



**BIERZS 2007**  
**Bear Information**  
**Exchange**  
**for**  
**Rehabilitators,**  
**Zoos &**  
**Sanctuaries**

24<sup>th</sup> - 26<sup>th</sup> August 2007  
Pomona, CA



## Welcome

Dear BIERZS Delegate,

The BIERZS 2007 Planning Group, Sponsors, and Volunteers want to welcome you to the first international bear care symposium for rehabilitator, zoo, and sanctuary bear care professionals. Our objective is to exchange bear care information, ideas and issues, and to build bridges of communication between our organizations in order maximize our strengths and resources in bear care and bear conservation. This weekend you will enjoy three terrific venues, stimulating presentations, hands-on workshops, good food, new friends and excellent conversation. Thank you for participating and have fun.

**JOIN !!!!**     [www.bearkeepers.net](http://www.bearkeepers.net)

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## Sponsors

- Animals Asia
- AZA Bear Taxon Advisory Group
- Carol J. McIntyre
- Direct Medical Systems
- Friends Of The Moonridge Animal Park
- International Wildlife Rehabilitation Council
- Los Angeles Zoo and Botanical Gardens



Direct Medical Systems-Portable Ultrasound

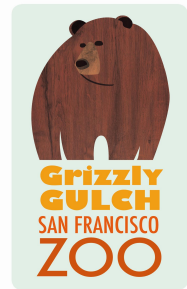
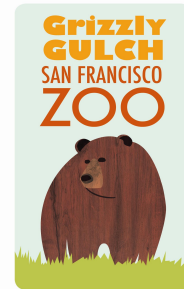


AZA BEAR TAG



Sponsors

- Pet Ag
- Polar Bears International
- San Francisco Zoological Gardens
- Shape Of Enrichment
- Western University Of Health Sciences
- World Society For The Protection of Animals



World Society for the Protection of Animals

*"Our heartfelt thanks to Polar Bears International for supporting the printing of our program"*

## BIERZS 2007 Planning Group

- Carol Bresnay, Lydia Fogal: Art Market Coordinator
- Shelly Golden: On-Site Coordinator for Moonridge Animal Park
- Jim Haigwood: On-Site Coordinator for Los Angeles Zoo
- Valerie Hare: Enrichment Workshop Coordinator
- Gail Hedberg: Agenda/Proceedings Coordinator, Moderator
- Carrie McIntyre: Information Coordinator
- Teresa Morishita: On-Site Coordinator Western University
- Else Poulsen: Co-Chair, Sponsorship Coordinator
- Jason Pratte: Operant Conditioning Workshop Coordinator, Moderator
- Don Richardson: On-Site Coordinator for Moonridge Animal Park
- Bill Treadwell: On-Site Coordinator for Moonridge Animal Park
- Jordan Schaul: Co-Chair, Moderator
- Susan Shepard: On-Site Registration Coordinator
- Jackson Zee: Moderator

*Congratulations to an extraordinary group of individuals that contributed countless hours to make this symposium possible - THANK YOU*

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### Western University of Health Sciences College of Veterinary Medicine

Western University of Health Sciences opened the newest College of Veterinary Medicine (CVM) in the U.S. in 2003. The College is the 28th veterinary college in the country and the first new veterinary college in more than 20 years. It is located about 35 miles east of Los Angeles. The College was established with a vision of providing innovative veterinary education that is cost-effective, in an interactive community of diverse faculty and students.

#### MISSION STATEMENT:

To produce, in a humanistic tradition, health care professionals and biomedical knowledge that will enhance and extend the quality of life in our communities.



Details for Western University of Health Sciences can be found at <http://www.westernu.edu/xp/edu/veterinary/home.xml>

### Los Angeles Zoo

A 113-acre site in Griffith Park was chosen, and in 1964 nonprofit organization was created to support the new effort. Before the new zoo even opened, the Greater Los Angeles Zoo Association (GLAZA) had already graduated a class of trained, volunteer docents; produced several issues of a quarterly magazine called Zoo View; and had begun raising money and acquiring animals

When the Los Angeles Zoo debuted in November 1966, 80,000 Angelinos attended the opening. (Several of the animals that were at the Zoo on opening day are still with us, including an alligator named Methuselah.) In the interest of health and safety, the L.A. Zoo was the first major zoo in the United States to bar visitors from feeding the animals.

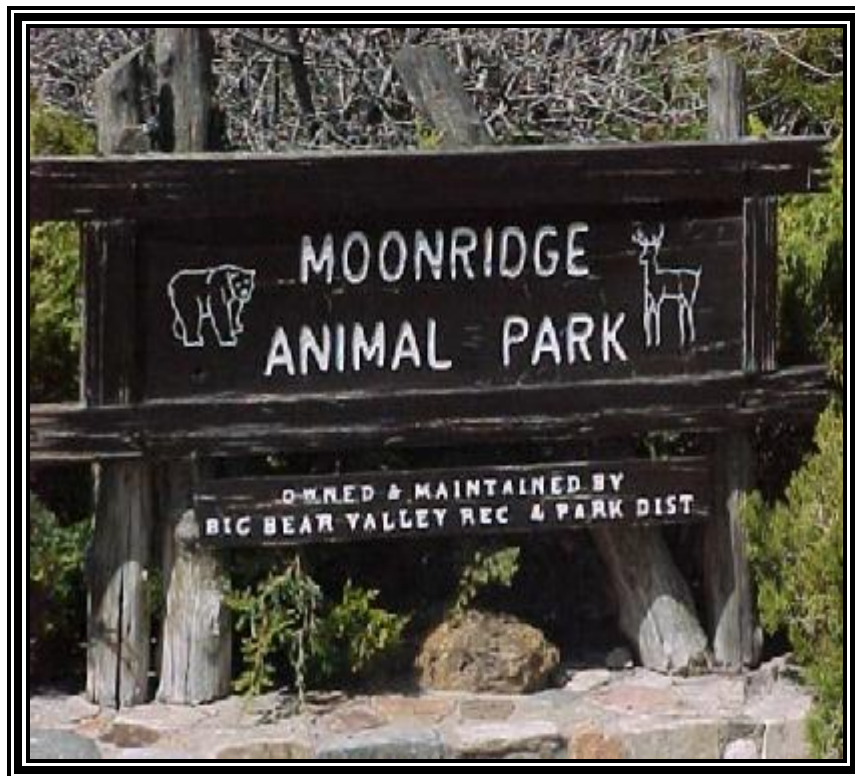
Details for the Los Angeles Zoo can be found at <http://www.lazoo.org/>



**Moonridge Animal Park**

In 1960, a 50-year lease on the property enabled Moonridge Animal Park to grow into a zoological facility. In 1961, the Park became part of the San Bernardino County Big Bear Valley Recreation and Park District. Today, Moonridge Animal Park is home to more than 150 birds and animals representing 85 species. Notably, Moonridge Animal Park is distinguished as the only zoological facility in the United States located in an alpine/sub-alpine environment

Details of the Moonridge Zoo can be found at <http://www.moonridgezoo.org>



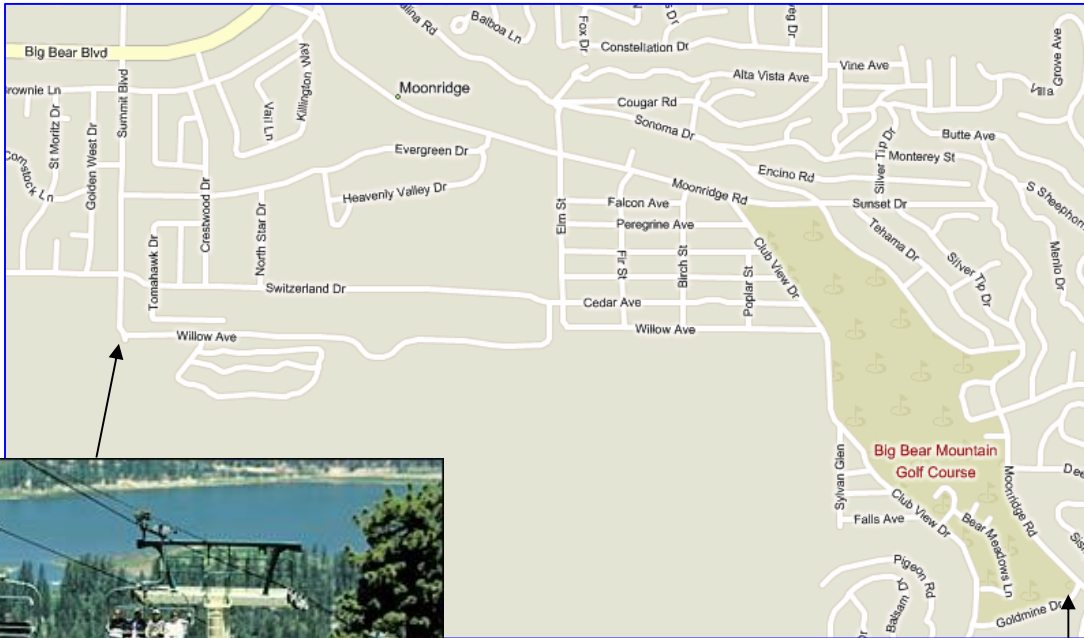
# VENUE SITE MAPS

## Moonridge Animal Park

Big Bear Valley in the San Bernardino Mountains



Future location of the Moonridge Animal Park



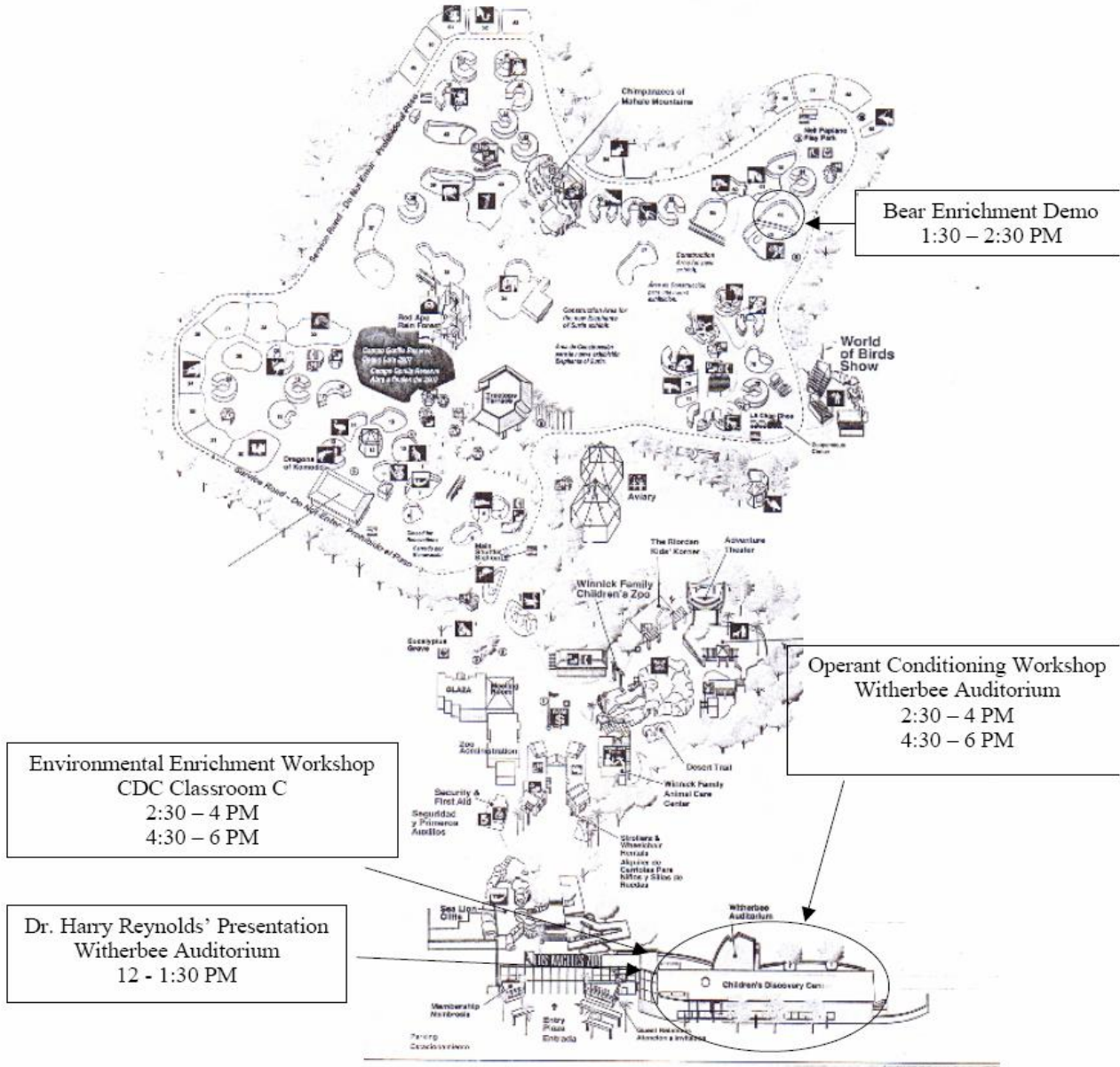
Summit Ski Resort - the Arrow Points to bus drop off/pick up on Summit Blvd



Moonridge Animal Park—the Arrow Points to bus drop off/pick up On Goldmine Drive

# BIERZS 2007

## Los Angeles Zoo



# BIERZS 2007

## Venue

Your delegate goody bag contains site maps for our three venues.

- \* Western University of Health Sciences  
College of Veterinary Medicine
- \* Los Angeles Zoo and Botanical Garden
- \* Moonridge Animal Park

## Registration

The Registration Desk is prominently at the Shilo Hotel

Thursday August 23, 2007 5:00-10:00PM

Friday August 24, 2007 7:00-8:30AM

## Name Badges

All delegates will be provided with a name badge upon registration. Please wear it as it acts as your pass to all sessions, functions and transportation. This will help to introduce you to other delegates

## Speaker Presentations

Speakers are asked to report to their *Session Moderator* prior to the session for any last minute instructions. Speakers using computer data projection (PowerPoint) are asked to test their presentations half an hour before the start of the session.

## Poster Sessions

Poster presentations will be displayed on Saturday morning, August 25, 2007. Please arrive at Western University, College of Veterinary Medicine prior to 9:00AM to set up your poster. Staff will be at the site to assist you. Posters will stay up for the duration of the symposium.

## Refreshments

All meals and snacks are provided by BIERZS 2007 sponsors. Please note food is not allowed inside the Los Angeles Zoo auditorium or at the Building Bear Feeders (PVC) and Operant Training workshops.

