



**African Penguin Health: Research Meeting: Friday 09 July 2021
Note of Meeting**

(1) Objectives

1. To discuss progress, challenges and way forward in AP Health PG training programmes.
2. To identify research needs and potential projects.

(2) Attendees

Darrell Abernethy (DA)	Aberystwyth University
Katta Ludynia (KL)	SANCCOB
Leslie Petrik (LP)	University of the Western Cape
David Gordon Roberts	SANCCOB
Laura Roberts (LR)	Western Cape Government/University of Pretoria
Andrea Spickett (AS)	Onderstepoort Veterinary Research
Ned Snelling (NS)	University of Pretoria
Albert Snyman (ASn)	SANCCOB
Ralph VanStreels (RV)	Institute of Research and Rehabilitation of Marine Animals (IPRAM), Brazil
Lauren Waller (LW)	SANCCOB

(3) Programme: Please see Appendix

Note: In respect of Objective (1), it was agreed there was no need to discuss LR's PhD or Takdeera Lewis' MSc as these had been covered previously in the week.

(4) Meeting Outline, Key Points, and Conclusions

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4.1 NS provided an overview of the use of technology in thermal physiological research and conservation. A copy of his presentation is [available here](#).

- He described different temperature zones/points affected metabolism: the thermal neutral zone (TNZ), optimum body temperature and prescriptive zone. The TNZ involves increased metabolic rates on either side of the zone, requiring adequate feed and water, and is thus important for the long-term viability of the animal and population. It is important to consider both pre- and post-hatch life stages and various tools have been developed to record thermal activity in both, including thermocouples, black globes, temperature buttons and miniature temperature data loggers.

- There was extensive discussion around researching effects of climate change (measuring ambient temp, feed availability), determining upper and lower limits of prescriptive zones in both pre- and post-hatch life stages, optimal temperatures for raising and keeping penguins, and measurement of core v superficial body temperature.

4.2. AS provided an overview of the helminths that might occur in African penguins and a description of the methodology to retrieve them. A copy of her presentation is [available here](#).

- It was agreed that opportunistic collection of faeces during the flu survey would continue but the focus would switch to removal of GIT from dead penguins and examination of contents. Consideration will be given to LP's PhD student taking on this work, as 20 carcasses will be provided for her toxicity study. Liver and kidney samples should also be collected for trematode assessment.
- OVR (AS) should be included in all endoparasite work as AS will provide expertise for a wider South African avian endoparasite platform.
- Endoparasite research in penguins should be linked to parallel work in fish as little was known about the relationship between the two hosts.
- ASn advised that removal of GITs was not difficult but the numbers of penguin carcasses would be small, staff time/resources were an issue and that freezer storage at SANCCOB was limited.

4.3. LP provided a brief overview of progress with her students; she was due to meet Dr Pichegru the following week to discuss supervision of Stephanie Dreyer; thereafter she would plan to meet with DA to consider the way forward. DR advised it will be difficult to use haematology (blood smear examination) as a reliable indicator of stress in penguins.

4.4. DA provided an update on plans to move the haemoparasite project forward. A copy of the presentation is [available here](#).

- DR provided a copy of the SANCCOB protocol. RV advised this was adequate for rehabilitation but needed to be further developed for research. He recommended that smears be stained quickly, within first week, to avoid deterioration in the sample, and that >150 fields be examined. It is possible for a trained person to examine 10 smears/hour.
- KL suggested a haematology workshop could be held at the forthcoming penguin conference in Chile in 2022. It was agreed this was a good idea and should be furthered considered.

D. Abernethy
16 July 2021



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Appendix: Programme

Time	Activity	Lead
0900 - 0910	Welcome and workshop objectives	Darrell Abernethy (AU)
0910 - 0950	Physiology – use of technology in research/conservation	Ned Snelling (UP)
0950- 1015	Endoparasites – how do we move forward?	Andrea Spickett (OVR)
1015 - 1030	Toxicity studies – how do we move forward?	Leslie Petrik (UWC)
1030 - 1045	Haemoparasites – how do we move forward?	Darrell Abernethy
1045 - 1200	Discussion – what is missing?	
1200	Close	