

>>> NEWSLETTER <<<

CONSERVATION & RESEARCH



Photo by Cassie Collins

UPDATES FROM THE SPRING



Photo by Maddy Albritton



Hi Everyone,

We are fully into dusky gopher frog and Louisiana pinesnake breeding season! Here are some highlights from the past few months on the work that's been going on in the Conservation & Research Department, including work on ungulates, tigers, flamingos, elephants, frogs, snakes, and more. There's also a great narrative on our work with pandas over the years written by Beth Roberts below.

As always, we are happy to have the opportunity to share our work with you.

Cheers,
Sheila (Dr. Sinlan Poo, Curator of Research)

SCIENTIFIC RESEARCH

>>> LOUISIANA PINESNAKES

- Recent release efforts with our partners was featured on [AP News!](#)
"Memphis 'snake factory' transplants slither into their new home in Louisiana"
- Louisiana pinesnakes are in full force this breeding season. We have some beautiful clutches and over 40 eggs thus far!
- Beth Roberts and Dr. Melanie Richter, with the help of Crista Fennessee, Jess Cantrell, Cassie Collins, Mae Staab and Lauren Cordes have been actively collecting data on our pinesnakes, including ultrasounding nearly 50 snakes, collecting semen, and conducting AIs.
- Rebecca Davis, a Master's student from U of M, is starting a project on how temperature affects the physiology and reproduction of our pinesnakes under the mentorship of Dr. Melanie Richter.

TIGERS

Dr. Joe Figel has started his work with our collaborators in Indonesia and has set up over 30 paired camera stations thus far. The goal is to get a better understanding of the tiger population in northern Sumatra as part of Joe's postdoc at the Zoo.



Photo by Joe Figel

>>> TARANTULAS

Beth Roberts, Dr. Melanie Richter, & Jess Cantrell are working to development techniques for sperm collection, anesthesia, & cryopreservation.



>>> ELEPHANTS

Dr. Melanie Richter is working with Elephant keeper Mary Svare to analyze fecal samples to determine how the herd is responding to the introduction of Kosti

>>> FLAMINGOS

Dr. Sheila Poo, Anna Chaney, and Dr. Andrew Sweet (AState) have been looking at the evolution of flamingo lice using our population at the Zoo.

>>> POLAR BEARS

Crista Fennessee worked to examine differences in hormone measurement for polar bear fecals samples dried by oven and research's new freeze dryer.

>>> PANDAS

By Beth Roberts

Over the last few months, along with the rest of Memphis Zoo, the Conservation and Research Department said goodbye to two of the most influential animals for the Conservation and Research Department over the last 20 years—Giant Pandas, Ya Ya and Le Le! These two pandas were giants in shaping the start of the Memphis Zoo Research Department and touched the research careers of over 50 Memphis Zoo research scientists, post-docs, interns, student research assistants, and docents. Ya Ya, Le Le, and the bamboo farm have been featured subjects in 21 areas of research focus of Memphis Zoo researchers working with 45 collaborators at US and China zoological and university institutions, culminating in 31 peer-reviewed publications, 22 scientific meeting presentations, and 9 graduate student master theses and doctoral dissertations. Giant pandas are incredibly unique animals and Ya Ya and Le Le truly inspired scientific discovery, conservation of wild and captive panda bears as well as wild spaces and bamboo forests. In addition to amazing role that they played in teaching us about giant panda nutrition, digestion, food choice, eating behavior, reproduction, gut microbiomes, and pheromone communication, their individual personality left an indelible mark of joy on all who worked with them. Specifically, for me, Ya Ya's sweet vocalizations, one-ear bamboo holding, and rare crook of tree lounging; and Le Le's enthusiastic Superbowl picks, surprisingly graceful head-first chest slides down climbing structure, and his favorite way to ask keepers for food – “penguining” will not soon be forgotten. The research department along with the 30 keepers and veterinarians who worked with Le and Ya over the years have developed nearly 20 years of reproductive, health, behavior, and nutritional records on Ya and Le and the photos below depict some of the interesting data developed over the years as part of daily panda husbandry and monitoring in addition to the hypothesis driven work published by researchers.

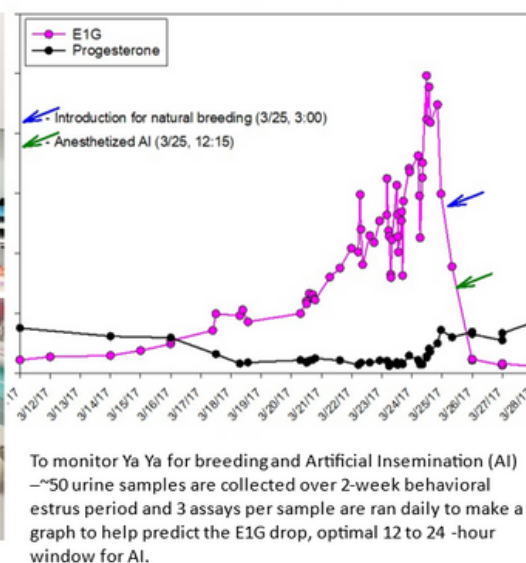


Photo and graphs by Beth Roberts

➤➤➤ DUSKY GOPHER FROGS

- Another great year for DGF breeding, with 6 clutches (a grand total of 9,610 eggs and 5,635 tadpoles)!
- Jess Cantrell, Cassie Collins and Mae Staab are taking care of the juveniles coming out of the water and Allison Bogisich is organizing our captive-release efforts in the coming weeks.



