	52	53	54	45	45	50	59	60	68	73	68	71	72
Black students	15	11	13	13	18	15	15	11	8	7	8	13	14
Proportion Black(%)	29	21	24	29	40	30	25	18	12	10	12	18	19

Table 11: Places of origin of CoE students supported in 2017

NRF Targets	Number of students supported	%
SA	43	60
SADC*	5	7
African	1	1
Other	23	32
Total	72	100

*Southern African Development Community countries include Angola, Botswana, Congo (DRC), Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, Swaziland, Tanzania, Zambia and Zimbabwe (South Africa is excluded here)

Table 12. Research assistants for 2017

Title	Name	Citizenship	Gender	Race	Based at
Ms	Doreen Chaussadas	France	F	W	UCT
Mrs	Christie Craig	SA	F	W	UCT
Ms	Paige Ezzey	SA	F	W	UCT
Ms	Femke Kiggen	Netherlands	F	W	NMU
Ms	Rita Leal	Portugal	F	W	UCT
Ms	Vonica Perold	SA	F	W	UCT
Ms	Abigail Ramudzuli	SA	F	B	UCT
Ms	Miqkayla Stofberg	SA	F	B	UCT
Ms	Jessleena Suri	India	F	B	UCT
Dr	Shane McPherson	New Zealand	M	W	UCT
Mr	Clement Motau	SA	M	B	UCT
Mr	Dane Paijmans	SA	M	W	UCT
Mr	Nicolas Suarez	Argentina	M	W	NMU

FINANCES

The distribution of funding across the two focal research areas during 2017 and co-funding from other sources

Table 13 reflects the total funding (R20 005 400) for the 37 CoE projects during 2017, according to the approved and amended 2017 CoE budget and additional funds sourced elsewhere (Table 15). Table 14 reflects the overall distribution of funds across the two focal research areas during 2017. Research conducted by the CoE which is not funded at least in part by the CoE, and UCT remuneration of Fitz/CoE staff, are excluded from Tables 13 & 14.

Table 13. Distribution of 2017 research funds according to the source of funds

	DST-NRF		Other sources	
	Bursary	Running	Bursary	Running
	3 785 000	3 473 400	7 038 000	5 709 000
	52%	48%	55%	45%
Sub total	7 258 400*		12 747 000	
Proportion	36%		64%	

*the corporate operations funds reflected in the 2017 CoE budget are excluded from the DST-NRF grant here

Table 14. Distribution of 2017 research funds according to the fund source and the focal research areas

Fund source	Research area*	1	2	Proportion within source
DST-NRF	1	1 832 000	5 426 400	9%
	2			27%
Other funds	1	7 038 000	5 709 000	35%
	2			29%
Total		8 870 000	11 135 400	
Proportion within research area		44%	56%	100%

*1 = understanding biodiversity; 2 = maintaining biodiversity

Comments on the distribution of CoE and other funds during 2017:

The DST-NRF research grant was a little more than one third of the total funds available for the CoE research projects. The proportional distribution of research area funding favours conservation science (maintaining biodiversity), thus satisfying the recommendations of the 2009 review panel. However, sourcing external funds for research on understanding biodiversity remains more difficult.

Table 15. Funds secured from other sources for the 2017 CoE projects

Bursaries		Running costs		Total	
1*	2	1	2		
			90 000	90 000	Local Public R1 950 000
	80 000			80 000	DEA - NMMU
	66 000		105 000	171 000	NRF DAAD scholarship
			100 000	100 000	NRF CSUR Cunningham
			600 000	600 000	NRF U Pta
	150 000		180 000	330 000	NRF Swiss bilateral
	255 000			255 000	NRF unrated researcher
			650 000	650 000	NRF Innovation
	55 000			55 000	NRF SANAP/DEA
			25 000	25 000	NRF MP M D extensions scholarship
					SANBI
			300 000	300 000	Local Private R2 191 000
250 000		100 000		350 000	ABAX Foundation
235 000	275 000			510 000	Clancey bequest
30 000				30 000	Claude Leon Foundation
			50 000	50 000	Ada & Bertie Levenstein
			45 000	45 000	Darling Brew
			20 000	20 000	DOW Chemicals
			260 000	260 000	Gordon Sprigg Scholarship
150 000	80 000			230 000	Hans Hoheisen Charitable Trust
	70 000			70 000	Harry Crossley Foundation
			13 000	13 000	J.W. Jagger Fund
			20 000	20 000	Klaserie Game Reserve
			40 000	40 000	Tswalu Foundation
	275 000			275 000	NMU Research Theme Grant
			358 000	358 000	UCT URC individuals
			80 000	80 000	UCT URC CoE grant
	85 000		40 000	125 000	UCT Launching Grant
			10 000	10 000	U Pretoria
					U Western Cape
	200 000		1 600 000	1 800 000	International Public R4 327 000
			200 000	200 000	European Research Council
		17 000		17 000	Swedish STINT grant
	1 350 000			1 350 000	Academy of Finland
150 000		20 000		170 000	ANR (France)
			30 000	30 000	Australian Research Council
	1 050 000			1 050 000	CNRS France
360 000				360 000	IF (FCT, Portugal)
					U of Oulu
	90 000		70 000	160 000	International Private R2 718 000
		306 000		306 000	AZA -SAFE
			64 000	64 000	BBSRC Fellowship, Cambridge
1 350 000		306 000		1 656 000	British Ecological Society
			92 000	92 000	Leverhulme Trust
432 000				432 000	Mohamed Bin-Zayed Species Fund
			8 000	8 000	Newton Trust, U. Cambridge
					Royal Holloway, U London
2 957 000	4 081 000	749 000	4 960 000	12 747 000	

