University of Victoria | Graduate Studies

PROGRAMME

The Final Oral Examination for the Degree of

DOCTOR OF PHILOSOPHY
(Department of Anthropology and Department of Biology)

Jody Weir

2007	Texas A&M University	MSc
2002	University of British Columbia	BSc

"Infant Development and Maternal Strategies in the Two Largest Lemurs: The Diademed Sifaka (*Propithecus diadema*) and the Indri (*Indri indri*)"

Thursday, July, 10, 2014
9:00 AM
DTB A144

Supervisory Committee:
Dr. Lisa Gould, Department of Anthropology, UVic (Co-Supervisor)
Dr. Barry Glickman, Department of Biology, UVic (Co-Supervisor)
Dr. Steig Johnson, Department of Anthropology, UVic (Member)

External Examiner:
Dr. Patricia Wright, Department of Anthropology, Stony Brook University

Chair of Oral Examination:
Dr. David Blades, Department of Curriculum and Instruction

Abstract

At least half of the world's primate species are currently threatened with extinction. Slow life histories combined with rapid habitat loss and hunting in recent years has heightened the extinction risk for many species, including the two largest extant lemurs, the diademed sifaka (*Propithecus diadema*) and the indri (*Indri indri*). Both species belong to the taxonomic family Indriidae, have similar adult weights, and occur in sympatry in certain areas of the montane rainforests of eastern Madagascar. Both species are adapted for folivory however *I. indri* spend considerably more time feeding on leaves than do *P. diadema* resulting in several energy-saving adaptations in *I.indri*. In this dissertation, I explore infant development and maternal strategies of these critically endangered primates with the goal of increasing our knowledge of reproduction and ontogeny in both species. Although previous studies have elucidated key differences in adult behaviour, I am the first to present quantitative data on infants and lactating females in either of these two species. Between June and December of 2011 and 2012, I collected continuous time focal animal data, in Maromizaha forest, to examine behavioural patterns of 12 infants and their mothers from 0 – 33 weeks. In addition, I developed a framework to define and quantify the weaning process and facilitate comparisons across different species and studies. *P. diadema* infants developed feeding competency and independent

locomotion faster than did *I. indri* infants however both species were consistently feeding independently more than they were suckling by week 20. The process of feeding ontogeny in *I. indri* was likely accelerated by coprophagy, as all infants of this species consumed their mother's feces regularly from 10 – 15 weeks old. Lactating females of both species spent more time feeding in mid-lactation when maternal investment was the highest. The prolonged inter-birth interval in *I. indri* is demonstrated as another adaptation that reduces energetic expenditures. In addition, the protracted period of close contact with their mother offers infant *I. indri* more time for social learning of the mother's diet and the group song and for developing competency in vertical clinging and leaping without a tail for balance and support.

Awards, Scholarships, Fellowships

2013-2014:	Ord and Linda Anderson INTD Scholarship, University of Victoria
2010-2013:	NSERC Post-Graduate Scholarship
2009-2013:	President's Scholarship, University of Victoria
2009-2010:	Ord and Linda Anderson INTD Scholarship, University of Victoria

Presentations

1. Weir, J.S. and Gould, L. "Food and Family: Factors affecting infant development in the two largest lemurs." 25th International Primatological Society Congress, Hanoi, Vietnam. Aug. 2014 (oral)

2. Weir, J.S. "Infant development in the two largest lemurs." International Prosimian Congress, Ranomafana, Madagascar. Aug. 2013.(oral)

3. Weir, J.S.; Duprey, N.; Gowans, S. and Würsig, B. "Nursery Groups: Strategies for maternal care in dusky dolphins (*Lagenorhynchus obscurus*)." 18th Biennial Confernce of the Society for Marine Mammalogy, Québec City, Canada. Oct. 2009.(oral)

Publications

1. Weir, J.S.; Duprey, N.; Würsig, B. "Dusky dolphin (*Lagenorhynchus obscurus*) subgroup distribution: are shallow waters a refuge for nursery groups?" *Canadian Journal of Zoology* **2008**, *86*, 1225 - 1234.

2. Weir, J.S.; Deutsch, S.; Pearson, H.C.; "Dusky dolphin calf rearing." In: *Dusky Dolphins: Master Acrobats off Different Shores* (Ed. by B. Würsig & M. Würsig) **2009**, *Academic Press*, 177 - 194.

3. Duprey, N.; Weir, J.S.; Würsig, B. "Effectiveness of a voluntary code of conduct in reducing vessel traffic around dolphins." *Ocean and Coastal Management* **2008**, *51*, 632 - 637.