

# Curriculum Vitae

## Simona Sanvito

Laboratorio de Mamiferos Marinos  
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Place and date of birth:  
Milan, 14th April 1972  
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### Current affiliation

- Laboratorio de Mamiferos Marinos, Facultad de Ciencias Marinas, Universidad Autonoma de Baja California, Ensenada, BC, Mexico
- Department of Biology, Memorial University of Newfoundland (MUN), St. John's, Newfoundland, Canada
- Elephant Seal Research Group (ESRG), Sea Lion Island, Falkland Islands

### Education

- Scientific secondary school diploma, 1991, final mark 54/60
- Degree in Natural Sciences (four years course); 1997; Università degli Studi di Milano (Italy); final mark 110/110 with honor
- Degree thesis on “Structure, development and function of vocalizations of male southern elephant seals (*Mirounga leonina*)”, supervisor: Prof. Renato Massa (Dip. di Scienze Ambientali), field supervisor: Dr. Filippo Galimberti (Istituto di Ecologia Applicata - Roma)
- Two graduate courses at MUN during the winter semester 2000: Conservation Biology (score 85/100) and Behavioral Ecology (score 90/100)
- About to defend a PhD dissertation with a project on “Structural and functional correlates of male vocalizations in southern elephant seals (*Mirounga leonina*)” at MUN (Canada); supervisor of work: Prof. Edward H. Miller
- Currently enrolled in a post-doc program at the Laboratorio de Mamiferos Marinos, Facultad de Ciencias Marinas, Universidad Autonoma de Baja California, Ensenada, BC, (Mexico); research project: “Estrategia reproductiva de machos de foca elefante del norte (*Mirounga angustirostris*) en las Islas San Benitos: fenotipo, correlaciones ecológicas y paternidad genética” (“Reproductive strategy of male northern elephant seals (*Mirounga angustirostris*) at San Benitos Island: phenotype, ecological correlates and genetic paternity”)

## **Scholarships and Fellowships**

- 1999-2004: Fellowship from the School of Graduate Studies, MUN, to support my PhD programme
- 1999: Università degli Studi di Milano (Italy) award for international collaboration, to support the field work connected to the project “Sexual selection and acoustic communication in elephant seals: structural and functional correlates of male vocalizations (*Mirounga leonina*)”
- 2000: Italian National Research Council (CNR) award for international collaboration, to support the field work connected to the project “Sexual selection and acoustic communication in elephant seals: structural and functional correlates of male vocalizations (*Mirounga leonina*)”
- 2001: Lerner Gray Memorial Fund of the American Museum of Natural History; Fund for Marine Research. Project title: “Hormonal correlates of vocal communication in male southern elephant seals (*Mirounga leonina*)”
- 2004: George Hatcher Memorial Scholarship, awarded from MUN
- 2005: Fellow of the School of Graduate Studies at MUN in recognition of outstanding achievement and pursuit of excellence at the graduate level
- 2005: Post-doctoral fellowship from the Mexican Ministry of Foreign Affairs, for a project titled “Reproductive strategy of male northern elephant seals (*Mirounga angustirostris*) at San Benito Island: phenotype, ecological correlates and genetic paternity” conducted at Laboratorio de Mamíferos Marinos, Facultad de Ciencias Marinas, Universidad Autónoma de Baja California, Ensenada, BC, (Mexico)
- 2005: Student travel grant awarded to participate to the 16th Biennial Conference on the Biology of Marine Mammals

## **Research Interests**

- Communication in mammals, and in particular the role of acoustic communication in male competition and sexual selection, and the evolution of honest signals
- Male agonistic behavior and the evolution of conventional contests
- The role of hormones in the modulation of behavior, the use of hormones as markers of social stress, and the development of non invasive sampling techniques
- Behavioral ecology of seals and sea lions, mating tactics and breeding strategies in particular
- Conservation biology of marine mammal populations, and in particular the effect of field research work on animal welfare

- Genetics of elephant seals, estimation of male paternity and study of kinship in particular

### **Experience in scientific research**

- *Good experience of field work:*
  - Field work on southern sea lions (*Otaria byronia*) at Punta Buenos Aires (Valdés Peninsula, Argentina). December 1993-February 1994. Field assistant. Independent research project on male mating strategies. Field supervisor: Dr. Filippo Galimberti, Dipartimento di Biologia Animale, Università degli Studi di Roma “La Sapienza”.
  - Field work on southern elephant seals in the Falkland Islands. August-December 1995 to 1997. Degree thesis research project on acoustic communication. Field supervisor: Dr. Filippo Galimberti
  - Field work on southern elephant seals in the Falkland Islands; August-December 1998 to 2005. Research project on elephant seals mating tactics and breeding strategies and on male vocal communication and the role of acoustic communication in male competition. Supervisor of logistics.
  - Field work on black-backed woodpecker (*Picoides arcticus*) at Terra Nova National Park, Newfoundland; May-August 1999. Research project on nesting and feeding behavior and habitat use. Supervisor of the project: Prof. Edward H. Miller
  - Field work on northern elephant seals (*M. angustirostris*) in the Islas San Benitos (Baja California, Mexico); December-February 2001 to 2006. Comparative research project between southern and northern elephant seal mating and vocal behavior
- *Good experience in bioacoustics analysis:*
  - Digital recordings in harsh environmental conditions. Good knowledge of recording instruments.
  - Sound measurement and spectrographic analysis by dedicated software, including Pro Tools (Digidesign Inc.), Canary and Raven (Bioacoustic Laboratory, Cornell University)
  - Acoustic features analysis of signals using multivariate methods (factorial analysis, discriminant analysis, CART). Good knowledge of statistical software (Stat View, SYSTAT and SPSS).
  - Electronic instruments maintenance and repair
- *Appreciable experience in hormone analysis:*
  - Development of a protocol of blood collection on filter paper, without restraint of individuals, for hormone studies in seals
  - Analysis of blood samples for hormone studies (cortisol and testosterone), using RIA technique
- *Good capabilities in data processing and analysis (Macintosh and Windows)*

