

Animal Management Procedures to Support Magellanic Penguin Artificial Insemination Programs

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Avian Scientific Advisory Group



Overview

- ▶ Support and Techniques:
 - ▶ Nest arrangement
 - ▶ Blood sampling
 - ▶ Voluntary semen collection
- ▶ Insemination Procedure:
 - ▶ Brief overview of techniques



In the Beginning or...

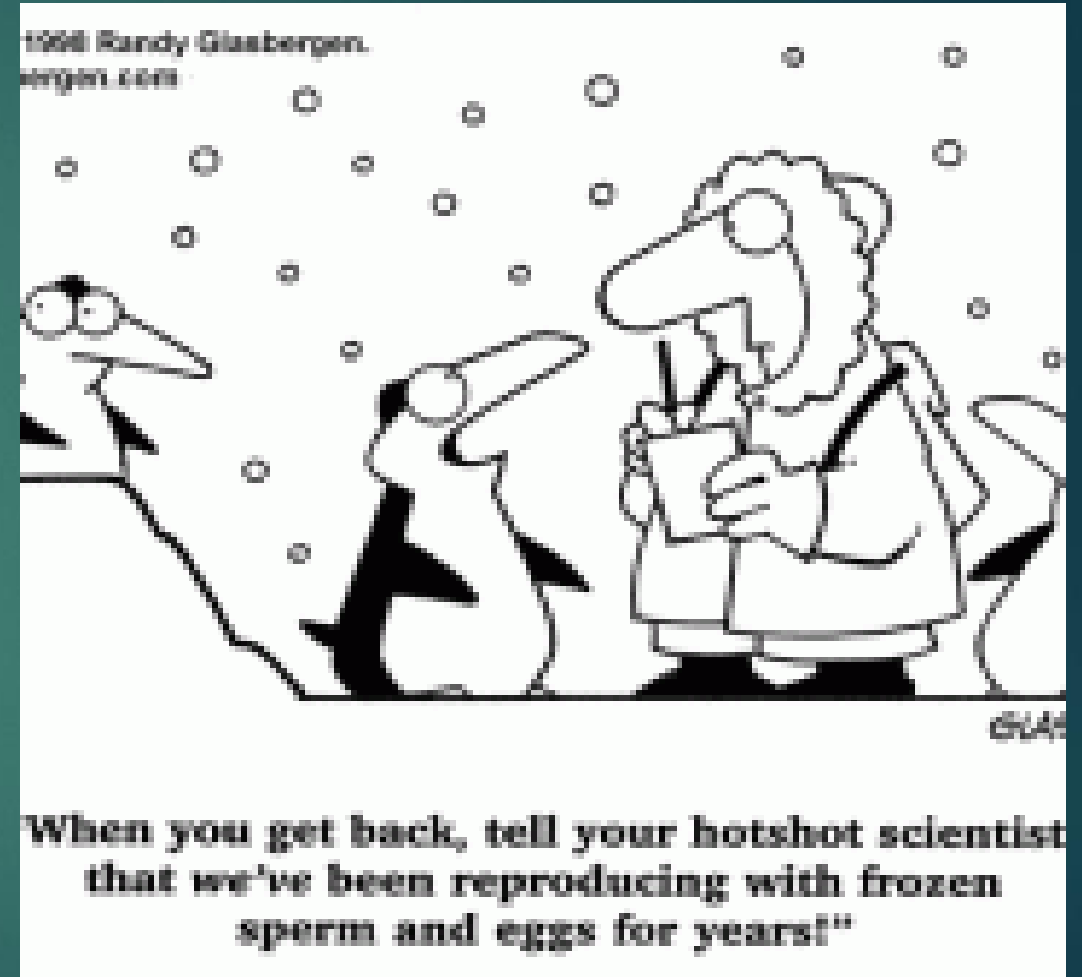
the King and AI

- ▶ **King Penguin “Tut” SWSD**
 - ▶ Long term study to collect, store, freeze semen
 - ▶ Cooperative participant
- ▶ **Magellanic:**
 - ▶ Cooperative participants
 - ▶ Easy to isolate female
- ▶ **Success (8 chicks)**
 - ▶ 2013: 4 via chilled semen AI
 - ▶ 2014: 3 via chilled semen AI and 1 chick conceived from frozen semen



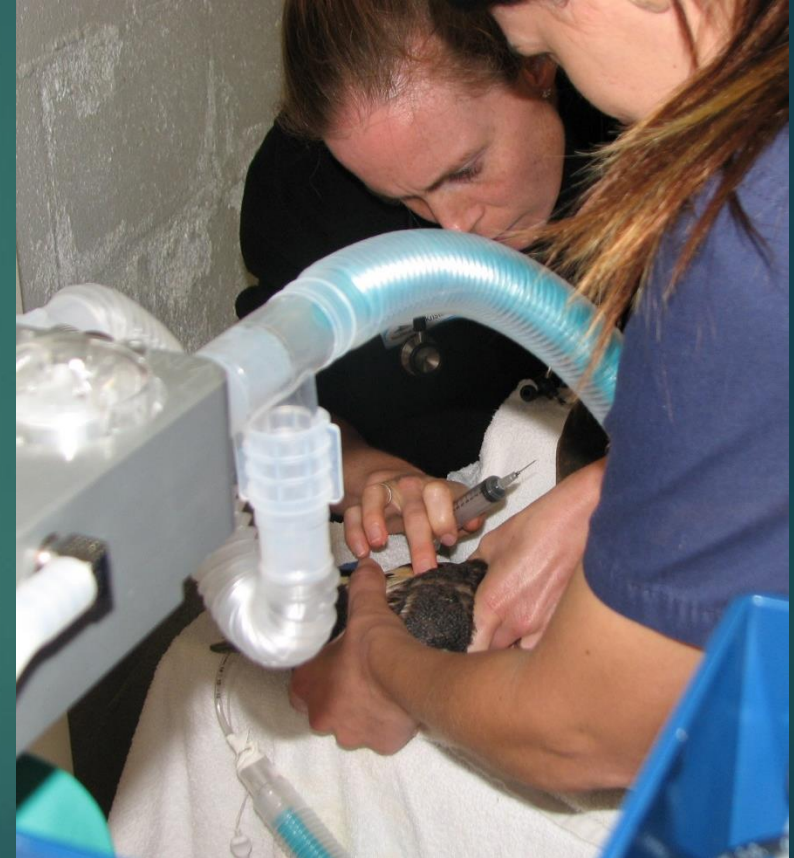
Why...AI?