*1 = understanding biodiversity; 2 = maintaining biodiversity

DST-NRF CoE
Birds as Keys to Biodiversity Conservation at the Percy FitzPatrick Institute
CASH FLOW ANALYSIS FOR THE 2017 FINANCIAL YEAR

DESCRIPTION	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	TOTAL	Annual Budget	VARIANCE
NRF			3 580 950								3 580 950		7 161 900	7 161 900	0
Interest	2 072												2 072	2 072	0
c/f from 2016	613 631												613 631	613 631	0
TOTAL INCOME	615 703	0	3 580 950	0	0	0	0	0	0	0	3 580 950	0	7 777 603	7 777 603	0
Salaries	-74 099	-93 830	-79 601	-73 743	-93 206	-86 166	-113 091	-138 165	-139 268	-139 193	-149 980	-133 831	-1 314 173	1 106 000	-208 173
Student costs	-894 830	-711 180	-201 350	0	-108 525	-809 630	-2 820	-165 000	-39 325	0	-108 000	-27 000	-3 067 660	3 680 000	612 340
Conferences	-500	-2 644	-8 048	-15 339	-32 289	-8 048	-1 965	-23 091	-10 287	-25 562	-27 045	-28 512	-183 331	184 500	1 169
Equipment													0	0	0
Running	-124 795	-97 126	-160 518	-139 354	-189 806	-332 077	-129 059	-330 823	-88 224	-292 640	-174 700	-235 663	-2 294 785	2 749 600	454 815
TOTAL EXPENSES	-1 094 224	-904 781	-449 517	-228 436	-423 826	-1 235 921	-246 935	-657 079	-277 105	-457 394	-459 725	-425 006	-6 859 949	7 720 100	860 151
NET OUTCOME PROFIT/LOSS	-478 521	-1 383 302	1 748 131	1 519 695	1 095 869	-140 052	-386 987	-1 044 066	-1 321 171	-1 778 566	1 342 660	917 654	917 654		

Notes:

- 1 Balance brought forward matches previous year's Financial Statement
- 2 Shows actual expenditure only (excluding commitments) for all months
- 3 Reflects the entire costs of the CoE including satellite campuses
- 4 Regards income as positive cash flow and expenditure as negative cash flow

Audited Income and expenditure for 2017

A copy of the 2017 Income and Expenditure Statements shown below in Table 16 is attached to the *Ernst & Young* Audit Report.

It was unfortunate that Denise Scheepers resigned during December 2017, which meant that a replacement appointment (Carmen Smith) could only be made in mid-January 2018. This impacted the end of year financial reconciliation and audit material compilation for 2017. Fortunately we were able to call upon retired Chief Technical Officer, Chris Tobler, who assisted Carmen to submit the audit pack by the end of January 2018. Thankfully, relatively few queries were raised during the audit process and the report was clean with regards to compliance. Furthermore, those queries listed were of little material significance and were clarified to the auditor's satisfaction.

Table 16. FitzPatrick Institute CoE Financial Statement for January to December 2017

	Operating Fund	Invested Fund	All Funds	
Brought forward from 2016		-613 630.95	-22 266.83	-635 897.78
Income 2017		-7 161 899.00	-1 755.74	-7 163 654.74
NRF income	-7 161 899.00			
Other income				
Investment income		-1 755.74		
Net transfer value		0.00	-0.00	-
CR transfer	-0.00		-0.00	
DR transfer	0.00			
Expenditure 2017		6 859 948.69		
Salaries total	1 314 173.38			
Bursaries	3 067 660.00			
Conferences	183 330.50			
Equipment				
Running costs	2 294 784.81			
Carry forward to 2017		-915 581.26	-24 022.57	-939 603.83
Reconciliation:				
SAP balance @ 31/12/2017		-866 822.81		
Advances in hand		-48 758.45		
		-915 581.26		

Notes:

- 1) No non-specific transfers to other collaborators were made in 2017.
- 2) All funds carried forward to 2018 include advances in hand.
- 3) Both funds reconcile to SAP.