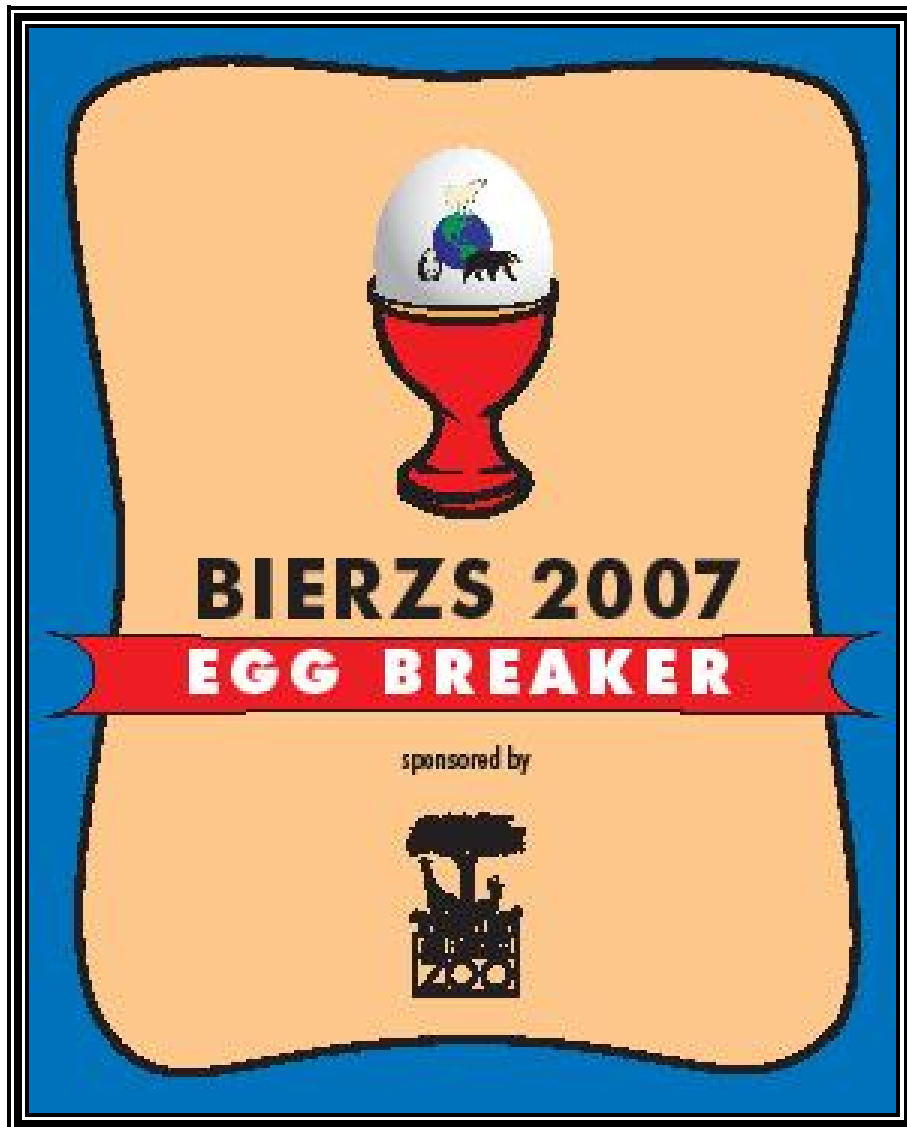
**BIERZS 2007 Volunteer Appreciation**

The following individuals contributed to the successful launch of BIERZS 2007

|                             |                       |
|-----------------------------|-----------------------|
| Dereck Andrade              |                       |
| John Beecham                | David Keliher         |
| Danielle Bays               | Lydia Kolter          |
| Olivier Bonnet              | Lora LaMarca          |
| Debra Bourne                | McCall Lowe           |
| Robert and Carolyn Buchanan | Cherie Mayman         |
| Deb Cano                    | Linda Micke           |
| Scott Carter                | Jennie McNary         |
| Tony Colonnese              | Manuel Mollinedo      |
| Jason Cleanthes             | Jonathan Padilla      |
| Edna Cova                   | Mary Paine            |
| Betsie Davis                | Beth Rich             |
| Mike Dee                    | Kelly Russo           |
| Kim Elmslie                 | Debbie Smith          |
| Curtis Eng                  | Becky Wanner          |
| Rachel Engel                | Debbie (Hoffman) Ward |
| Lydia Fogal                 | Victor Watkins        |
| Christina Goulart           | Leigh Wiemann         |
| Danielle Gutierrez          | Ellen Williams        |
| Azlynn Hare                 | Philip Wilson         |
| Kylise Hare                 | Karen Worley          |
| Lauren Harrell              | Annaluz Wilton        |
| Annika Hoffman              | Jackson Zee           |
| Robert Jenkins              | Andrew Zepfel         |

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# BIERZS 2007



WELCOME TO BIERZS 2007  
Join us in the Cal Poly Room, 2<sup>nd</sup> floor Shilo Hilltop Suites Hotel  
Friday August 24, 2007  
8:30-10:30 am

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## BIERZS 2007



### Thursday August 23 2007 Evening

7:00 - 11:00 Registration at the Shilo Hilltop Suites Hotel

### Friday August 24 2007

7:00 - 8:30 Late Registration at the Shilo Hilltop Suites Hotel

8:30 - 10:30 Welcome to BIERZS 2007  
EGG Breaker at Shilo H. S. Hotel Cal Poly Room  
Sponsors - San Francisco Zoological Gardens

Opening Remarks, Introduce BIERZS 2007 Host  
Jordan Schaul  
BIERZS 2007 Co-Chair

Welcome To Western University of Health Sciences:  
Phil Nelson, Dean, College of Veterinary Medicine  
Shirley Johnston, Founding Dean, College of Veterinary Medicine,

House Keeping  
Else Poulsen  
BIERZS 2007 Co-Chair

Keynote Speaker Introduction  
Else Poulsen  
BIERZS 2007 Co-Chair

#### Keynote Address

China Bear Rescue Centre - Much More Than A Sanctuary  
Jill Robinson, Founder Of Animals Asia  
Sponsor - Animals Asia

### Friday August 24 2007 – continued

10:30 - 12:00 Board Atlantic Express Buses to Los Angeles Zoo

Arrive - Assemble at Los Angeles Zoo

12:00 - 1230 Lunch - Los Angeles Zoo

12:30 - 1:30 All delegates meet at the Witherbee Auditorium (no food allowed  
inside auditorium)

Introduce LA Zoo Welcome Speaker

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## BIERZS 2007

Jordan Schaul  
BIERZS 2007 Co-Chair

Introduce BIERZS 2007 Opening Presentation  
Jordan Schaul  
BIERZS 2007 Co-Chair

**Building Partnerships Among Zoo Professionals, Educators, and  
Wildlife Biologists to Achieve Conservation of the World's Bears**  
Harry Reynolds, President, International Bear Researchers  
Association

1:30 - 2:30 Los Angeles Zoo Staff Behind the Scenes Tours and Demonstrations

2:30 - 4:00 Concurrent Workshop Sessions

**Building Bear Feeders with PVC**  
Location: CDC, Classroom C  
Matt Rich and Valerie Hare  
Shape of Enrichment  
Sponsor - AZA Bear TAG

**Operant Conditioning Workshop**  
Location: Witherbee Auditorium  
Jason Pratte  
Zoo Atlanta

4:00 - 4:30 Snake Break

4:30 - 6:00 Concurrent Workshop Sessions

**Operant Conditioning Workshop**  
Location: Witherbee Auditorium  
Jason Pratte  
Zoo Atlanta

**Building Bear Feeders with PVC**  
Location: CDC, Classroom C  
Matt Rich and Valerie Hare  
Shape of Enrichment  
Sponsor - AZA Bear TAG

6:00 - 8:00 Barbecue Dinner  
Sponsor: Los Angeles Zoo

8:00 - 9:00 Board Atlantic Express Buses for the Shilo Hilltop Suites Hotel

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## CHINA BEAR RESCUE CENTRE - MUCH MORE THAN A SANCTUARY

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Jill Robinson

The Animals Asia Foundation (AAF) is a non-governmental organisation, founded by Jill Robinson MBE, whose primary mission is to end the practice of farming bears for bile extraction in China and Vietnam ([www.animalsasia.org](http://www.animalsasia.org)).

Since opening a Rescue Centre for previously caged and farmed bears in October 2000 in Chengdu, China, Animals Asia personnel have spent thousands of hours performing surgeries, collating evidence from over 200 victims of bile extraction and developing the Sanctuary as an educational platform from which to promote the goal of ending bear farming in China.

Jill's presentation will discuss who is helped on-site in addition to the bears themselves, what we are learning and how we are using the information. It will also examine our core message and how we are helping this species on a number of levels. Ultimately, the Sanctuary is spearheading a compelling argument for ending bear farming, which is based upon the ethical and humane considerations of animals confined and compromised in both physical and mental health for a substance that is both cheap and easy to replace.

### BIOGRAPHICAL NOTES

Born in the UK, Jill Robinson arrived in Hong Kong in 1985 and spent the next 12 years working in Asia as a Consultant for the International Fund for Animal Welfare. Repeatedly faced with scenes of widespread animal cruelty, Jill decided to introduce the concept of 'animal welfare through people welfare' and founded "Dog" in Hong Kong in 1991 - the first animal therapy programme of its kind in Asia. Today, over 300 dogs and their dedicated volunteers make regular visits to hospitals, disabled centres, schools and elderly homes in 6 countries across Asia, spreading warmth and love to people in need, whilst promoting companion animals as our friends and helpers. In 1993 a chance visit to a bear farm in southern China changed Jill's life. Exposing the plight of endangered Asiatic Black Bears cruelly farmed, and milked, for their bile, and learning how easily bear bile could be replaced by herbs and synthetics, Jill embarked on a promise to end the practice once and for all. In 1998 she founded the Animals Asia Foundation and in July 2000 she and the Animals Asia team signed an historic agreement with the Chinese authorities which would rescue 500 farmed bears and work towards the final elimination of bear farming.

Today, the "China Bear Rescue" has seen the rescue of over 200 bears in China and the start of a new rescue centre for 200 farmed bears in Vietnam. Animals Asia's Bear Sanctuary programmes are spearheading far-reaching community, education and welfare programmes which benefit animals and people alike.

Jill is a former member of the Hong Kong government "Animal Welfare Advisory Group" and Honorary Advisor to the Ocean Park Conservation Website: [www.ahs.uwaterloo.ca/~eagles/](http://www.ahs.uwaterloo.ca/~eagles/)

For details of projects and publications

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Email: [jrobinson@animalsasia.org](mailto:jrobinson@animalsasia.org)

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### BUILDING PARTNERSHIPS AMONG ZOO PROFESSIONALS, EDUCATORS, AND WILDLIFE BIOLOGISTS TO ACHIEVE CONSERVATION OF THE WORLD'S BEARS

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Harry Reynolds

With few exceptions, bear populations around the world are declining as the effects of human population growth and exploitation of resources are increasing. Polar bears are threatened with the effects of global warming, sun bears face rampant logging in the forests they depend upon, and long-term drought may spell the end of the few Gobi bear persisting in southwestern Mongolia. While researchers and managers may conduct *in situ* studies designed to determine factors that may put bear populations at risk of decline or extinction, more than scientific data is required to develop successful conservation strategies. Physiological and behavioral studies that can best be accomplished with captive animals can provide insights into bear biology that are crucial for survival. However, continued and long-term success for bear conservation is most dependent upon public interest in and support for efforts to assure that bears remain integral parts of wild ecosystems. While researchers and educators by themselves may reach audiences of hundreds or thousands of the public who are the ultimate decision-makers in society, hundreds of thousands if not millions of people come to captive facilities because they are interested in animals. If many of the bear populations that are at risk today are to survive the next hundred years, it will be because of coordination of effort and building of close professional relationships among zoo professionals, educators, and wildlife biologists. The end result of such an improved partnership has the potential not only to improve understanding of bears within each discipline, but may best serve the most important goal of all - to conserve and enhance bear populations and the habitat that supports them for future generations.

#### BIOGRAPHICAL NOTES

Harry Reynolds first began working on research and conservation of bears as a high school student in 1959. He grew up in Yellowstone Park, the son of a ranger. When John and Frank Craighead began their ground-breaking studies of grizzlies in Yellowstone, Harry volunteered to help. After high school, he enrolled in the wildlife biology program at the University of Montana and received both his BS and MS there. He continued to work on the Yellowstone grizzly bear study as well as with other wildlife species including golden eagles, black bears, elk, and mountain lions. In 1972, he left the mountain west and moved to Alaska, where he continued to work as a bear research and management biologist. Research emphasis included factors of production, mortality and survival, movement patterns, fidelity to home range, and potential impacts of resource development on bear ecology. During his career, he has captured and handled over 1500 bears in the wild and followed many of them using radiotelemetry. He helped with conservation efforts of Andean bears in Peru, and since his retirement from the Alaska Department of Fish and Game in 2005, has worked with a team of Mongolian scientists and managers to develop strategies to save the critically endangered Gobi bear. They have followed 4 of the 20 - 50 that remain in the Gobi Desert to learn more of habitat requirements and causes of the bear's decline. He has been a member of the International Association of Bear Research and Management (IBA) since 1973, held a number of elective offices and has served as president since 2001. He remains intensely dedicated to furthering public support of conservation of bears in all venues: science-based education, research, and management in wild and captive venues.

For details of projects and publications

Mailing Address: Reynolds Alaska Wildlife Institute. PO Box 80843, Fairbanks, AK 99708, USA,  
Phone: 907-479-05169  
Email: [hreynolds@reynoldsalaska.com](mailto:hreynolds@reynoldsalaska.com)

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## BUILDING BEAR FEEDERS WITH PVC WORKSHOP

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### Matt Rich and Valerie Hare

This workshop is designed to familiarize the attendees with the basics in selecting and working with PVC (polyvinyl chloride) tubes. Why PVC? A common construction material, PVC is readily available in most parts of the world. However, the sizes and thicknesses available are not always sufficient to withstand our bears' destructive habits. Cracked and broken PVC can cause serious injuries and care must be taken to prevent this. Various PVC sizes and pieces will be available at the workshop to demonstrate several tried-and-true feeding devices. Each feeder is appropriate for one or more species of bear and all eight species will be included. During this workshop, each attendee will complete production of a PVC bear feeder of their own. The attendees are welcome to keep these feeders for use and/or models in their institutions.

### BIOGRAPHICAL NOTES

#### Valerie J. Hare

- Co-founder, The Shape of Enrichment, Inc.
- Enrichment Workshop Coordinator & instructor
- Enrichment Consultant (giant panda, polar, brown, spec, sun bears)
- Giant Panda Behavior Research Technician
- International Conference on Environmental Enrichment (ICEE) Committee
- Co-editor ICEE proceedings
- Enrichment articles published in ICEE proceedings, Zoo Biology, The Shape of Enrichment, AZA proceedings
- Presentations on enrichment include zoo and/or enrichment meetings in Brazil, South Africa, Australia, Singapore, Hong Kong, China, Philippines, Scotland, Denmark, Austria, and USA

#### Matt Rich

- Degree in Construction Technology
- Journeyman-level Plumber
- 15+ years' experience in construction and remodeling bear enclosures
- 15+ years' experience building bear enrichment devices
- Enrichment workshop instructor (construction safety, tools, and materials)
- Chair, Shape of Enrichment Construction Advisory Group

For details of projects and publications

#### Valerie Hare

Mailing Address: The Shape of Enrichment, Inc., 1650 Minden Drive, San Diego, CA 92111

Phone: 858-279-4273

Email: [hare@enrichment.org](mailto:hare@enrichment.org)

#### Matt Rich

Mailing Address: The Shape of Enrichment, Inc., 1650 Minden Drive, San Diego, CA 92111

Phone: 619-527-2820

Email: [mrich@enrichment.org](mailto:mrich@enrichment.org)

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## OPERANT CONDITIONING WORKSHOP

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### Jay Pratte

Bears are an incredibly complex and intelligent species, constantly adapting to and learning from their environment. Bears in captivity and rehabilitation facilities learn from humans, daily, intentionally and otherwise. Presented for attendees is applicable terminology for operant conditioning, along with the basics of initiating and/or maintaining a training program. Issues specific to captive bear management will be discussed, along with problem solving techniques, and attendees will be invited to share some case studies. Particular challenges and uses of training for rehabilitation situations will also be discussed, focusing on the needs of injured and releasable animals.

