## NATIONAL SCIENCE FOUNDATION

### Notice of Permit Applications Received Under the Antarctic Conservation Act of 1978 (Pub. L. 95–541)

**AGENCY:** National Science Foundation.

**ACTION:** Notice of permit applications Received Under the Antarctic Conservation Act of 1978, Public Law 95–541.

**SUMMARY:** The National Science Foundation (NSF) is required to publish notice of permit applications received to conduct activities regulated under the Antarctic Conservation Act of 1978. NSF has published regulations under the Antarctic Conservation Act at Title 45 part 670 of the Code of Federal Regulations. This is the required notice of permit applications received.

**DATES:** Interested parties are invited to submit written data, comments, or views with respect to this permit application by May 13, 2011. This application may be inspected by interested parties at the Permit Office, address below.

**ADDRESS:** Comments should be addressed to Permit Office, Room 755, Office of Polar Programs, National Science Foundation, 4201 Wilson Boulevard, Arlington, Virginia 22230.

**FOR FURTHER INFORMATION CONTACT:** Nadene G. Kennedy at the above address or (703) 292–7405.

**SUPPLEMENTARY INFORMATION:** The National Science Foundation, as directed by the Antarctic Conservation Act of 1978 (Pub. L. 95–541), as amended by the Antarctic Science, Tourism and Conservation Act of 1996, has developed regulations for the establishment of a permit system for various activities in Antarctica and designation of certain animals and certain geographic areas requiring special protection. The regulations establish such a permit system to designate Antarctic Specially Protected Areas.

The applications received are as follows:

**Permit Application No. 2012–001**

1. *Applicant:* Paul Ponganis, Center for Marine Biotechnology and Biomedicine, Scripps Institution of Oceanography, University of California, San Diego, La Jolla, CA 92093–0204.

**Activity for Which Permit Is Requested**

Take and Import into the U.S.A. The applicant plans to capture up to 10 fledgling emperor chicks for research studies at University of California, San Diego. The volume of the air sacs and lungs are critical to the diving physiology of penguins in at least two ways. First, the respiratory oxygen store is estimated to comprise one-third to one-half the total body $O_2$ stores in various species. And second, the ratio of air sac to lung volume is a potential mechanism for prevention of pulmonary barotrauma ("lung squeeze"). Yet the volumes of the air sacs and lungs have never been directly measured in any penguin species. There have only been indirect estimates based on simulated dives in pressure chambers or on buoyancy-swim speed calculations during dives at sea. Therefore, in this research project, air sac and lung volumes in emperor penguins (*Aptenodytes forsteri*), king penguins (*A. patagonicus*), and Adélie penguins (*Pygoscelis adeliae*) will be measured by 3D reconstructions from computerized tomography (CT) and magnetic resonance imaging (MRI) scans. The study, to be conducted in collaboration with the University of California San Diego Keck Center for Magnetic Resonance Imaging, will utilize captive birds. Subjects from the latter two species are already available. Most of the captive emperor penguins would be considered geriatric and at risk for anesthesia, therefore emperor penguins will be exported as chicks, and then raised and maintained for the study. The export of 10 chicks will have no impact on the Cape Washington colony as emperor penguin chick censuses between 1983 and 2005 have been as high as 24,000 chicks.

Given (a) the significance of the volume of the air sacs and lungs in determination of the magnitude and distribution of total body $O_2$ stores, (b) the lack of verification of indirect estimates of diving air volume in penguins, (c) the possibility of air exhalation during many dives of penguins, and (d) the limited data used to construct allometric equations to predict air sac/lung volume on the basis of body mass, it is imperative to obtain direct measures of air sac and lung volumes in emperor penguins, king penguins, and Adélie penguins. Such direct measurements would provide the maximum available respiratory volume for $O_2$ store calculations and allow better evaluation and interpretation of data obtained with indirect techniques at sea for the three species. This is especially important for emperor penguins, as it is the species in which the most detailed diving physiology studies are available.

**Location**

Cape Washington, Terra Nova Bay, Victoria Land.

**Dates**

September 1, 2011 to December 31, 2012.

**Suzanne H. Plimpton,**

*Management Analyst, National Science Foundation.*

[FR Doc. 2011–8737 Filed 4–12–11; 8:45 am]

**BILLING CODE 7555–01–P**

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