Appendix 1: FitzPatrick Institute CoE Publications for 2017

Scientific papers published in 2017 (132)

Papers in SCI-ranked journals (124)

IF score = Thomson Scientific Impact Factor score (2015, 2-year impact factor)

Published hard-copy journals (100):

- Albright, T.P., Mutiibwa, D., Gerson, A.R., Smith, E.K., Talbot, W.A., O'Neil, J.J., McKechnie, A.E. and Wolf, B.O. 2017. Mapping evaporative water loss in desert passerines reveals an expanding threat of lethal dehydration. *Proceedings of the National Academy of Science (PNAS)* 114: 2283-2288. <http://dx.doi.org/10.1073/pnas.1613625114> IF 9.423
- Ansorge, I.J., Skelton, P., Bekker, A., de Bruyn, P.J.N., Butterworth, D., Cilliers, P., Cooper, J., Cowan, D.A., Dorrington, R., Fawcett, S., Fietz, S., Findlay, K.P., Froneman, P.W., Grantham, G.H., Greve, M., Hedding, D., Hofmeyr, G.J.G., Kosch, M., le Roux, P.C., Lucas, M., MacHutchon, K., Meiklejohn, I., Nel, W., Pistorius, P., Ryan, P.G., Stander, J., Swart, S., Treasure, A., Vichi, M., and van Vuuren, B.J. 2017. Exploring South Africa's southern frontier: a 20-year vision for polar research through the South African National Antarctic Programme. *South African Journal of Science* 113: 11-17. <http://dx.doi.org/10.17159/sajs.2017/a0205> IF 0.902
- Asefa, A., Davies, A.B., McKechnie, A.E., Kinahan, A.A. and van Rensburg, B.J. 2017. Effects of anthropogenic disturbance on bird diversity in Ethiopian montane forests. *Condor* 119: 416-430. <http://dx.doi.org/10.1650/CONDOR-16-81.1> IF 1.427
- Atkins, A., Redpath, S.M., Little, R.M., and Amar, A. 2017. Experimentally manipulating the landscape of fear to manage problem animals. *Journal of Wildlife Management* 81: 610-616. <http://dx.doi.org/10.1002/jwmg.21227> IF 1.725
- Baum, J., Cumming, G.S. and De Vos, A. 2017. Understanding spatial variation in the drivers of nature-based tourism and their influence on the sustainability of private land conservation. *Ecological Economics* 140: 225-234. <http://dx.doi.org/10.1016/j.ecolecon.2017.05.005> IF 3.227
- Berkunsky, I., Quillfeldt, P., Brightsmith, D.J., Abbud, M.C., Aguilar, J.M.R.E., Alemán-Zelaya, U., Aramburú, R.M., Arias, A.A., McNab, R.B., Blasby, T.J.S., Barberena, J.M.B., Beissinger, S.R., Rosales, M., Berg, K.S., Bianchi, C.A., Blanco, E., Bodrati, A., Bonilla-Ruz, C., Botero-Delgado, E., Canavelli, S.B., Caparroz, R., Cepeda, R.E., Chassot, O., Cinta-Magallón, C., Cockle, K.L., Daniele, D., de Araujo, C.B., de Barbosa, A.E., de Moura, L.N., Castillo, H.D., Díaz, S., Díaz-Luque, J.A., Douglas, L., Rodríguez, A.F., García-Anleu, R.A., Gilardi, J.D., Grilli, P.G., Guix, J.C., Hernández-Muñoz, A., Hiraldo, F., Horstman, E., Portillo, R.I., Isacch, J.P., Jiménez, J.E., Jayner, L., Juárez, M., Kacoliris, F.P., Kanaan, V.T., Klemann-Júnior, L., Latta, S.C., Lee, A.T.K., Lesterhuis, A., Lezama-López, M., Lugarini, C., Marateo, G., Marinelli, C.B., Martínez, J., McReynolds, M.S., Urbina, C.R.M., Monge-Arias, G., Monterrubio-Rico, T.C., Nunes, A.P., Nunes, FdP., Olaciregui, C., Ortega-Arguelles, J., Pacifico, E., Pagano, L., Politi, N., Ponce-Santizo, G., Reyes, H.O.P., Prestes, N.P., Presti, F., Renton, K., Reyes-Macedo, G., Ringler, E., Rivera, L., Rodríguez-Ferraro, A., Rojas-Valverde, A.M., Rojas-Llanos, R.E.,

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- Bolopo, D., Canestrari, D., Martínez, J.G., Roldan, M., Macías-Sanchez, E., Vila, M., Soler, M. and Baglione, V. 2017. Flexible mating patterns in an obligate brood parasite. *Ibis* 159: 103-112. <http://dx.doi.org/10.1111/ibi.12429> IF 1.804
- Bosque, C., Bosque, C.D. and Lloyd, P. 2017. Diet and time-activity budget of white-backed musebirds *Colius colius* in south-western South Africa. *Ostrich* 88: 247-252. <http://dx.doi.org/10.2989/00306525.2017.1294629> IF 0.418
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