### BIOGRAPHICAL NOTES

- 15 years experience in zoos and animal training
- Specialized in carnivores; worked with all 8 extant species of bears
- Trained animals for movie and film
- Focus on operant conditioning for captive and medical management
- Taught staff and animals at Chengdu Research Base of Giant Panda Breeding in 2005; aided in initiating a long-term training program
- Training consultant for other animal areas in Zoo Atlanta, and bears in facilities around and throughout North America

For details of projects and publications

Mailing Address: Zoo Atlanta, 1518 Ezra Church Drive, Atlanta, GA 30314

Phone: 404-624-5873

Email: [jpratte@zooatlanta.org](mailto:jpratte@zooatlanta.org)

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## Saturday August 25 2007

- 7:00 - 8:45 Breakfast Available at Shilo Hilltop Suites Hotel
- 7:00 - 8:45 Late Registration at Shilo Hilltop Suites Hotel
- 7:20 - 8:40 Shuttle Buses From Shilo H. S. Hotel To Western University of Health Sciences (Meet Shuttle Bus at Hotel Entrance)  
Departing Schedule- 7:20, 7:40, 8:00, 8:20, 8:40 AM  
*Guides will escort delegates to the session location.*  
Session Location: Lecture Hall West, Health Sciences Center
- 9:00 - 9:15 Housekeeping  
Else Poulsen  
BIERZS 2007 Co-Chair
- Welcome to Western University of Health Sciences  
Phil Nelson and Shirley Johnston  
College of Veterinary Medicine  
Western University of Health Sciences
- 9:15 - 12:00 **Paper Session Bear Living I: Preventive Medicine**  
Moderator: Jordan Schaul  
Questions and Answers: Janis Joslin, DVM WUHS
- 9:15 - 9:30 **To Care For Bear: A Preventive Medicine Approach**  
Albert H. Lewandowski, Chief of Veterinary Services  
Cleveland Metroparks Zoo
- 9:30 - 9:45 **Basic Health Care for Bears**  
Brigitte Mercier, Veterinarian  
Cheyenne Mountain Zoo
- 9:45 - 10:00 **To Immobilize or Not to Immobilize: What to Consider**  
Curtis Eng, Chief Veterinarian  
Los Angeles Zoo
- 10:00 - 10:30 Snack Break/Poster Session  
Sponsor - Pet AG
- 10:30 - 10:45 **Infant Hand Rearing Ursid Serum IgG Supplementation Protocol**  
Gail Hedberg, Senior Veterinary Technician  
San Francisco Zoological Garden
- 10:45 - 11:00 **Roundworm Infections in Captive Bears**  
Jordan Schaul  
Western University of Health Sciences
-

## BIERZS 2007

### Saturday August 25 2007 – continued

- 11:00 - 11:15 Salmon Poisoning Disease - Not Just a Problem in the Pacific Northwest  
Jackie Gai, Veterinarian  
Zoo & Exotic Animal Medicine and Consultation
- 11:15 - 11:30 Break/Poster Session
- 11:30 - 11:45 Health Management of Bears - Assisted by Information  
Debra Bourne, Veterinarian  
Wildlife Information Network
- 12:00 Board Atlantic Express Buses to Moonridge Animal Park  
  
Box Lunch in Transit  
Sponsor - Polar Bears International
- 1:30 - 2:00 Arrive at Moonridge Animal Park
- 2:00 - 3:00 Tour and Snack Break  
Sponsor - Friends of the Moonridge Animal Park
- 3:00 - 3:15 Take Buses to ski resort
- 3:15 - 3:45 Take Snow Summit Ski Resort Lift to Summit Facility  
Sponsor - Friends of the Moonridge Animal Park
- 3:45 - 4:00 Get Situated in Hall  
  
Welcome to Moonridge Animal Park  
Bill Treadwell, VP Friends of Moonridge
- 4:00 - 5:45 Paper Session-Bear Behavior  
Gail Hedberg: Moderator
- 4:00 - 4:15 Moonridge Zoo Bears and Release of Fire Burned Bears  
Don Richardson, General Curator  
Moonridge Animal Park
-

## BIERZS 2007

### Saturday August 25 2007 - continued

- 4:15 - 4:30 Behavior-Based Bear Introductions - Working with a Bear's Expectations  
Else Poulsen  
Behavioral & Environmental Solutions
- 4:30 - 4:45 Practical Applications of Behavior-Based Bear Introductions  
Christine Stevenson
- 4:45 - 5:00 Social Rehabilitation of a Rescued Circus Polar Bear Including Behavior-Based Introductions, Opportunities for Choice, and Behavioral Enrichment and Training Protocols  
Betsie Davis Meister, Animal Care Supervisor  
Detroit Zoological Institute
- 5:00 - 5:15 Hand Raising Captive Sloth Bear Cubs  
Attur S. Arun (Bannerghatta Bear Sanctuary)  
Kajal K. Kumar (Agra Bear Rescue Facility)  
Selvaraj Illayaraja (Agra Bear Rescue Facility)  
Vimal Selvaraj (Bannerghatta Biological Park, Baker Institute for Animal Health)
- 5:15 - 5:30 San Francisco Zoo Grizzly Bear Enclosure Built for Bear Behavior  
Tony Colonnese, Senior Zookeeper  
San Francisco Zoological Gardens
- 5:30 - 5:45 Giant Pandas and Research: Spatial Memory Recall and Training Methods  
Jason Pratte, Giant Panda/Carnivore Keeper III  
Zoo Atlanta
- 6:15 - 7:00 Steak Barbecue Dinner on Snow Summit  
Sponsor - Friends of the Moonridge Zoo and BIERZS 2007
- 7:30 Board Atlantic Express Buses for the Shilo Hilltop Suites Hotel
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## TO CARE FOR BEAR: A PREVENTATIVE MEDICINE APPROACH

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Albert H. Lewandowski

While bears are hardy individuals and easy to maintain in captivity, familiarity with basic principles, and the development of a good preventive medicine program will improve their longevity and quality of life. Bears are largely free of family specific bacterial, fungal and viral diseases, and vaccines are not generally recommended. Gastroenteritis due to dietary indiscretion is much more common and supportive treatment may be warranted. Parasitic diseases, particularly ascarids, are more problematic, and dermatitis due to mites, lice, or fleas has been encountered. Dental problems, especially fracture of the canine teeth, are a common occurrence. Bite wounds, lacerations, and other traumatic injuries are reasons for surgical intervention. Neoplasms, often hepatobiliary in origin, occur in older animals, as does arthritis and other "age related" conditions. Balanced nutrition and proper housing contribute to the health and well being of these unique creatures and need to be an integral part of their overall care.

### BIOGRAPHICAL NOTES

- 1978 Graduate of the Ohio State University College of Veterinary Medicine
- Residency in Zoo Animal Medicine at the Philadelphia Zoo and the University of Pennsylvania (1981-1983)
- Director of Animal Health & Nutrition for the Detroit Zoological Parks (1983-1989)
- Head of Veterinary Services, Cleveland Metroparks Zoo (1989-present)
- The David W. Steffee Chair of Veterinary Medicine (2005-present)
- Have worked with all species of bears, including a colony of 13 Polar bears at the Detroit Zoological Parks.
- Currently oversee the veterinary care for 5 bear species at Cleveland Metroparks Zoo, which has bred every species of bear held except sun bears.
- Consultant to the USDA regarding animal welfare issues and the Ohio Dept of Natural Resources in bear and other wildlife related problems.

For details of projects and publications

Mailing Address: Cleveland Metroparks Zoo, 4200 Wildlife Way, Cleveland, OH 44109  
Phone: 216.661. 6500 x2525, x3360  
Email: [ahl@clevelandmetroparks.com](mailto:ahl@clevelandmetroparks.com)

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## BASIC HEALTH CARE FOR BEARS

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Brigitte Mercier

A healthy bear maintains normal body weight, level of activity and behavior. A significant change in any of these is a warning sign. A preventive health program should thus be implemented in each facility that houses bears. Such a program includes proper diet, preventative medication and a basic bear check-up performed on a regular basis. That check-up varies daily, monthly, annually and according to the different life stages of the animal, with a particular emphasis on gait, dentition, parasite detection and dermatology issues. The implementation of a preventive program can detect early signs of disease and prolong the quality and longevity of a bear's life.

### BIOGRAPHICAL NOTES

- Was a licensed physical therapist for 9 years prior to becoming a veterinarian;
- Obtained her DVM from Université de Montréal in 2003, with a concentration in zoological and wildlife medicine;
- Practiced as a wildlife rehabilitator in British Columbia (Canada), as well as a staff veterinarian at the Québec Zoo & Aquarium (Canada) and at the Granby Zoo (Canada);
- Now head veterinarian at Cheyenne Mountain Zoo (Colorado, USA);
- Veterinary advisor (on a volunteer basis) for the Alberta Large Carnivore Rescue Centre;
- Particular interest in nutrition: member of the executive committee of the Nutrition Advisory and Research Group of the Canadian Association of Zoos and Aquariums, collaborated on polar bear nutrition projects;
- Publications in anesthesia and analgesia.

For details of projects and publications

Mailing Address: Cheyenne Mountain Zoo, 4250 Cheyenne Mountain Zoo Road, Colorado Springs, CO 80906

Phone: (719) 633-9925

Email: [brimercier@hotmail.com](mailto:brimercier@hotmail.com)

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## TO IMMOBILIZE OR NOT TO IMMOBILIZE: WHAT TO CONSIDER

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Curtis Eng

The immobilization of bears should, as with any species, be a carefully planned and executed procedure with a defined purpose. Before immobilizing any animal, much consideration must be made weighing the pros of what is gained by immobilizing the animal versus the con or risk of anesthesia. Some acceptable reasons include preventive health examinations, performing diagnostic workups on a sick animal, scientific research, translocation, safety of the public in the case of a wild bear, or capturing of an escaped bear at a zoo or sanctuary.

While bears pose no unusual risks associated with anesthesia as compared to other species, careful monitoring is always a necessity. At a very minimum, the bear's heart rate and respirations should be continually monitored during the procedure. If possible, checking CRT, temperature and anesthetic depth should also be considered. When available, other monitoring devices can be utilized such as stethoscope, pulse oxymetry, EKG, capnography, indirect and direct blood pressure and so forth. No matter how many times you've immobilized an animal, it is vital that the veterinarian and staff be prepared for anesthetic emergencies.

There are a variety of drug combinations being used on bears nowadays. All of them have their pluses and minuses. While there are some optimal characteristics that veterinarians strive for, there is no perfect drug currently out there. That is why many veterinarians use cocktails or combinations of drugs to obtain the near-perfect result. The drug or drugs used depends on what the desired result is (varies with the purpose of the immobilization) and your veterinarian's comfort level with each drug.

In the end, it all comes down to preparation and being prepared for the unexpected.

### BIOGRAPHICAL NOTES

Eng graduated from Purdue University receiving both his Bachelors and DVM from this institution. He took a position at a Small Animal/Exotic private practice in Northern Indiana where he quickly earned a reputation as a veterinarian willing to see any animal that moved. Unfortunately in that area, there were quite a few owners of very exotic animals including big cats, otters, primates, bears, emu, and venomous reptiles, to name a few. While working in private practice, he volunteered weekly at the Lincoln Park Zoo in Chicago for 6 years, learning the art of zoo medicine. He finally gained a part time position at this zoo. From there, he moved on to a small zoo in South Bend, Indiana - the Potawatomi Zoo - where he served as both Staff Veterinarian and Assistant Director. After spending 5 years there, he moved to Phoenix to become the Phoenix Zoo's new Chief Veterinarian. He left the Phoenix Zoo to re-enter private practice and become the Attending Veterinarian at the Primate Foundation of Arizona. Realizing he loved the zoo field too much, he returned to zoos, accepting the position of Chief Veterinarian at the Los Angeles Zoo and Botanical Gardens where he has been for over a year. Throughout his professional career, he has had the privilege of working with a variety of bears at all of the institutions that he has served.

For details of projects and publications

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## INFANT URSID SERUM IgG SUPPLEMENTATION PROTOCOL

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Gail Hedberg

All placental mammals depend on adequate transfer of immunity from the mother, in addition to gradually developing their own immunological competence over many weeks-months, to respond to bacterial and viral pathogens. Studies have shown that many domestic neonates do not have adequate levels of immunoglobulin (IgG) immediately after birth, and must acquire passive transfer of immunity via ingestion of colostrum. Even when suckling occurs, one cannot assume that adequate passive transfer has definitely occurred, as many issues can interfere with adequate passive transfer. A few recent studies have proven the efficacy of using maternal serum subcutaneously (SQ) and/or orally (PO) during the first few hours, to substitute for colostrum in puppies and in kittens. Although previous papers indicated that immunoglobulins were absorbed from the intestinal mucosa for 24-36 hours, these more recent papers indicate that the time period is much shorter (12-15 hours in puppies, 12-16 hours in kittens, unknown in ursids. After this time, only the subcutaneous route is effective in raising the systemic level of IgG. 7.5-15 ml/100 g divided TID (Oral immunoglobulins, however, still provide valuable local immunity). A review of neonatal ursid mortality, in mother-raised and hand-raised cubs, concluded that there is evidence to believe that bear cubs are born without adequate immunity, that natural (i.e., placental and colostrum) transfer did not occur in some cubs (despite belief that some were nursing and receiving adequate maternal care), and that pre- and post-natal infections caused those deaths.

### BIOGRAPHICAL NOTES

Gail's career and commitment to veterinary medicine has encompassed all types and varieties of animal care. For the past 30 years, she has focused on the specific health care needs of zoo animals. As a registered veterinary technician, Gail's job has included but has not been limited to assisting with anesthesia, surgical nursing, radiography, clinical pathology, pharmacy inventory and various treatments throughout the San Francisco zoo. Her clinical laboratory skills in microbiology and parasitology have provided the foundation for a full spectrum "in-house" lab. She is responsible for the training programs, maintains many preventive health care programs, and is well versed with the daily operations of the zoo hospital and quarantine facility.

As a neonatal care specialist, Gail is a well known international consultant for hand rearing. In the summer of 2004, she was the team leader for the giant panda cub-raising program and facilities for Zoo Atlanta. She supervised, provided protocols for the giant panda neonatal care program. "When people ask what type of animals have you raised?" It is easier to list the animals that she hasn't raised"

Gail has published her work in both peer review journals and has two chapters in the book titled Hand Rearing Wild and Domestic Mammals. Her current research project is evaluating polar bear blood and milk samples from free ranging polar bears of Svalbard, Norway. Her web site [www.zoomom.com](http://www.zoomom.com) has details and descriptions of her various projects.