## Teaching experience

- Teaching assistant for the following courses at Memorial University of Newfoundland: Biology 1001 (2000-2003, 35 hours per course); Biology 1002 (2000-2003, 35 hours per course); Evolution 2900 (2001, 35 hours)
- Teaching assistant and field work supervisor for the 2003 Animal Behavior 3750 course at Memorial University of Newfoundland (30 hours)

## Skills and capabilities

- Good knowledge of English and Spanish
- Good endurance in field research activities
- Large experience of field life in wild places, alone or as supervisor of small groups, including the role of Principal Investigator of Earthwatch expeditions, related to my elephant seal research project, at Sea Lion Island (Falkland Islands), 2000-2002.

## Scientific publications

Sanvito,S. 1997. Struttura, ontogenesi e funzione dei vocalizzi maschili nell' elefante marino del sud (*Mirounga leonina*). [“Structure, development and function of vocalizations of male southern elephant seals (*Mirounga leonina*)”]; in Italian, with English abstract] Bachelor degree thesis, Universita' degli Studi di Milano, Milano

Sanvito,S. and Galimberti,F. 2000. Bioacoustics of southern elephant seals. I. Acoustic structure of male aggressive vocalizations. *Bioacoustics*. 10: 259-285

Sanvito,S. and Galimberti,F. 2000. Bioacoustics of southern elephant seals. II. Individual and geographical variation in male aggressive vocalizations. *Bioacoustics*. 10: 287-307

Sanvito,S. and Galimberti,F. 2003. Source level of male vocalizations in the genus *Mirounga*: repeatability and correlates. *Bioacoustics* 14: 47-59.

Sanvito,S., Galimberti,F., Delahunty,K.M. and McKay,D.W. (2004). Blood spots in Pinnipedia hormone studies: measure of cortisol levels in southern elephant seals (*Mirounga leonina*). *Aquatic Mammals* 30(2):251-256.

Sanvito,S., Galimberti,F. Sanvito, R. & Braschi, C. (2005). The "seal prick": a low invasive method for blood sampling in free ranging male elephant seals. *Marine Mammal Science* 21(3): 210-217.

Sanvito,S., Galimberti,F. and Miller,E.H. Vocal learning and cultural transmission in southern elephant seals. Submitted to *Animal Behaviour*.

Sanvito,S., Galimberti,F. and Miller,E.H. Honest signaling in vocal communication of male southern elephant seals. Submitted to Animal Behaviour.

Fabiani,A., Galimberti,F., Sanvito,S. and Hoelzel, A.R. (2004) Extreme polygyny among southern elephant seals at the Falkland Islands: behavioral estimates and genetic paternity. Behavioral Ecology 15: 961-969.

Fabiani,A., Galimberti,F., Sanvito,S. and Hoelzel, A.R. (2006). Kin associations and site fidelity in southern elephant seals (*Mirounga leonina*) of the Falkland Islands. Animal behaviour, in press.

Galimberti,F. and Sanvito,S. 1999. A very spatial relationship. GPS mapping aids understanding of elephant seals behavior. GPSWorld. 10: 22-30.

Galimberti,F., Sanvito,S.and Boitani,L. 2000. Marking of southern elephant seals with passive implanted transponders. Mar. Mammal Science 16: 500-504.

Galimberti,F., Sanvito,S., Boitani,L.and Fabiani,A. 2001. Viability of southern elephant seal population of the Falkland Islands. Animal Conservation 4: 81-88.

Galimberti,F. and Sanvito,S. 2001. Modelling females haul out in southern elephant seals (*Mirounga leonina*). Aquatic Mammals. 27: 92-104.

Galimberti,F., Fabiani,A. and Sanvito,S. 2002 a. Opportunity for selection in southern elephant seals: the effect of spatial scale of analysis. Journal of Zoology London. 256: 93-97.

Galimberti,F., Fabiani,A. and Sanvito,S. 2002 b. Measures of breeding inequality: a case study in southern elephant seals. Canadian Journal of Zoology 80: 1240-1249.

Galimberti,F., Gallastroni,A. and Sanvito,S. 2002. Behavioural and morphometric measurements of parental investment in southern elephant seals at the Falkland Islands. Polar Biology 25: 399-403.

Galimberti,F., Sanvito,S.Braschi, C. and Boitani,L. 2005. The cost of success: reproductive effort in male southern elephant seals. Behavioral Ecology and Sociobiology, submitted.