- ▶ Long term diversity
 - ▶ Increase number of pairs goals
 - ▶ Genetic
 - ▶ Sustainability of populations
 - ▶ Potential application for endangered populations
 - ▶ Genome banking



Blood work

- ▶ Blood:
 - ▶ 8 ml in a lithium-heparin tube placed on ice
 - ▶ Jugular vein blood samples
 - ▶ ~5 weeks prior to egg lay to study biology determine egg laying/oviposition
 - ▶ Nest were fenced off based on hormone and biochemistry values
- ▶ Fecal samples:
 - ▶ Difficult to obtain
 - ▶ Ideal less invasive
 - ▶ Reduce (replace blood samples)



Nesting

- ▶ Outdoor exhibit
 - ▶ Natural setting
 - ▶ Palm logs, perching, browse to cover
 - ▶ Cut Pampas grass distributed in exhibit
 - ▶ Used Vinyl clad wire and shade cloth for cover



Nesting



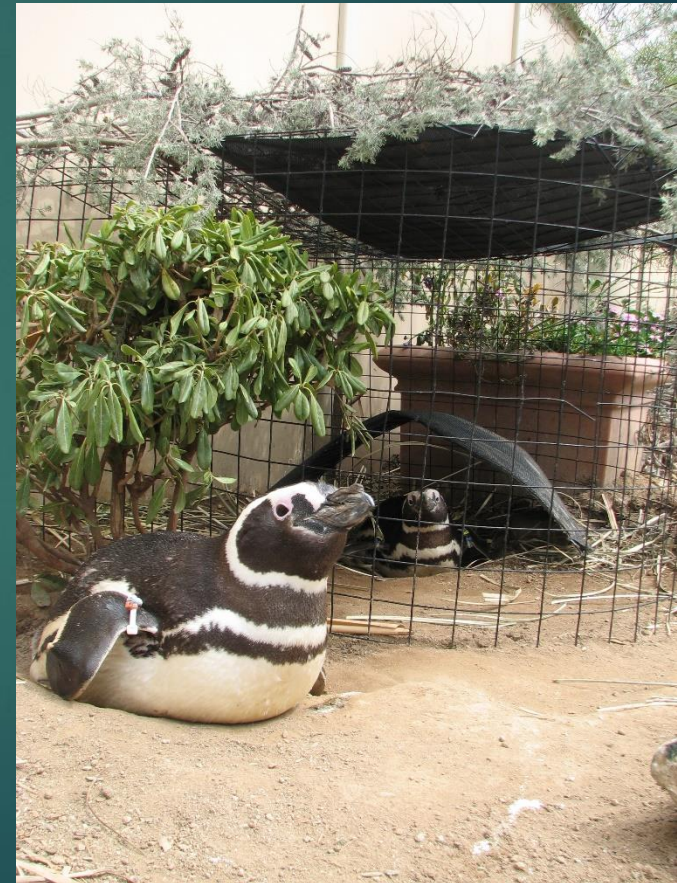
Nests



Corralling the Girls



Boys on guard: Males visual access to females



Collection

- ▶ Samples were collect day before
- ▶ Chilled for ~20 hours
- ▶ Next day females inseminated
- ▶ Teaser sits with clean towel on lap
- ▶ Clean cloaca with gauze and cleaning medium
- ▶ Timing of collection



Collection



- ▶ Male away from or adjacent to nest
- ▶ Towels used to support males
- ▶ Two people:
 - ▶ Collector and a teaser
- ▶ Collector
 - ▶ Clean cloaca
 - ▶ Collection cup

Video



Insemination



Insemination

- ▶ Monitor for 10 minutes post insemination
- ▶ Watch for urination/defecation when bird wakes up





Thank You

- ▶ Dr. Justine O'Brien
- ▶ Justin Brackett
- ▶ Jason Martir
- ▶ Linda Henry
- ▶ Stephanie Costelow
- ▶ SeaWorld San Diego Veterinarian team
- ▶ Entire SeaWorld San Diego Penguin Team
- ▶ SeaWorld & Busch Gardens Reproductive Research Center
- ▶ ASAG



SeaWorld San Diego Penguin Team

TO LEAD IN PENGUIN EDUCATION, RESEARCH, AND CONSERVATION THROUGH
UNPARALLELED GUEST CONNECTIONS, INNOVATIVE HUSBANDRY, SCIENTIFIC
CONTRIBUTIONS, AND SUSTAINABLE PRACTICES