Hedberg GE, Dunker F, Dierenfeld ES, Petty M. 2006. Polar bear (*Ursus maritimus*) adipose tissue fatty acid composition compared to fatty acid constituents of a common milk replacer. *Zoo Biology* 25(6):11.

Hedberg GE, Dierenfeld ES, Rogers QR. 2007. Taurine and zoo felids: considerations of dietary and biological tissue concentrations. *Zoo Biology* 27(5):15.

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## ROUNDWORM INFECTIONS IN CAPTIVE BEARS

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Jordan Schaul

Parasite infection is considered one of the major health concerns for captive bears. The bear roundworm, *Baylisascaris transfuga*, is particularly prevalent in captive bear populations. If untreated, roundworms have the potential to cause serious disease or death in ursids. *Baylisascaris* spp. may potentially induce larval migrans syndrome in a host of vertebrate species, including zoo animals and humans. To evaluate the efficacy of roundworm control programs in captive facilities, husbandry and health surveys were submitted to zoos, sanctuaries and rehabilitation facilities around the globe. Coprodiagnostic tests were also conducted on samples from captive bears. Data collected from surveys received from 123 facilities along with fecal studies from a sample of the captive bear population indicated species specific susceptibilities to roundworm infection. The data also provided information on parasite control factors, including drug treatments, enclosure type, and sanitation protocols.

### BIOGRAPHICAL NOTES

Jordan Schaul has worked as both a keeper and animal trainer at the Cleveland Metroparks Zoo, the Cleveland Museum of Natural History and the New England Aquarium in Boston, Massachusetts. He received a bachelor's degree in biology and psychology from Skidmore College, where he conducted research on herpetile ecology and marine mammal behavior. He received a master's degree in wildlife ecology from John Carroll University while serving as the Assistant to the Curator of Conservation and Science at the Cleveland Metroparks Zoo. As a graduate student and zoo researcher, he conducted studies on the community and physiological ecology of fishes and amphibians as well as behavioral studies of captive bird and mammal species. Jordan received a PhD in veterinary parasitology from The Ohio State University. He has studied the health status of captive and free-ranging bears, an interest he developed while first working as a zoo keeper. Jordan is currently a veterinary student at Western University, where he serves as Assistant Director of the Laboratory for Wildlife & Environmental Health.

For more details or projects and publications

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### SALMON POISONING DISEASE - NOT JUST A PROBLEM IN THE PACIFIC NORTHWEST

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Jackie Gai

The disease syndrome known as Salmon Poisoning Disease is caused by the ingestion of fish carrying the encysted form of *Nanophyetus salmincola*, a trematode which requires three hosts to complete its life cycle: a snail, a fish, and a fish-eating mammal. *Nanophyetus* is the vector for the rickettsial organism *Neorickettsia helmintheca*, which causes a disease syndrome characterized by lethargy, vomiting, diarrhea, and anorexia. SPD is especially pathogenic in canids, and has caused illness and death in captive bears. Diagnosis of SPD is made when *Nanophyetus* ova are found in feces, and/or rickettsial organisms are identified from lymph node cytology, and the patient has consistent clinical signs. SPD is fatal in up to 90% of untreated domestic dogs. Prompt, aggressive treatment often results in complete recovery.

Hatchery-raised salmonid fish may carry heavier parasitic loads than wild fish. Transplantation of hatchery fish for sport fishing may lead to cases of SPD outside of its endemic range. Veterinarians working in Southern California and other areas where artificially stocked reservoirs exist should be aware of the potential occurrence of SPD syndrome. Caretakers responsible for feeding captive mammals (especially bears and canids) should also be aware of the risks associated with feeding fish.

#### BIOGRAPHICAL NOTES

Jackie Gai has been the veterinarian for the Performing Animal Welfare Society (PAWS) and the Mickey Grove Zoo since 2001. She was also an associate veterinarian at The Oakland Zoo, and provides assistance to local wildlife rehabilitators and select private clients. Gai has served as relief veterinarian for the Sacramento Zoo, Lindsay Wildlife Museum, and has completed veterinary externships at the Oregon Zoo and Marine World/Africa USA.

Gai has a diverse background in caring for captive wildlife. She has been with the Oakland Zoo since 1989 as a docent, volunteer, and zookeeper. A lifelong interest in elephants intensified during her time as an elephant keeper, where she helped hand-raise an African elephant calf. Gai has been actively involved in rehabilitation and release of California native wildlife, including raptors, sea birds, and small mammals.

A graduate of UC Davis, Gai has served on the California Department of Fish and Game's Advisory Committee on the Care and Treatment of Wild Animals, the U.C. Davis Small Animal Advisory Committee, and the American Association of Zoo Veterinarians' Legislative and Animal Welfare Committee.

Gai believes that veterinarians entrusted with the care of captive wildlife have a tremendous and lifelong responsibility. Wild animals are out of place in captivity, and depend on us for their physical health and emotional well-being. Gai feels that providing care to captive wildlife, especially individuals with histories of abuse and neglect, is both an honor and a daily challenge, and that the veterinary profession can do much to help improve conditions for these animals.

For details of projects and publications

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## HEALTH AND MANAGEMENT OF BEARS - ASSISTED BY INFORMATION

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### Debra Bourne

Bears are large, charismatic and hardy carnivores. Unfortunately they come under considerable pressure from humans. Their need for large areas of habitat, often in temperate areas, puts them in conflict with humans who make use of the same habitats. Additionally, they are used for entertainment, including bear baiting and "dancing bears", and body parts, particularly bile but also meat and paws, are prized for their "medicinal" and "strength giving" qualities.

Wildlife Information Network (WIN) has undertaken an ambitious project to provide an integrated information source on bears (*Helarctos*, *Melursus*, *Tremarctos* and *Ursus* spp.). The Wildpro Electronic Encyclopaedia volume "Bears: Health and Management" includes information on their natural history, captive management, diseases, and veterinary treatment, including detailed information on anesthesia and on drug doses for bears. The volume includes flowcharts to assist the user in thinking about captive management and health care. Extensive use of hyperlinks promotes integration of the different sections of this information resource, and all the information is closely referenced. The Encyclopaedia is complemented by a number of texts in the associated Electronic Library, including the complete IUCN Bears Status Survey and Conservation Action Plan, Polar Bear Nutrition Guidelines, Orphaned Bear Cub Rehabilitation guidelines, an Environmental Husbandry Manual and others.

### BIOGRAPHICAL NOTES

Dr Debra Bourne graduated from Cambridge University Veterinary School (UK) in 1992 and completed her PhD on toxoplasmosis and other diseases in the Bennett's wallabies at Whipsnade Wild Animal Park in 1997. Since then she has worked for the not-for-profit organization Wildlife Information Network (WIN) as a Veterinary Editor, developing Wildpro\* Electronic Encyclopedia volumes on wildlife health and management, and emerging infectious diseases. She has considerable experience in non-domestic animal management, is interested in a wide variety of species, particularly marsupials, cranes, lemurs, penguins and waterfowl, and has a particular interest in the relationships between natural history and behavior, captive management, diseases and disease management

For details of projects and publications

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## MOONRIDGE ZOO BEARS AND RELEASE OF FIRE BURNED BEARS

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### Don Richardson

The Moonridge Zoo houses three non-releasable Grizzly and three Black Bears rescued from the Yellowstone region and from California respectively. The zoo also rehabilitated four black bears following the devastating fires in the local mountains during 2003. The paper will provide an introduction to the zoo's existing bears and the potential housing at the new Zoo facility to begin construction in late 2008. In addition, the zoo received four bears for rehabilitation as a result of fire and traffic collisions during the "Old Fire" of 2003. Information on treatment, recovery, and release will be provided.

While still recovering the zoo's collection following evacuation during the 2003 "Old Fire" the zoo received three Fire Burned bears and a Bear hit by a car. Working with the California Department of Fish and Game the bears were successfully treated and returned to the wild over a one-month period.

### BIOGRAPHICAL NOTES

Don Richardson joined the Moonridge Animal Park as curator in December 1993, following 13 years at the Los Angeles Zoo. While serving as a senior keeper at the L.A. Zoo, he was responsible for South American primates, worldwide hoof stock, and the zoo's entire North American animal collection. His professional background includes 23 years of zoo keeping management.

At Moonridge Animal Park, Mr. Richardson has initiated numerous improvements and programs. Music in the Zoo, an evening of animal talks and strolling musicians; and Flashlight Tours, narrated visits with the park's nocturnal inhabitants, are among the activities that Richardson has introduced for the enjoyment and education of park visitors. He has added several new animals during his tenure, including fishers, a rare type of weasel that is rapidly disappearing from its natural home in the alpine forests of the Sierra Nevada. Two snow leopards and three grizzly bears are also among the many notable inhabitants who make their home at Moonridge Animal Park.

Under Mr. Richardson's direction, facilities at Moonridge Animal Park have undergone major renovation and landscaping improvements to benefit animals and humans alike. He has established an on-site medical center to aid in animal care and rehabilitation, along with an Education Center to provide a richer learning experience for park visitors.

For the past 28 years, Mr. Richardson has been active in emergency veterinary care. He is licensed by the State of California as a Registered Veterinary Technician, and holds a Bachelor of Science degree in biology (animal ecology) from California State University, Los Angeles. His chief undergraduate study was taxonomy and systematics.

Mr. Richardson is a member of the American Zoo Association, the American Association of Zoo Keepers, the National Wildlife Federation, the American Institute of Biological Sciences, and has served on the New World Primate Taxon Advisory Group.

For details of projects and publications

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## BEHAVIOR - BASED BEAR INTRODUCTIONS - WORKING WITH A BEARS' EXPECTATIONS

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### Else Poulsen

One of the most stressful and potentially dangerous events that a bear can experience in captivity is the introduction of another bear into his/her living space. In the wild, bears can usually choose to interact (or not) with other bears based on their environmental, familial, or safety concerns but in captivity personal choice decreases causing stressors to increase. Working with a bear's genetic expectations regarding food availability and reproduction can greatly reduce introduction stressors. Introduction success involves developing an introduction plan, utilizing enrichment programming, developing action cues through training/conditioning, utilizing human/animal relationship, and extensive behavioral observation before, during and after introductions. A successful, low-stress introduction has addressed each bear's food and reproduction concerns which work to set the tone for a positive living arrangement between the bears.

### BIOGRAPHICAL NOTES

Else has over 25 years of experience in animal care specializing in large carnivores, particularly bears. She has worked as a zookeeper at the Calgary Zoo and the Detroit Zoo and has consulted for zoos and other animal facilities in Canada, the United States, Indonesia, and Europe. She is acting as a consultant with Behavioral & Environmental Consultants. Else has over 40 publications to her name which includes scientific journals, technical publications, popular journals and newspapers. Currently she is writing a bear behavior book for Greystone Publishing.

For details of projects and publications

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## PRACTICAL APPLICATIONS OF BEHAVIOR-BASED BEAR INTRODUCTIONS- WORKING WITH A BEARS EXPECTATIONS

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Christine Stevenson

We are using a behavior based bear introduction plan to successfully introduce 3.0 two year old bears into the habitat with our 1.2 nineteen year old bears. We worked to meet the food availability and reproductive needs of our adult bears, and our cubs, and by meeting these needs we will successfully introduce all of the bears into the habitat over a period of time. The plan includes an extensive enrichment program for the cubs and adults; training of both cubs and adults; observations; the introduction of the cubs to the habitat without the adult bears present, until they show signs of comfort in the habitat, and have sufficient time to learn about the area; the introduction of the cubs to the adult females at the beginning of the reproductive season; and the introduction of the cubs, females, and adult male all together at the end of the mating season. We are currently in the process of implementing this plan. The cubs are becoming more comfortable with the habitat every time they go into it, and have even started relaxing in the area. Female introductions are following quickly, and the adult male introduction will take place in July. Our goal is to have all six bears on display in the habitat, and we are working closely with our bears to ensure that the whole process reduces the stress that goes with meeting and learning to live with new bears.

### BIOGRAPHICAL NOTES

- Wildlife Safari, Winston, OR, 2004 to present. Work with 2.2 adult black bears free contact, 1.2 adult brown bears protected contact, 0.1 yearling black bear protected contact (working to introduce her to adult population and free contact), and 1.1 yearling brown bears protected contact (working to introduce them into a new, more spacious exhibit). Development, and implementation, of operant conditioning training plan for entire brown bear population. Development of bear enrichment program.
- Shayari, Ecuador, animal care volunteer, January 2007. A community based animal rescue center. Their facility contained Wooley monkeys, tapirs, pacas, black agoutis, macaws, and parrots.
- Andean Bear Project volunteer, December 2006. Project Lead Biologist: Armando Castellanos. Assisted in radio tracking of collared bears, and cutting of trails for new traps to be set.
- Yellowstone Bear World, Rexburg, ID, 2003, raised baby black bears and brown bears free contact, worked with a large adult black bear population free contact; that was also a mixed exhibit with seven wolves. Also worked with yearling and adult brown bears in protected contact.
- Cat Tales Zoological Park, Spokane, WA, 2002, raised baby brown bears.

For details of projects and publications

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### SOCIAL REHABILITATION OF A RESCUED CIRCUS POLAR BEAR INCLUDING BEHAVIOR-BASED INTRODUCTIONS, OPPORTUNITIES FOR CHOICE, AND BEHAVIORAL ENRICHMENT AND TRAINING PROTOCOLS

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Betsie Meister

The rescue and rehabilitation of any bear species can be challenging. Many factors can affect the process used and overall outcome. Some of these include the bear's rearing and social and behavioral history (if known) conditions under which the bear was previously held, physical condition of the bear, and its current mental health status. A successful social rehabilitation outcome requires that the bear be given choice and control over its environment, provision of plenty of varied behavioral and environmental enrichment, development of a husbandry training program and systematic monitoring throughout the process. The Detroit Zoo used this process to integrate and rehabilitate the female Polar bear "Barle", rescued from the Suarez Brothers Circus in 2002, who now demonstrates a complex and full repertoire of behaviors not possible in her previous, impoverished conditions in the circus, including development of species-typical social relationships with other bears, and the successful birth and rearing of a cub.

#### BIOGRAPHICAL NOTES

- Began zoo career at the Detroit Zoological Society in 2000 working with a variety of small and large carnivores providing daily husbandry care, training, and behavioral enrichment.
- Focus on polar bears, brown bears, black bears, seals, and arctic fox began in 2001.
- Obtained Mammal Department Supervisor of the Arctic Ring of Life position in 2006.
- Implemented various protocols for bear training and enrichment, denning females, and social introductions of bears for breeding purposes.
- Coordinator of National Bear Awareness Week at the Detroit Zoo.
- Attended International Conference on Environmental Enrichment 2005

For details of projects and publications

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## HAND RAISING CAPTIVE SLOTH BEAR CUBS

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Attur Shanmugam Arun<sup>1</sup>, Kaja Kumar Jadav<sup>2</sup>, Selvaraj Illayaraja<sup>2</sup>,  
Vimal Selvaraj<sup>1,3</sup>

Through Wildlife SOS (WSOS) anti-poaching busts, WSOS has rescued many cubs before they can be sold on the black market. Once they are rescued, they are shipped to one of the WSOS sloth bear sanctuaries to be raised. WSOS has developed a technique that WSOS has had success with over the last five years. WSOS has successfully raised six cubs in 2003, eight in 2004, nine in 2005, four in 2006 and twelve in 2007 for a total of 39 cubs. Different feeding schedules and procedures were used for different ages and different body weights of the cubs. Antibiotic and antifungal additives were mixed in their feed. WSOS has had great success in raising happy healthy sloth bears through this method. This same method may have application for motherless sloth bear cubs which end up in zoos or other facilities.