MAGAZINE FEATURE

“Can freezing frog sperm
help conservation efforts?”
featured in Current
Conservation
By Dr. Sheila Poo

NEW PARTNERSHIPS - SRI LANKA

➤➤➤ MOVING FORWARD WITH C.A.R.E.

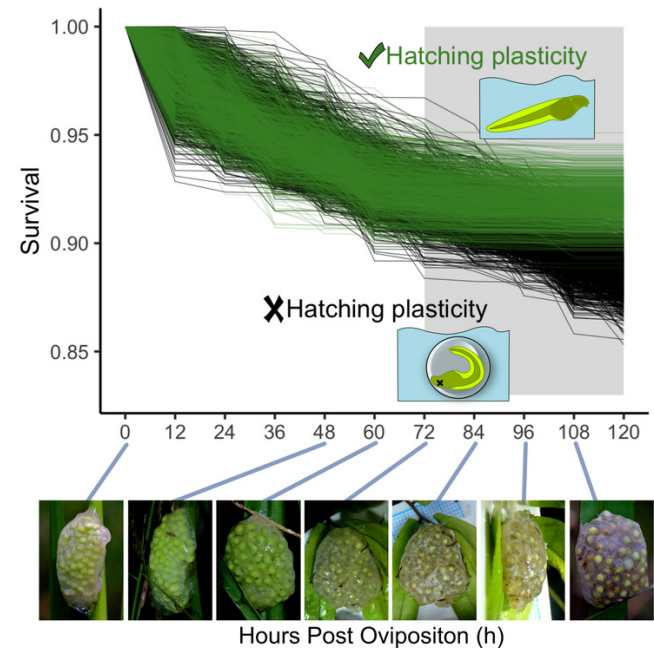
- We have signed an official agreement between the Memphis Zoo and a non-profit conservation organization in Sri Lanka (Tropical Ecosystem Research Network). The goal is to increase **Conservation, Awareness, Research, & Education (or C.A.R.E.)** through this new partnership.
- This is following a successful training on wildlife medicine and rescue, where Dr. Enoka Kudavidanage was hosted by the Dr. Felicia & hospital staff.



SPREADING THE NEWS

»»» SCIENTIFIC PUBLICATIONS

- Dr. Mark Sandfoss, Dr. Steve Reichling, and Beth Roberts published a paper showing that **sperm quality is not related to age or condition** in the pinesnakes.
- Dr. Sheila Poo published a paper on how **treefrog eggs can hatch early** to avoid dying when ponds flood. As intensity and consistency of rainfall become more unpredictable and more variable due to climate change, we need more data to increase the accuracy of our predictions on how animals respond.



TRAINING FUTURE CONSERVATIONISTS

Jess Cantrell was awarded "2023 Intern Supervisor of the Year" by CBU! An award nominated by her student Jazmin Hernandez.



»»» CONFERENCES

- Dr. Sheila Poo talked about "**The Critical Role Zoos Play in Species Conservation**" at Society for the Preservation of Natural History Collections Conference.
- Dr. Sheila Poo led a panel on "**Bridging Zoos and Natural History Museums**" at AZA Mid-year Meeting.
- Dr. Melanie Richter presented her project proposal on using commercial lab kit to diagnose pregnancy in hoofstock at AZA Mid-year's Ungulate TAG Meeting.
- Beth Roberts presented on AI of pinesnakes at Snake TAG.
- Allison Bogisich presented on **Dusky Gopher Frog captive-breeding and reintroduction** at Amphibian TAG, and Southeastern Partners in Amphibian and Reptile Conservation.

»»» SEMINARS, EVENTS, & COMMUNITY ENGAGEMENT

- Beth Roberts, Dr. Melanie Richter, & Allison Bogisich - Joint seminar on all the amazing research that's done at the Zoo at Rhodes College.
- Dr. Sheila Poo - OK State University seminar on "Glimpse into Conservation & Research at a Zoo" & Pre-College scholars panel for future herpetologists.
- Allison Bogisich - Moderated panel on "Inclusive Herpetology" & talked at FrogCon's "Amphibian Week"
- Dr. Joe Figel - Talked about plans for tiger research with zoo guests at the Roar and Pour event.
- Cassie Collins, Dr. Melanie Richter, Beth Roberts, Dr. Sheila Poo and many others - Talked about conservation efforts at Cocktails for Conservation event.