### BIOGRAPHICAL NOTES

Arun A Sha is currently the head veterinarian for Wildlife SOS at the Bannerghatta Sloth Bear Rescue Center. He has many years of experience with treating rescued "dancing bears" and with providing ongoing enrichment for the bears at four different sanctuaries. He oversees the rearing of sloth bear cubs that are seized from anti-poaching raids. Sha is also involved with treating and re-releasing injured moon bears in the foothills of northern India and works closely with forest officials on bear conservation issues.

For details of projects and publications

<sup>1</sup> Bannerghatta Bear Rescue Center, Bannerghatta Biological Park, Bannerghatta, Bangalore- 560 058, Karnataka, India.

<sup>2</sup> Center for the Conservation and Rehabilitation of Bears, Agra Bear Rescue Facility, Sur Sarovar Bird Sanctuary, Keetham, Agra - 282 007, Uttar Pradesh, India.

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## SAN FRANCISCO ZOO GRIZZLY BEAR ENCLOSURE

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### Tony Colonese

Grizzly Gulch, a modern bear exhibit costing \$4 million, displays two rescued Montana grizzlies. Orphaned yearlings of a depredating mother, the cubs were dramatically saved from euthanasia after a failed rehabilitation. Arriving in San Francisco in October 2004, the sisters were first residents of a new quarantine facility. Cleared to exhibition, the yearlings were initially housed in an old Hagenbach-style moated exhibit. But fundraising and design for a modern exhibit began immediately, climaxing in opening Grizzly Gulch in June 2007. Utilizing electric restraints, the new exhibit increases daytime exhibit space by 1500 percent, while retaining access to the old exhibit for secure night-time holding. Features include glass viewing pavilions allowing close observation of enlarged foraging areas planted with native plant species, underwater viewing of the bears in a stream containing live trout, and a spy rock mound from which the grizzlies can look out and be seen from most of the zoo. Innovative educational features include graphics explaining the grizzly's biology, conservation status in the intermountain American West, the historic significance of grizzlies in California and at the Zoo, and description of grizzlies' senses of smell and hearing utilizing a resin skull as a less controversial biofact. Protocols establish procedures for enrichment and interaction between public, staff, and bears. Grizzly Gulch provides a close encounter with an icon of the American West, California's State Mammal, as portrayed on the State's California Bear Republic Flag.

### BIOGRAPHICAL NOTES

- Bear keeper San Francisco Zoo 1971-1983, all species except pandas. Bred polar, Kodiak, grizzly, and American black bears.
- Senior keeper, Carnivore supervisor 1983-present.
- Projects: Supervised giant panda exhibit, 1984. Contracted to advise and ship bamboo transcontinental for Toronto Zoo panda expo, 1985. Contributed to design of Seattle and San Francisco grizzly exhibits, Phoenix spectacled bear exhibit. Established breeding colonies of Magellanic penguins and koalas, San Francisco Zoo. Contributed to giant panda husbandry manual. Helped develop bear-proof containers for National Park hikers.
- Publications: "Cultivating Polar Bears", San Francisco Zoo Views, 1985.
- "Managing Asian Bears, longevity record for Himalayan Black Bear and disocia mortality in a female sloth bear" (Unpublished, accepted for 1<sup>st</sup> Asiatic Bear Conference, not given due to Tiananmen Square.)
- Memberships: IBA member 1980-present. Founding member IUCN Spectacled Bear and Asiatic Bear Specialists groups (1980). Member Bear Specialist Group 1984-1990. Censused captive bear populations in Europe and North America. Helped with Spectacled Bear Education project for Andes countries. Life member, American Society of Mammalogists, 1976.
- Education: B.A. in Zoology, UC Berkeley 1977. Senior thesis: "Conservation Issues for Alaskan Polar Bear Populations."
- Miscellaneous: Awarded Mayor's Medal of Valor for rescuing San Francisco Zoo keeper from leopard attack, 1990. Married, Patricia, Grants Officer, U.S. Department of Health and Human Services. Daughter, Francesca, undergraduate at Caltech (astrophysics).

For details of projects and publications

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## GIANT PANDAS AND RESEARCH: SPATIAL MEMORY RECALL AND TRAINING METHODS

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### Jason Pratte

Zoo Atlanta is heavily involved in numerous research projects, both within our own facility and globally. These encompass several species, the three most prominent of which are the giant pandas, gorillas, and orangutans. Much of the research done requires some degree of keeper involvement. Two of the studies conducted by the giant panda department in the past few years have involved training the subjects to respond to and interact with devices designed for specific testing. The first study outlined is completed and published, having tested Zoo Atlanta's male and female giant pandas' hue discrimination abilities. The study results, as well as training and husbandry challenges are discussed.

The second, current study examines *spatial memory recall*, or the ability to remember location without using cues from the environment. Spatial memory is the ability to remember a particular location. In addition to utilizing sensory input, it is one way an animal might navigate its environment successfully by helping an animal locate food, mating partners, den sites, and even avoid predators. This groundbreaking research is critical to developing a complete understanding of giant panda cognition and memory, specifically the ability to recall spatial location. The pandas were taught to interact with a six-square light box, and to respond in the fashion of the human "Memory" game. Training and husbandry challenges are discussed, as well as the results and relevance to daily care.

### BIOGRAPHICAL NOTES

- 15 years experience in zoos and animal training.
- Specialized in carnivores; worked with all 8 extant species of bears.
- Trained animals for movie and film.
- Focus on operant conditioning for captive and medical management.
- Taught staff and animals at Chengdu Research Base of Giant Panda Breeding in 2005; aided in initiating a long-term training program.
- Training consultant for other animal areas in Zoo Atlanta, and peers in facilities around throughout North America

For details of projects and publications

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**Sunday August 26 2007**

- 7:00 - 8:30 Breakfast Available at Shilo Hilltop Suites Hotel  
Shilo H. S. Hotel Shuttle Bus to Western University of Health Sciences  
Sessions Location: Lecture Hall West, Health Sciences Center
- 9:00 Housekeeping  
Else Poulsen  
BIERZS 2007 Co-Chair
- 9:15 - 9:30 Paper Session-Bear Living II, Husbandry  
Moderator: Jackson Zee  
Sponsor - World Society for the Protection of Animals (WSPA)
- 9:30 - 9:45 Important Components of Rehabilitation and Release Programs for Orphan Bear Cubs  
John Beecham, Senior Wildlife Research Scientist
- 9:45 - 10:00 The Release and Monitoring of Orphan Bear Cubs  
John Beecham, Senior Wildlife Research Scientist
- 10:00 - 10:30 Snack Break/Poster Session  
Sponsor - Carrie McIntyre
- 10:30 - 10:45 Baiting and Sanctuary Maintenance of Bears in Pakistan: A Status Report  
Fakhar-I-Abbas  
Pakistan Bear Sanctuary Director
- 10:45 - 11:00 Health Issues in Sloth Bears in India Sanctuaries, Gigantiform Cementoma and Unilateral Scrotal Hernias  
Attur S. Arun Kajal K. Kumar Selvaraj Illayaraja  
Agra Bear Rescue Facility  
Vimal Selvaraj
- 11:00 - 11:15 Queens Zoo Andean Bear Program A Diverse and Expanding Captive Management Program  
David Morales  
Queens Zoo Senior Keeper
- 11:15 - 11:45 Break/Poster Session  
WSPA Sponsor
- 11:45 - 12:00 The Bear Tag: What is It?  
Cathy Keyes  
Oakland Zoo
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## BIERZS 2007

### Sunday August 26, 2007 - Continued

- 12:00 - 12:15      Polar Bear Hearing Study: Training the Behavior "What Do You Hear?"  
Joanne Simerson  
San Diego Zoo Collections Husbandry Science
- 12:15 - 12:30      Engaged Employees and Volunteers Provide the Best Stewardship  
Judy Willard, Corporate Human Resources Vice President  
Barton Malow Company
- Closing Remarks  
Else Poulsen and Jordan Schaul  
BIERZS 2007
- 12:30 - 2:30      BIERZS 2007 Farewell Lunch  
Location: Student Lounge, Health Professions Center  
Sponsor: World Society for the Protection of Animals  
                         AND  
**Animal Photography and Art Market**  
Location: Tsan-Yung Star Atrium, Health Professional's Building
- 2:30 - 3:30      Shilo H. S. Hotel Shuttle Buses to Shilo Hilltop Suites Hotel
- 3:30                Shilo H. S. Hotel Shuttle Buses to Ontario International Airport  
Note: Each delegate must make own airport shuttle arrangements  
with the Shilo H. S. Hotel
- Session Location: Lecture Hall West, Health Sciences Center
- 2:30 - 4:00      Paper Session-Bear Enrichment and Operant Conditioning  
Moderator: Valerie Hare, Shape of Enrichment,  
Jason Pratte, Zoo Atlanta
- 2:30 - 2:45      Enrichment and Training Planning  
Valerie Hare and Beth Rich  
The Shape of Enrichment
- 2:45 - 3:00      Modifying Old Style Bear Grotto Enclosures for Welfare  
Enhancement  
Matthew Rich, Beth Rich  
Zoological Society of San Diego
- 3:00 - 3:15      Making the Most of Bear Enrichment  
Beth Rich  
Racine Zoo Animal Care Supervisor
-

## BIERZS 2007

### Sunday August 26, 2007 - Continued

- 3:15 - 3:30      Bear Rehabilitation and Enrichment at the IFAW Pan-Yu Sanctuary  
Jackson Zee  
International Fund for Animal Welfare
- 3:30 - 3:45      Teaching Operant Conditioning Methods and Training Program  
Management in China  
Jason Pratte  
Zoo Atlanta
- 3:45 - 4:00      Crossing Bearicades: How Enriching Captive Bears Can Help  
Conserve a Species  
Susan Shepard  
Houston Zoo Inc.
- 4:00 - 4:30      Shilo H. S. Hotel Shuttle to Shilo Hilltop Suites Hotel
- 6:00 - 8:00      Planning meeting for any interested delegates and current planning  
team regarding future BIERZS conferences  
Shilo H.S. restaurant
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## **BIERZS 2007 Poster Sessions Presentations**

Investigating Hormonal Correlates of Seasonal Stereotypic Swimming in a Male Alaska Brown Bear  
Christy Mazrimas-Ott

Management of Chronic Hair Loss - Dermatitis in a Female Spectacled Bear (*Tremarctos ornatus*)  
Deb Cano, Zookeeper  
San Francisco Zoological Society

Bears in the Shape of Enrichment Workshops  
Beth Rich and Valerie Hare  
Shape of Enrichment

From Cage to Consumer: WSPAs Investigation into the Global Trade in Bear Parts  
Danielle Bays  
The World Society for the Protection of Animals Program Officer

Frustrations for Wildlife Rehabilitators with California Black Bears with Life Threatening Diseases  
Diane Dragotto Williams  
Wildhaven Ranch Executive Director and Wildlife Rehabilitator

An Enlarged Exhibit and a Progressive Enrichment Program - Positive Effects for Spectacled Bears (*Tremarctos ornatus*) at the Phoenix Zoo  
Christina Goulart  
Phoenix Zoo Zookeeper

## **Vendors**

Alice Ng - Animals Asia

Animal Photography and Art Market Vendors

Ultrasound Equipment Demonstration - Jimmy Spraker  
- Direct Medical Systems

Candles and T's - Gail Hedberg - Fundraising for BIERZS 2009

Bear Paintings - Amy Vandermolen - Folsom Zoo Sanctuary

Gifts, Bear Photography - Diane Dragotto Williams - Wildhaven Ranch

Gifts - Alice Ng - Animal Asia

Bear Health Management CD-ROM- Debra Bourne  
- Wildlife Information Network

## IMPORTANT COMPONENTS OF REHABILITATION AND RELEASE PROGRAMS FOR ORPHAN BEAR CUBS

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John Beecham, Valentin Pazhetnov, Mila Danilova, Sergey Pazhetnov, Anand Ramanthan

Biologists in the United States and Canada have been involved in releasing orphaned black bear cubs into occupied bear habitat in North America for more than 3 decades. More recently, biologists in several European, Asian, and South American countries have also experimented with releasing brown bears, Asiatic black bears (*U. thibetanus*), sun bears (*Helarctos malayanus*), Giant Pandas (*Ailuropoda melanoleuca*) and Andean bears (*Tremarctos ornatus*). However, much of the information on survival and behavior of released cubs is anecdotal and has not been thoroughly reviewed to assess their conservation implications. During the spring of 2007, scientists and bear rehabilitators with experience raising, releasing and monitoring the survival of orphan bear cubs gathered in the Tver Region of Russia for a workshop to document approaches used in orphan bear cub rehabilitation and release programs and to ascertain the critical components of a bear rehabilitation program that have contributed to the successful release of orphaned bears cubs. In this presentation, we will discuss important components of rehabilitation programs that were identified during the workshop.

### BIOGRAPHICAL NOTES

John worked for the Idaho Department of Fish and Game for over 29 years, including 12 years conducting research on black bears. John designed and conducted research on black bear ecology in six geographic areas of Idaho and was responsible for capturing over 1,500 black bears and collecting information on their population dynamics, food habits, reproductive biology, denning ecology, movements, habitat use, and mortality factors. John has published numerous scientific papers on bear ecology and bear rehabilitation methods, and co-authored, with Jeff Rohlman, a book entitled *A Shadow in the Forest - Idaho's Black Bear* that was published by the University of Idaho Press in 1994, and was a co-author for the *Cougar Management Guidelines* that were published in 2005. He completed his Ph.D. (Population characteristics, denning, and growth patterns of black bears in Idaho) at the University of Montana in 1980. He is a past president of the International Association for Bear Research and Management (IBA) and has also served that organization as a Council member, associate editor, and newsletter editor. John has been involved in rehabilitation and release of black bears in Idaho since 1972 and has participated in the release of over 200-orphaned black bears. He recently completed a white paper titled *Orphan Bear Cubs -Rehabilitation and Release Guidelines*, and continues to work as a consultant on efforts to release orphan bears back to the wild in the U.S. and other countries, and on human-bear conflict issues in Turkey.

For details of projects and publications

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## THE RELEASE AND MONITORING OF ORPHAN BEAR CUBS

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John Beecham

In recent years, black bear (*Ursus americanus*) populations have increased in numbers and distribution across much of North America and brown bears (*U. arctos*) are expanding in Norway, Sweden, Greece, and other parts of Europe. However, bears in many parts of the world have been eliminated from 50-75% of their historic range and population insularization due to habitat fragmentation continues to pose a threat in many countries. Protection of small isolated populations of bears is important, but their chances for long-term survival are diminished without intrusive habitat and population management programs. Rehabilitation and release programs for orphaned bear cubs have the potential to provide benefits to individual bears from a welfare perspective, and may contribute to conservation efforts for rare species. Biologists have been involved in releasing orphaned bear cubs into the wild for more than 3 decades and bears appear to be particularly good candidates for rehabilitation efforts because the skills they need to survive in the wild are innate, not learned. However, little is known about the critical care needed by orphaned bear cubs prior to their release. Information about the methods used to raise, release and monitor the survival of orphan bears was collected and summarized from a 2005 survey of bear rehabilitation centers in North and South America, Europe and Asia, and from a 2007 workshop in Russia on the rehabilitation and release of orphan bear cubs. We analyzed these data to specifically ascertain the critical components of rehabilitation and release programs that have contributed to the successful release of orphaned bear cubs. In this presentation, we discuss factors associated with release of orphan bear cubs back to the wild and important components of an intervention plan designed to minimize risks related to the release of orphaned cubs back to the wild.

### BIOGRAPHICAL NOTES

John worked for the Idaho Department of Fish and Game for over 29 years, including 12 years conducting research on black bears. John designed and conducted research on black bear ecology in six geographic areas of Idaho and was responsible for capturing over 1,500 black bears and collecting information on their population dynamics, food habits, reproductive biology, denning ecology, movements, habitat use, and mortality factors. John has published numerous scientific papers on bear ecology and bear rehabilitation methods, and co-authored, with Jeff Rohlman, a book entitled *A Shadow in the Forest - Idaho's Black Bear* that was published by the University of Idaho Press in 1994, and was a co-author for the *Cougar Management Guidelines* that were published in 2005. He completed his Ph.D. (Population characteristics, denning, and growth patterns of black bears in Idaho) at the University of Montana in 1980. He is a past president of the International Association for Bear Research and Management (IBA) and has also served that organization as a Council member, associate editor, and newsletter editor. John has been involved in rehabilitation and release of black bears in Idaho since 1972 and has participated in the release of over 200-orphaned black bears. He recently completed a white paper titled *Orphan Bear Cubs -Rehabilitation and Release Guidelines*, and continues to work as a consultant on efforts to release orphan bears back to the wild in the U.S. and other countries, and on human-bear conflict issues in Turkey.

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## BAITING AND SANCTUARY MAINTENANCE OF BEARS IN PAKISTAN: A STATUS REPORT

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Fakhar-I-Abbas

Bear baiting is a cruel practice introduced in south Asia by British colonials, in 18<sup>th</sup> century, where a toothless and pegged bear defends the attack by entire specially trained savage dogs for at least three minutes several times a day. This practice gradually becomes a part of the rituals and such fights were organized as regional events involving both the general public, the influential; landlords, and the gypsies. The problem was very deep rooted and hence getting difficult to be totally eliminated. The bears are being maintained by gypsies, landlords, and by the government, but under all situations they are being maintained in congested conditions under poor to very poor hygienic condition with very little husbandry or veterinary support. The present paper narrates a success story, resulting in a significant decline in the bearbaiting in Pakistan. The problem has been tackled by direct administrative confiscation of the bears, resulting in a direct decline of this cruel practice about 89% decline is calculated in last three years and also provides rescue for the bear. The service of the government officials and general public was acknowledged through reward/awards in well advertised ceremonies. The administrative check was supported through mass awareness campaigns. The lectures and film shows organized in several thousands schools and several national and international events in the country to influence the young leadership and mass media regularly used for public awareness. A religious based awareness is underway for the religious scholars who have good influence among the peoples relevant to this practice. The confiscated bears are maintained in artificially designed wild conditions in Pakistan's Bear Sanctuary where the health of the bears ensured through constant monitoring of the health, activities and behaviors of the individual bears. Their daily activity patterns site preferences and preferred and offered diets also disused.

### BIOGRAPHICAL NOTES

- Fakhar -i - Abbas is 32 years old and a PhD in Zoology (wildlife) from the University of the Punjab. He started working for bear protection in 1997. To date he has worked on various wildlife issues like ungulates, freshwater turtles, crocodiles, carnivores and the birds of Pakistan.
- Bear work during last 10 years
- Habitat surveys
- Monitoring on bear cubs poaching in the habitat
- Several hundred undercover bearbaiting events were monitored and after convincing authorities most of them were stopped and some confiscations were made
- Managing Bear sanctuary since last seven years
- Reared 5 bear cubs of average age of 3 months successfully.
- Delivered a lecture in two thousands schools addressing several hundred thousands students in both the bear habitat areas and bearbaiting affected areas.
- He has several research papers published and has written one book titled "Animal's Rights in Islam" while 2 further books on *Naemorhedus goral* and Birds of Pakistan are near completion. Representing the Pakistan Bear Sanctuary.
- Computer connected Multimedia projector required for the presentation

For details of projects and publications

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### HEALTH ISSUES IN CAPTIVE SLOTH BEARS IN INDIA SACTUARIES: GIGANTIFORM CEMENTOMA AND UNILATERAL SCROTAL HERNIAS

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Attur Shanmugam Arun<sup>1</sup> Kajal Kumar Jadav<sup>2</sup>, Selvaraj Illayaraja<sup>2</sup>

Vimal Selvaraj<sup>1,3</sup>

Very few cases of Gigantiform cementoma, a rare lesion found in the jaw, have been encountered in bears. Cementoma occurs as a benign fibro-cemento-osseous lesion around the apices of vital teeth causes severe disfigurement of the jaws. A cementoma was found in a wild caught rescued dancing sloth bear (*Melursus ursinus*) in Agra Bear Rescue facility, Agra, India. The upper right canine was extracted using a surgical technique. A mucoperiosteal flap was raised from the medial aspect of right upper canine to distal second premolar. Then the Buccal bone was removed. The histopathological examination of the incised mass revealed the hyperplastic squamous lining of the epithelium had chronic inflammation.

Scrotal hernias are indirect hernias that result from a defect in the vaginal ring, due to either congenital or an acquired cause, allowing abdominal contents to protrude into the vaginal process along side the contents of the spermatic cord. In this case one uncastrated male rescued dancing sloth bear approximately aged 10 years showed the symptoms of sudden vomition and lethargy. The bear didn't sit but would put his head and fore quarter down on the ground instead. The detailed physical examination revealed unilateral swelling of right scrotal sac. During examination it was observed that the cordlike portion extended from the inguinal ring to the caudal aspect of the scrotum, clearly indicating a unilateral scrotal hernia. Before surgical reduction of the hernia could be accomplished the bear collapsed on the table. A post mortem confirmed that 37 cms of necrosed large intestine loop was herniated inside the scrotal sac. Except for the severe scrotal inflammation the other vital organs showed no lesions. The death was attributed to an acute septicemia and the etiology for the hernia remained unknown.

#### BIOGRAPHICAL NOTES

Arun A Sha is currently the head veterinarian for Wildlife SOS at the Bannerghatta Sloth Bear Rescue Center. He has many years of experience with treating rescued 'dancing bears' and with providing ongoing enrichment for the bears at 4 different sanctuaries. He oversees the rearing of sloth bear cubs that are seized from anti-poaching raids. Sha is also involved with treating and re-releasing injured moon bears in the foothills of northern India and works closely with forest officials on bear conservation issues.

For details of projects and publications

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## QUEENS ZOO ANDEAN BEAR PROGRAM - A DIVERSE AND EXPANDING CAPTIVE MANAGEMENT PROGRAM

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David Morales

As an SSP (*Species Survival Program*) species, 1.1 Andean bears (*Tremarctos ornatus*) at Queens Zoo are part of a high profile, nationally recognized captive management program. Queens Zoo strives for a complete conservation package through many facets; behavioral enrichment, husbandry training, a breeding program, behavioral research and conservation education. Two new programs have developed yearly since 2003 at Queens Zoo. A WCS *in situ / ex situ* program and enrichment out-reach program for Latin American zoos. The *in situ / ex situ* program is in collaboration with WCS conservation ecologist Isaac Goldstein. Isaac has been studying Andean bears for 20 years and led two field expeditions in Ecuador and Venezuela for Queens Zoo keepers David Morales and Raul Vasquez. These expeditions resulted in a re-vamped enrichment program based on the natural history, linking the living institutions with WCS field programs. The projects expanded the role of a zookeeper into the field to help better understand Andean bears from the wild to captivity. The *in situ / ex situ* program combined with a successful captive management program resulted in an enrichment out-reach program for Latin American zoos. WCS keepers have worked in seven zoological facilities housing Andean bears among Venezuela 2004, Colombia 2005, and Argentina 2006. The results of these workshops vary from ultrasound training, basic captive management, to building a tree nest; as each facility was varied in their knowledge of enrichment and training practices. The results of both *in situ / ex situ* and out-reach programs are interconnected that have enhanced captive management practices; as well as zookeeper professionalism nationally and internationally. Enhanced knowledge of Andean bear natural history and expanding that knowledge through captive management is a strong conservation tool; promoting Andean bears as an umbrella species for paramo and Andean forest conservation. A multi media presentation will highlight these programs as well as demonstrating a complete conservation package for Andean bears at Queens Zoo.

### BIOGRAPHICAL NOTES

As an employee of Wildlife Conservation Society for the past 19 years, I have worked as a wild animal keeper for the past 12 years at Queens Zoo for WCS. I am the principal keeper of the enrichment and training programs for Andean bears, cougars, & Canadian lynx. An advanced Queens Zoo training program includes procedures for voluntary injections, ultrasound, blood collection, rectal temperature, and a variety of tactile behaviors on Andean bears and cougars. Enrichment programs are well advanced based on the natural history. I have received six WCS grants since 2003; to develop WCS Andean bear and cougar *in situ / ex situ* programs, and the WCS EOP (enrichment out-reach program) for Latin America zoos. I organized and led four workshops on captive management through enrichment and training between Venezuela, Colombia, and Argentina; with the first WCS workshop on Andean bears at Bararida Zoo, Venezuela. My special interest is the conservation of Andean bears through captive management, as I have expanded Queens Zoo Andean bear program to thirteen facilities among three Latin American countries. I was the first keeper in WCS to conduct field work on Andean bears and cougars as enrichment projects, linking the living institutions with WCS field programs. In October 2006 I received the WCS Employee Recognition Award for the development of the *in situ / ex situ* programs and out-reach program in Latin America.

For details of projects and publications

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## THE BEAR TAG: WHAT IS IT?

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Cathy Keyes

In 1990 the AZA (American Zoo and Aquarium Association) established TAGs or Taxon Advisory Groups. The mandate for each of these groups was to examine the conservation needs of the entire taxa, or group of related species. This committee of expert advisors helps to determine appropriate species for AZA conservation programs. The committee also provides a setting for discussing husbandry, veterinary, and ethical issues which affect the species. Each TAG develops a Regional Collection Plan. The RCP establishes priorities for management, research and conservation and may also recommend species for new SSP's, studbooks or other conservation programs. TAGs were purposely designed to reflect the organizational plans of both the IUCN Specialist Groups and Bird Life International's Taxonomic Specialist Groups to promote cooperation and sharing of information between the AZA and international conservation programs. The Bear TAG consists of representatives from AZA member institutions as well as individuals with special expertise such as AZA SSP coordinators and studbook keepers.

### BIOGRAPHICAL NOTES

I am currently an Animal Keeper II at the Oakland Zoo. I have been there for nine years working with Malayan sun bears and a variety of other species. I have been the Institutional Representative to the Bear TAG for a number of years and was recently appointed to the Steering Committee. I also serve on the sun bear SSP management committee.

For details of projects and publications

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## POLAR BEAR HEARING STUDY: TRAINING THE BEHAVIOR "WHAT DO YOU HEAR?"

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Joanne Simerson

Training polar bears is an easy task if you can clearly communicate to them what it is you want. The desired behavior is typically easy to see. For a hearing study the desired behavior for the polar bears is to listen and then indicate they heard a computer generated tone by touching a target. Is a bear really listening even if they are looking at you and their ears are forward? The visual behavior in this case is not so easy to see. The requirement of reducing variables for research reduces the amount of variability used for reinforcement. Adding to the complications of the behavior is the actual information needed, what could they hear? This meant playing tones they could not hear or were extremely difficult to hear. All behavior was shaped and maintained with positive reinforcement. A large part of the reinforcement was the contact each bear experienced with their keeper for each session and the enjoyment they appeared to experience with success at each tone heard, especially the challenging, hard to hear tones. At the completion of data collection the bears had successfully participated in 4,000 test presentations varying in frequency from 150 Hz to 31.5 kHz. The results will provide information on the hearing sensitivity of polar bears that gives wildlife managers in polar bear habitat a better understanding of how noise may impact polar bear behavior and will provide captive habitat managers information on appropriate acoustic design for polar bears in wildlife parks and zoos.

### BIOGRAPHICAL NOTES

- Member Of Polar Bears International Advisory Council, Behavior Management
- 18 Years At The San Diego Zoo As Trainer, Keeper, And/Or Lead Of Behavior Management Division
- 10 Years Sea World Behaviorist
- Bear Work History: Worked With All Aspects Of Bear Husbandry And Training With Polar Bears, Giant Pandas, Sun Bears, Andean Bears, And Brown Bears. Training Of Semi-Free Ranging Black Bears For Reproductive Research.
- Publications And Presentations Include: "*The A.R.T. Of The Drill*" Aza 1998.
- "*Assisted Reproductive Technology With The Drill*" Imata 1999, Received The Technology Award For Training At Conference.
- *Husbandry Training 101 Part I And II* Aza Bear Tag 2001 And 2002.
- "*Meet Danum*" The Story Of Our Bornean Sun Bear Cub, Zoonooz 2003.
- "*Polar Bear Management Strategies At The San Diego Zoo*" Ipbhc 2004.
- "*Loud And Clear: Noise Disturbance And The Effect On Polar Bears*" Zoonooz 2007.

For details of projects and publications

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## ENGAGED EMPLOYEES AND VOLUNTEERS PROVIDE THE BEST STEWARDSHIP

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### Judy Willard

Employees and volunteers at all levels and in all types of positions are critical to the success of any organization be it a service organization, education/research facility, zoo, rehabilitation center or national park. Individuals, when placed in a role that best matches their innate abilities, values, experiences and technical skills and can put all that to work making a difference and a meaningful contribution are the most engaged. Besides having the right person in the right role, how they are recognized and rewarded further reinforces engagement. And who is on the front line for providing these things? Their immediate manager or staff contact. Engaged people are passionate about their jobs, providing the best possible care and service to their customers (bears, guests, volunteers and colleagues). They are: significant contributors; loyal; contagious!

### BIOGRAPHICAL NOTES

Judy Willard is Vice President of Human Resources for Barton Malow Company. She has over 25 years of Human Resources experience having worked as First Vice President for Comerica Bank and Vice President for Modern Engineering prior to joining Barton Malow in 1997. There she has been actively involved in strategic decisions and plays a central role in the development and management of the company. She is responsible for the enhancement and expansion of the company's LEAP's Internship program, establishing the Human Resources Department as a Strategic Partner, and solving the need for a long-term sustained commitment to employee development and training by establishing Barton Malow University.

Under Judy's tenure, Barton Malow was named a Finalist and received a Special Tribute award for employee development for the Women's Economic Club Workplace of Tomorrow Award, and received an honorable mention as "One of the Best Places to Work" by *Crain's Detroit Business*. Most recently, Barton Malow was again named, for the sixth time, as one of the 101 Best and Brightest Companies to Work For. In 2005, as a 101 winner, Barton Malow was recognized as an Elite Winner for Diversity and Multiculturalism.

Judy is involved in a variety of professional organizations serving as Continuing Education Committee Chair for The Associated General Contractors of America, Michigan Chapter, is a member of the Society of Human Resources Managers and is the past Executive Director for CPEG, a professional association of construction Human Resource executives.

Judy is also committed to community service. She presently is Senior Docent at her local zoo, and is a member of the board for the Girl Scouts of Metro Detroit.

Judy received her Bachelor's degree Magna cum Laude and her Master's in Business Administration from University of Detroit. She is a member of the Detroit Institute of Arts and Detroit Zoological Institute. She resides in Troy, Michigan.

For details of projects and publications

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## ENRICHMENT AND TRAINING PLANNING

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### Valerie Hare and Beth Rich

Our workshops are designed to enable participants to initiate and maintain effective enrichment programs in their institutions. The core content includes: Animal Welfare, Planning Enrichment, Behavioral Observation Techniques, Safety, Behavioral Management, Animal Training Basics, and more. The workshops consist of lectures, discussion, video demonstrations and hands-on activities working with animals in the host institution. Many of our workshops involve ursid species. Examples presented here are from Enrichment Workshops at Porto Alegre Zoo, Brazil (2002), Sacramento Zoo, USA (2006) and Pretoria Zoo, South Africa (2006). As with most of the workshops, these focused on simple and inexpensive enrichment ideas to meet specific goals.

### BIOGRAPHICAL NOTES

#### Beth Rich

- Enrichment workshop instructor since 2003
- Chair, Shape of Enrichment Education Advisory Group

#### Valerie J. Hare

- Co-founder, The Shape of Enrichment, Inc.
- Enrichment Workshop Coordinator & instructor
- Enrichment Consultant (giant panda, polar, brown, spec, sun bears)
- Giant Panda Behavior Research Technician
- International Conference on Environmental Enrichment (ICEE) Committee
- Co-editor ICEE proceedings
- Enrichment articles published in ICEE proceedings, Zoo Biology, The Shape of Enrichment, AZA proceedings
- Presentations on enrichment include zoo and/or enrichment meetings in Brazil, South Africa, Australia, Singapore, Hong Kong, China, Philippines, Scotland, Denmark, Austria, and USA

For details of projects and publications

#### Beth Rich

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## MAKING THE MOST OF BEAR ENRICHMENT

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Beth Rich

All institutions have limits on time, money and staff. The challenge animal care givers and managers face is how to make the best use of the resources to meet the needs of the animals. Enrichment may be one of the things that is overlooked in the course of an animal keeper's day. Enrichment is often perceived as needing more time, money and staff to be effective. However we can achieve positive enrichment results with limited time, funds and staff; it just takes a little creativity and communication. This presentation will outline the process of enrichment and share ideas for quick and easy bear enrichment in all of the 5 enrichment categories.

### BIOGRAPHICAL NOTES

Currently the Animal Care Supervisor for the Racine Zoo. Supervise 12 staff and a collection of about 200 animals. Prior to that, 10 years with the Zoological Society of San Diego as Lead Educator, Animal Trainer and Keeper.

Education: B.S. Zoology from U.C. Santa Barbara and an M.A. in Conservation Education from San Diego State University.

Master's Project: Creation, Implementation and Evaluation of an Enrichment, Training and Interpretive Workshop for Zoo Educators at the National Zoological Gardens of South Africa, October 2006.

Publications: Proceedings from International Conference on Environmental Enrichment 2003 & 2005, Proceedings from the International Zoo Educators Conference, 2006, Proceedings from the National Association of Interpretation Conference, 2001.

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MODIFYING OLD - STYLE BEAR GROTTO ENCLOSURES FOR WELFARE  
ENHANCEMENT

## Matthew Rich and Beth Rich

Grotto style bear enclosures were, at their inception, a new and innovative way to display bears. But today, as bear conservators we are much more concerned with the animal's welfare and not just display to the public. At the San Diego Zoo we have six older style bear grottos. We have modified these

exhibits to add substrates, water features and options enrichment devices. Much of this work was done "in-house" with a relatively limited budget as long as all staff is motivated, energetic and slightly talented. The presentation will address how these techniques can be applied to other institutions. The results of the exhibit modifications have been extremely positive overall. Abnormal behaviors have been reduced and the public feedback has been favorable as well.

## BIOGRAPHICAL NOTES

- Senior Construction and Maintenance Worker, San Diego Zoo.
- Enrichment workshop instructor since 2005
- Chair, Shape of Enrichment Construction Advisory Group
- Publications: ICEE Proceedings

For details of projects and publications

Matthew Rich

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## BEAR REHABILITATION AND ENRICHMENT AT THE IFAW PAN-YU SANCTUARY

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Jackson Zee

An introduction to the enrichment program at IFAW's Panyu Sanctuary in Southern China for rescued geriatric Asiatic black bears (*Ursus thibetanus*) rescued from illegal bear bile farms. Enrichment program consists of food enrichment, habitat enrichment, object enrichment, social enrichment, conditioning & behavioral assessments including mobility & degenerative joint disease.

### BIOGRAPHICAL NOTES

- ASc in Veterinary technology and ASc in Paramedicine
- BSc in Marine biology and BA in Psychology
- MSc in Behavioral ecology
- Certified Associate Clinical Animal Behaviorist
- Started as a volunteer at WCS/New York Aquarium in 1985
- Started working as a wild animal keeper with bears in 1991 at WCS/Central Park Zoo with Gus the "crazy" polar bear
- Curator for Active Environments projects in Asia
- Taught keepers and managers about enrichment with bears in zoos in China
- Currently Manager of IFAW Panyu Bear Sanctuary
- Serve on IUCN/SSC Bear Specialist Group Co-chair of Captive Bear Expert Team Advisor to AZA Bear TAG
- Serve as a manager for Shape of Enrichment

Representing International Fund for Animal Welfare - Emergency Relief Division and Asia Regional Office

For details of projects and publications

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## TEACHING OPERANT CONDITIONING METHODS AND TRAINING PROGRAM MANAGEMENT IN CHINA

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### Jason Pratte

Zoo Atlanta works closely with the Chengdu Research Base of Giant Panda Breeding in Chengdu, China on many collaborative projects. As a result of these projects, and as part of the contract agreement for having the two giant pandas reside in Atlanta, Chinese peers or "colleagues" are present at Zoo Atlanta much of the year. Working along side these highly experienced individuals has provided learning opportunities for everyone involved. Staff from Chengdu were particularly interested in how the panda keepers at Zoo Atlanta use operant conditioning methods to achieve various behavioral and medical husbandry goals. The author was invited to spend a month in Chengdu teaching animals and staff the basics of operant conditioning.

Discussed are the goals set, some of the obstacles encountered, and the accomplishments of the program. Three individual pandas were taught behaviors to demonstrate how quickly goals could be reached, while education materials were presented to staff, along with one-on-one sessions for Chengdu panda keepers. Program development with managers and veterinarians was a primary focus to ensure long term planning and success. A brief synopsis of the program's accomplishments after several months was also provided by a visiting researcher. The goals attained and the further challenges faced at the Research Base are similar to those faced here in North America. The structure of the program and its goals can be utilized as a framework for any developing training program in a captive facility

### BIOGRAPHICAL NOTES

- 15 years experience in zoos and animal training.
- Specialized in carnivores; worked with all 8 extant species of bears.
- Trained animals for movie and film.
- Focus on operant conditioning for captive and medical management.
- Taught staff and animals at Chengdu Research Base of Giant Panda Breeding in 2005; aided in initiating a long-term training program.
- Training consultant for other animal areas in Zoo Atlanta, and peers in facilities around throughout North America

For details of projects and publications

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### CROSSING BEARICADES: HOW ENRICHING CAPTIVE BEARS CAN HELP CONSERVE A SPECIES

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Susan Shepard

North American Black Bears, *Ursus americanus luteolus*, have begun migrating back into East Texas. This led to the development of the East Texas Black Bear Task Force (ETBBTF) to promote the restoration of the black bear in its historic range of East Texas through education, research, habitat management, and repatriation to suitable habitat. Consisting of state and federal agencies and non governmental organizations, private landowners, timber companies, universities and "East Texas" zoos, the ETBBTF is striving to accomplish its mission through partnership among stakeholders, credible science-driven management, cooperation, and a genuine commitment to bear restoration.

The last native East Texas bear was believed to have been killed in the Pineywoods in the late 1950s and there is a need to educate the public on how to safely coexist with bears as Black Bears are slowly migrating back into the region from both Louisiana and Arkansas. The Houston Zoo's Carnivore Department decided we could fill that need by hosting a Bear Awareness Week event at our zoo.

In 2005, the Houston Zoo participated in our first Bear Awareness Week, a national event promoted through Defenders of Wildlife which occurs every May. The goal of the event is to educate the public about the important role that bears play in nature as well as the importance of respecting biological diversity.

We kept it small but made it fun, including humorous skits and keeper chats to illustrate to zoo guests how you should and should not camp in bear country. The event was such a success that it has become an annual event at the zoo. This year's event covered two days and included several zoo departments and featured representatives from both Texas Parks and Wildlife and National Park Service' Big Thicket National Park to meet with our guests. All in all it was an exciting, interactive event that we hope to continue expanding on in the upcoming years.

### BIOGRAPHICAL NOTES

A graduate of Washington State University, Susan got her first zoo keeping job at the Topeka Zoo in the year 2000. There she learned how to care for a variety of different species, including black bears. A few years later, she moved on to the Houston Zoo where she now works as a carnivore keeper. She is a member of the Association of Zoos and Aquariums (AZA), American Association of Zoo Keepers (AAZK) and serves on the Steering Committee for the AZA's Sun Bear Species Survival Plan. She is also active in the Houston Zoo's local AAZK chapter.

For details of projects and publications

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## POSTER PRESENTATION: INVESTIGATING HORMONAL CORRELATES OF SEASONAL STEREOTYPIC SWIMMING IN A MALE ALASKA BROWN BEAR

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Christy Mazrimas-Ott

Brookfield Zoo is currently housing two male sibling Alaska brown bears (*Ursus arctos*) in May of 1998 the keepers noted a stereotypic swimming pattern developing in the smaller male, Axhi, but not his brother, Jim. Since Axhi's behavior has been observed to occur seasonally we wanted to test whether stereotypic swimming could be associated with either, changes in testosterone concentrations in Jim or Axhi, or higher glucocorticoid concentrations in Axhi. By monitoring fecal glucocorticoid concentrations we can obtain a measure of the physiological response in combination with behavioral observations. Behavioral observations have been conducted on Axhi since 1998 when the stereotypic swimming first occurred. Both, a biochemical and a physiological validation were performed to validate these assays for measuring steroid metabolites in Alaska brown bears fecal. Behavioral data suggest that the stereotypic swimming pattern is clearly seasonal during the past five years for Axhi.

Although Axhi's testosterone now appears to be higher than Jim's; perhaps the behavioral /dominance patterns established when they were young are stable enough that they do not change even in the face of differences in seasonal and developmental maturation.

### BIOGRAPHICAL NOTES

- Fort Worth Zoo 1986-1987 Sun Bear
- Brookfield Zoo 1993 to present Alaska Brown Bear/Kodiak Bear, Polar Bear, Spectacled Bear, Sloth Bear
- Hand raised Polar Bear cub, Tiguak, 1999
- "Investigating hormonal correlates of seasonal Alaska brown bear (*Ursus arctos*) stereotypic swimming in a male" Animal Keepers' Forum May 2004
- Douglas Creek Project bear viewer August 2004
- Alaska Brown Bear training public presentations started May 2006

For details of projects and publications

Mailing Address: Brookfield Zoo, 3300 Golf Road, Brookfield, IL 60513

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### POSTER PRESENTATION: MANAGEMENT OF CHRONIC HAIR LOSS- DERMATITIS IN A FEMALE SPECTACLED BEAR (*TEMARCTOS ORNATUS*)

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Deb Cano

A 21 year-old female spectacled bear (*Tremarctos ornatus*) had seasonal thinning of hair coat noted from 1990-1996 around the rump that developed into a migrating pattern up the back, face and muzzle. Severe episodes of scratching and overall discomfort increased. In 1996; clinical improvement noted on short durations of steroids and flea control. Conditions worsened (1997) and allergy testing results focused on regional grasses, pollens, food, flea and contact dermatitis. Food trials and bedding restrictions were instituted. From 1998-2000 attempts to control the symptoms with assorted doses and types of oral antihistamines failed. Intermittent oral steroid therapy provided short term relief. At times antifungal (Ketoconazole) was indicated to treat the over growth of normal yeast organisms. Hormonal components were ruled out from repeated skin biopsies.

In 2001 the use of injectable allergen specific immunotherapy orally in combination with oral triamcinolone improved the allergic skin disease. It is currently under control after extreme effort to find just the right combination of therapeutics. Monitoring of blood (liver enzymes) provides information regarding the tolerance to this prescribed steroid treatment.

#### BIOGRAPHICAL NOTES

Deb Cano has been a carnivore zookeeper at the San Francisco Zoo since 1995 working mainly with bears (3 species), pinnipeds, felines and canids. She has been a member of AAZK for 10 years and has participated numerous times in polar bear projects in varying capacities. She is the AZA's institutional representative for both Andean Bears and Polar Bears at the SF Zoo. Deb has been a frequent attendee at the Bear TAG conferences and the Zoo and Aquarium's Committee to Conservation Conferences.

For details of projects and publications

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Email: [babysealeater@aol.com](mailto:babysealeater@aol.com)

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## POSTER PRESENTATION: BEARS IN THE SHAPE OF ENRICHMENT WORKSHOPS

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Beth Rich and Valerie Hare

Since 2000, The Shape of Enrichment, Inc. has conducted enrichment workshops around the globe. The content and activities of each workshop are tailored to the host's needs and resources. The Workshop Coordinator and Instructors work closely with the host institution to customize each workshop.

Our workshops are designed to enable participants to initiate and maintain effective enrichment programs in their institutions. The core content includes: Animal Welfare, Planning Enrichment, Behavioral Observation Techniques, Safety, Behavioral Management, Animal Training Basics, and more. The workshops consist of lectures, discussion, video demonstrations and hands-on activities working with animals in the host institution. Many of our workshops involve ursid species. Examples presented here are from Enrichment Workshops at Porto Alegre Zoo, Brazil (2002), Sacramento Zoo, USA (2006) and Pretoria Zoo, South Africa (2006). As with most of the workshops, these focused on simple and inexpensive enrichment ideas to meet specific goals.

The Shape of Enrichment requests no fee for conducting enrichment workshops in developing countries. There is a minimum fee of \$500 for workshops hosted in other countries. All instructors donate their time to prepare for and conduct these enrichment workshops. The host institution is responsible for expenses incurred by The Shape of Enrichment for the instructors (e.g. travel, room and board) and miscellaneous expenses (e.g. photocopy, materials). All arrangements and advertising for the workshop are the responsibility of the host institution.

### BIOGRAPHICAL NOTES

Beth Rich

- Enrichment workshop instructor since 2003
- Chair, Shape of Enrichment Education Advisory Group

Valerie J. Hare

- Co-founder, The Shape of Enrichment, Inc.
- Enrichment Workshop Coordinator & instructor
- Enrichment Consultant (giant panda, polar, brown, spec, sun bears)
- Giant Panda Behavior Research Technician
- International Conference on Environmental Enrichment (ICEE) Committee
- Co-editor ICEE proceedings
- Enrichment articles published in ICEE proceedings, Zoo Biology, The Shape of Enrichment, AZA proceedings
- Presentations on enrichment include zoo and/or enrichment meetings in Brazil, South Africa, Australia, Singapore, Hong Kong, China, Philippines, Scotland, Denmark, Austria, and USA

For details of projects and publications

Beth Rich

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Valerie Hare

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### POSTER PRESENTATION: FROM CAGE TO CONSUMER - WSPA'S INVESTIGATION INTO THE GLOBAL TRADE IN BEAR PARTS

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Danielle Bays

Bear bile has been used in Traditional Medicine for thousands of years and is believed by some to have a number of therapeutic properties. Demand for bear bile is currently met through poaching of wild bears and extraction of bile from live captive bears, a process known as bear farming. The illegal trade in bear parts is believed to be one of the major threats to the survival of bear species around the world. The World Society for the Protection of Animals (WSPA) conducted investigations into the illegal trade in bear bile products in the United States, Canada, Taiwan, Japan, Korea, Singapore, Australia and New Zealand in 2006 and 2007. Taking into consideration local and global legislation on wildlife trade, bear products were on sale *illegally* in *all* countries investigated, with many stores claiming the products originated from China. WSPA therefore urges the Chinese government to reconsider its position on bear farming and instigate a phase-out of the bear farming industry in China

#### BIOGRAPHICAL NOTES

Danielle Bays is the Program Officer in charge of the bear farming campaign for the World Society for the Protection of Animals (WSPA) U.S. office. She holds a M.S. in Animals and Public Policy from Tufts University School of Veterinary Medicine and has advocated for wildlife protection for over a decade.

As the world's leading international federation of animal welfare organizations, WSPA develops campaigns and projects in partnership with more than 800 member societies in 147 countries. WSPA envisions a world where animal welfare matters, and animal cruelty ends.

For details of projects and publications

Mailing Address: The World Society for the Protection of Animals (WSPA), Boston, MA 02111  
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Email: [dbays@wspausa.org](mailto:dbays@wspausa.org)

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### POSTER PRESENTATION: FRUSTRATIONS FOR WILDLIFE REHABILITATORS WITH CALIFORNIA BLACK BEARS WITH LIFE THREATENING DISEASES

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Diane Dragotto Williams

When raising orphan bears from the wild, obviously there is no prior history to prepare the wildlife rehabilitator for congenital or traumatic conditions that may set the stage for life-threatening diseases. Therefore, when symptoms occur that are seemingly minor or complications arise out of misdiagnosing, it becomes imperative to look at the basic initial exam approach, and then educate yourself regarding a holistic look at the bear's condition. After raising two black bears from birth until their death three years later, which confounded veterinary science, it became apparent that medicine is what we practice, but not always the answer. Being aware of the bear's habits, personality, nutrition, laboratory results for urine, fecal and blood is only the beginning of solving the problem, but the essence can come within the caregiver and veterinarian's sixth sense developed over years of experience.

#### BIOGRAPHICAL NOTES

- President and Founder of the San Bernardino Mountains Wildlife Society, a NPO, established in 1994 for the preservation of wildlife native to the San Bernardino Mountains and serving the Inland Empire in Southern California
- Executive Director for a 35 acre facility called Wildhaven Ranch which rehabilitates native wildlife and educates the public about wildlife and the ecosystem with programs, tours and events at the Ranch and at off-site schools, nature centers, museums and outdoor assemblies
- Completed International Wildlife Rehabilitation Council (IWRC) basic skills and advanced courses; rehabbed wildlife (bears, deer, raccoons, bobcat, coyotes, eagles, owls, hawks, falcons) for the past 12 years
- Supervised the building of Wildhaven Ranch with a million dollar grant from the State of California, and then rebuilt The Ranch after the 2003 "Old Fire" from literally, ashes, to full operation today
- Developed experience through wildlife experts Tippi Hedren of Shambala, and Randy Miller of Predators in Action both in Southern California
- Obtained bear knowledge from teachings by Stephen Stringham, specialist in Alaskan bear behavior and wildlife management, through discussions with noted bear handler Doug Seus, and bear biologists Ben Kilham, and Lynne Rogers
- Rehabbed bears for over five years, and raised infant 3 day-old black bears
- Has the only Memorandum of Understanding with the State of California to raise orphan black bears in Southern California
- Assisting California State Fish and Game in Sacramento to develop the Orphan Black Bear Program by building a state approved facility
- Wildlife Artist for over 25 years studying wildlife "up close and personal"

For details of projects and publications

Mailing Address: Executive Director, Wildlife Rehabilitator and Black Bear Handler, Wildhaven Ranch, Lake Arrowhead, California, USA

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### POSTER PRESENTATION: AN ENLARGED EXHIBIT AND A PROGRESSIVE ENRICHMENT PROGRAM - POSITIVE EFFECTS FOR SPECTACLED BEARS (*Tremarctos ornatus*) AT THE PHOENIX ZOO

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Christina Goulart

Bears in captive settings have often demonstrated that large naturalistic environments tend to stimulate natural behaviors and reduce stereotypic activity.

In 1997, the Phoenix Zoo opened a 0.5 hectare spectacled bear exhibit planned with the intent of creating the best possible quality of life for the bears. The male bear, acquired in 2005, had a history of pacing, and almost immediately presented with this stereotypic behavior when introduced to the exhibit. Minimal intervention by keepers and basic introduced enrichment items were needed to extinguish this stereotypic behavior. It appears that the exhibit design accomplished this by providing multiple choices for the bears, and features that encourage natural behaviors. Although visitor viewing issues with the exhibit can be challenging, the benefit the bears gain from the exhibit appears to increase visitor experience positively when viewing opportunities are available. Although no concrete scientific method was used to gauge the behavioral changes in this bear, keeper observations that equaled several hours over the course of 8-9 months form the basis for the paper. These behavioral changes appear to have been adapted into what is now considered normal for this bear, pacing has become extinct, and there is little discussion about how to alleviate stereotypic behavior for this animal any longer amongst zoo staff.

#### BIOGRAPHICAL NOTES

Worked as a Zookeeper for 19 years at 5 different facilities. First time bear keeper (5 years with the spectacled bears at current facility).

For details of projects and publications

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## BIERZS 2007 CONFERENCE EVALUATION FORM

Thank you for your attendance. Your feedback is extremely important. Please complete this evaluation form by circling your response. See you at BIERZS 2009!

### Scale

- 1) Strongly Disagree or Poor      2) Disagree or Fair      3) Neutral  
4) Agree or Good      5) Strongly Agree or Excellent

### Pre-Arrival

|                                                 |   |   |   |   |   |
|-------------------------------------------------|---|---|---|---|---|
| Registration was simple, fast and efficient     | 1 | 2 | 3 | 4 | 5 |
| Payment options/policies were clear and fair    | 1 | 2 | 3 | 4 | 5 |
| Advertising/on-line information was adequate    | 1 | 2 | 3 | 4 | 5 |
| Responsiveness of conference staff to questions | 1 | 2 | 3 | 4 | 5 |

Comments:

### Arrival

|                                                   |   |   |   |   |   |
|---------------------------------------------------|---|---|---|---|---|
| Check-in procedure was simple, fast and efficient | 1 | 2 | 3 | 4 | 5 |
| Registration materials were informative           | 1 | 2 | 3 | 4 | 5 |

Comments:

### Conference Location/Facility

|                                     |   |   |   |   |   |
|-------------------------------------|---|---|---|---|---|
| Accessibility of location           | 1 | 2 | 3 | 4 | 5 |
| Size of facility                    | 1 | 2 | 3 | 4 | 5 |
| Hotel accommodations/guest rooms    | 1 | 2 | 3 | 4 | 5 |
| Cost of the lodging were reasonable | 1 | 2 | 3 | 4 | 5 |

Comments:

### Lectures

|                                        |   |   |   |   |   |
|----------------------------------------|---|---|---|---|---|
| Educational content                    | 1 | 2 | 3 | 4 | 5 |
| Handouts/take home materials           | 1 | 2 | 3 | 4 | 5 |
| Time for Q & A/Discussion              | 1 | 2 | 3 | 4 | 5 |
| I learned something new/helpful/useful | 1 | 2 | 3 | 4 | 5 |

Comments:

### Conference Speakers/Presenters

|                                  |   |   |   |   |   |
|----------------------------------|---|---|---|---|---|
| Knowledge of subject matter      | 1 | 2 | 3 | 4 | 5 |
| Quality of presentation/delivery | 1 | 2 | 3 | 4 | 5 |
| Use of audio/visual equipment    | 1 | 2 | 3 | 4 | 5 |
| Responsiveness to questions      | 1 | 2 | 3 | 4 | 5 |

Comments:

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## BIERZS 2007

|                     |   |   |   |   |   |
|---------------------|---|---|---|---|---|
| Enrichment Workshop | 1 | 2 | 3 | 4 | 5 |
| Training Workshop   | 1 | 2 | 3 | 4 | 5 |

Comments:

|                                                          |   |   |   |   |   |
|----------------------------------------------------------|---|---|---|---|---|
| Social Activities                                        |   |   |   |   |   |
| There was sufficient time to meet other delegates        | 1 | 2 | 3 | 4 | 5 |
| Conference encouraged social interaction/networking      | 1 | 2 | 3 | 4 | 5 |
| Friday morning opening "Egg Breaker" yielded new friends | 1 | 2 | 3 | 4 | 5 |

Comments:

|                                                        |   |   |   |   |   |
|--------------------------------------------------------|---|---|---|---|---|
| Saturday Evening                                       |   |   |   |   |   |
| I enjoyed having the barbeque dinner on a mountain top | 1 | 2 | 3 | 4 | 5 |

Comments:

|                                |   |   |   |   |   |
|--------------------------------|---|---|---|---|---|
| Food                           |   |   |   |   |   |
| Snack Break (Saturday, Sunday) | 1 | 2 | 3 | 4 | 5 |

Comments:

|                                                      |   |   |   |   |   |
|------------------------------------------------------|---|---|---|---|---|
| Overall Conference                                   |   |   |   |   |   |
| The schedule was full and there was plenty to do     | 1 | 2 | 3 | 4 | 5 |
| There was ample downtime/breaks                      | 1 | 2 | 3 | 4 | 5 |
| Conference staff was helpful and responsive          | 1 | 2 | 3 | 4 | 5 |
| The cost with respect to the experience was worth it | 1 | 2 | 3 | 4 | 5 |
| I feel my attendance was worthwhile                  | 1 | 2 | 3 | 4 | 5 |
| I would attend future BIERZS conferences             | 1 | 2 | 3 | 4 | 5 |
| I would recommend future conferences to others       | 1 | 2 | 3 | 4 | 5 |

Comments:

How much extra might you be willing to spend in registration fees?

Any additional comments/suggestions/constructive criticisms? Please let us know.

Is there anything you would like to see at a future conference that was not included in this year's conference? Feel free to contact us with your ideas!

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## BIERZS 2007

Please see additional list.

Zoo husbandry

Sanctuary husbandry

Veterinary Procedures for Rehabilitation/Release

Wild diseases/Captive diseases

Veterinary Procedures for Zoos and Sanctuaries

Morphology Relative to Behavior

Zoo Environmental Enrichment

Sanctuary Environmental Enrichment

Rehabilitation Environmental Enrichment

Motivating Staff/Managers Towards Husbandry Excellence

Species-Specific Behavior and Needs

Species-Specific Issues, Current Events

Conservation Roles for Rehabbers, Zoos and Sanctuaries

Operant Conditioning for Rehabbers, Zoos and Sanctuaries

Operant Conditioning Basics

Operant Conditioning, Veterinary Procedures/Crating

Environmental Enrichment Basics

Environmental Enrichment, Complex Environments

OTHER:

Please tear out these pages and mail or fax completed form to:

Gail Hedberg, San Francisco Zoo, One Zoo Road, San Francisco,

CA 94132 (fax) (510) 795-0538

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# THE SHAPE OF ENRICHMENT



To Whom It May Concern:

The PVC device accompanying this letter was constructed during the Enrichment Workshop of the BIERZS 2007 Symposium at the Los Angeles Zoo on Friday 24 August, 2007.

This is a feeding device for captive bears. It is designed to provide the bear with mental stimulation (by learning how to obtain food) and increase the time the bear spends in obtaining food.

The device is constructed from new schedule-40 PVC and should be empty and easily inspected. There are 2 designs using 2.5-inch PVC that are approximately 14- to 18- inches long. The caps may or may not be glued on. About 50 of each of these designs were made.

1. Insect feeder. Capped on both ends with  $\frac{1}{4}$ - to  $\frac{1}{2}$ -inch holes drilled along the side.
2. Suck tube. Capped on one end only.

There were also a 6 large models constructed from 6-inch-diameter PVC. There are four designs comprising end caps, inserts, holes, t-joints, and screw tops. These may also be traveling home with workshop attendees.

We hope this letter will answer your questions as you encounter these devices during your security process.

For more information, please contact:

Jordan Schaul, BEIRZ 2007 Co-Chair, Western University of Health Sciences, College of Veterinary Science. Cell: 614-397-4111

Valerie Hare, Enrichment Workshop Coordinator, The Shape of Enrichment, Inc. [www.enrichment.org](http://www.enrichment.org). Work: 858-279-4273.

Else Poulsen, BIERZS 2007 Co-Chair, Behavioral and Environmental Solutions. Work: 905-309-1370

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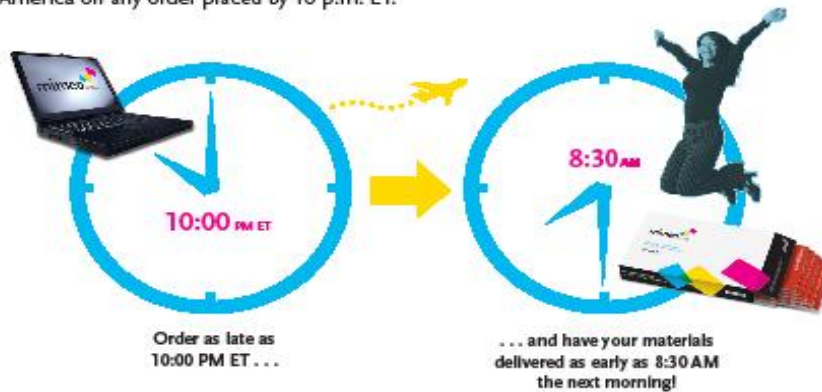
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