

# Blood Draw Training for the Future

How can we help you, help us, help giraffe?

Amy Schilz and Dr. Liza Dadone, Cheyenne Mountain Zoo



## Why collect bloodwork?

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- Health monitoring
- Confirming & monitoring pregnancy
- Pre-shipment health assessments
- Checking for parasite-associated anemia





## **Serial bloodwork monitoring to track pregnancy & health status**

Pregnancy #1 (2015-16); 5 samples over pregnancy + sample 36 hrs after delivery

Pregnancy #2 (2018-19): 7 samples during pregnancy + sample within week of delivery

- Progesterone increase w/i ~2 wks of breeding (day 2 =  $<0.1$  ng/ml; day 15 – 21.6 ng/ml)





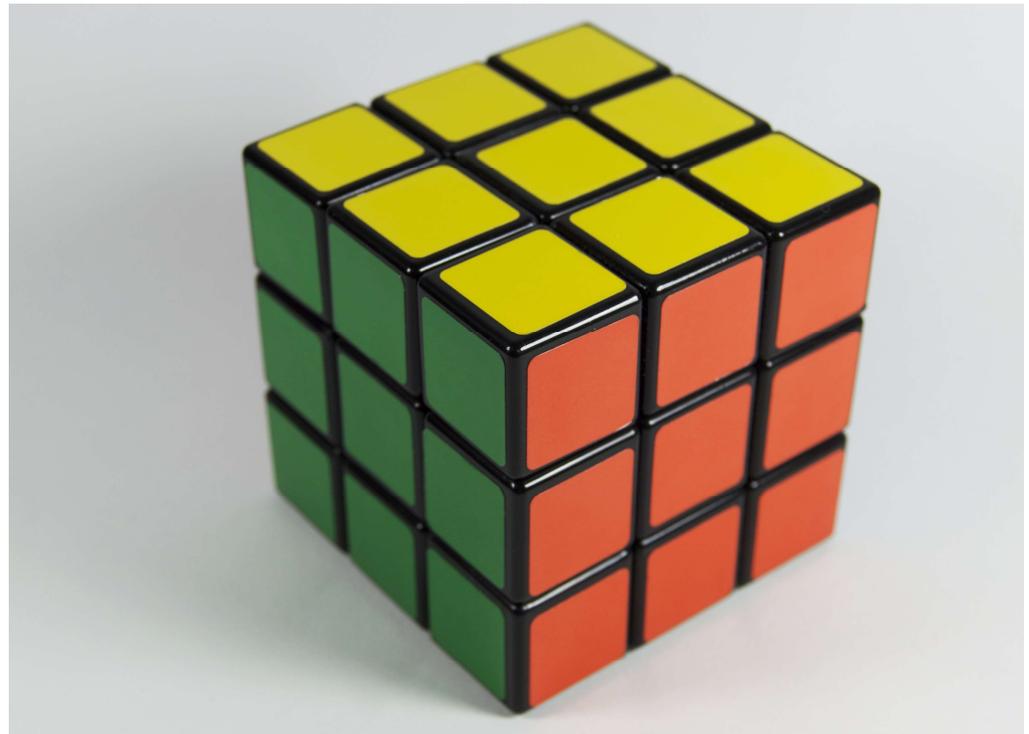
How do we train it?

# Foundation Behaviors

*What do you need to know to know something else?*



# Training As An Algorithm



# Foundation Behaviors: “Algorithms” For Giraffe



- Target
- Back Up
- Hold Still for Duration
- The Dance
- Move in

“In Skinner’s system, errors are a function of poor analysis of behavior, a poorly designed shaping program, moving too fast from step to step in the program, and the ***lack of prerequisite behaviors necessary for success*** in the program.”

B.F. Skinner (1968)

Jesus Rosales-Ruiz (summarized 2007)





## Foundation Behaviors For Blood Draws

- Target
- Duration of staying still
- Allowing touch
- Allowing poke
  - Building up needle gauge (Thanks Columbus!!!)
  - Building up needle duration



# Teaching Touch = Teaching Duration on Still

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Are we asking *them* to behave, or  
are *we* behaving while we are  
asking them to stay still?



Control is a primary reinforcer. We need to figure out a way to give control back to them.

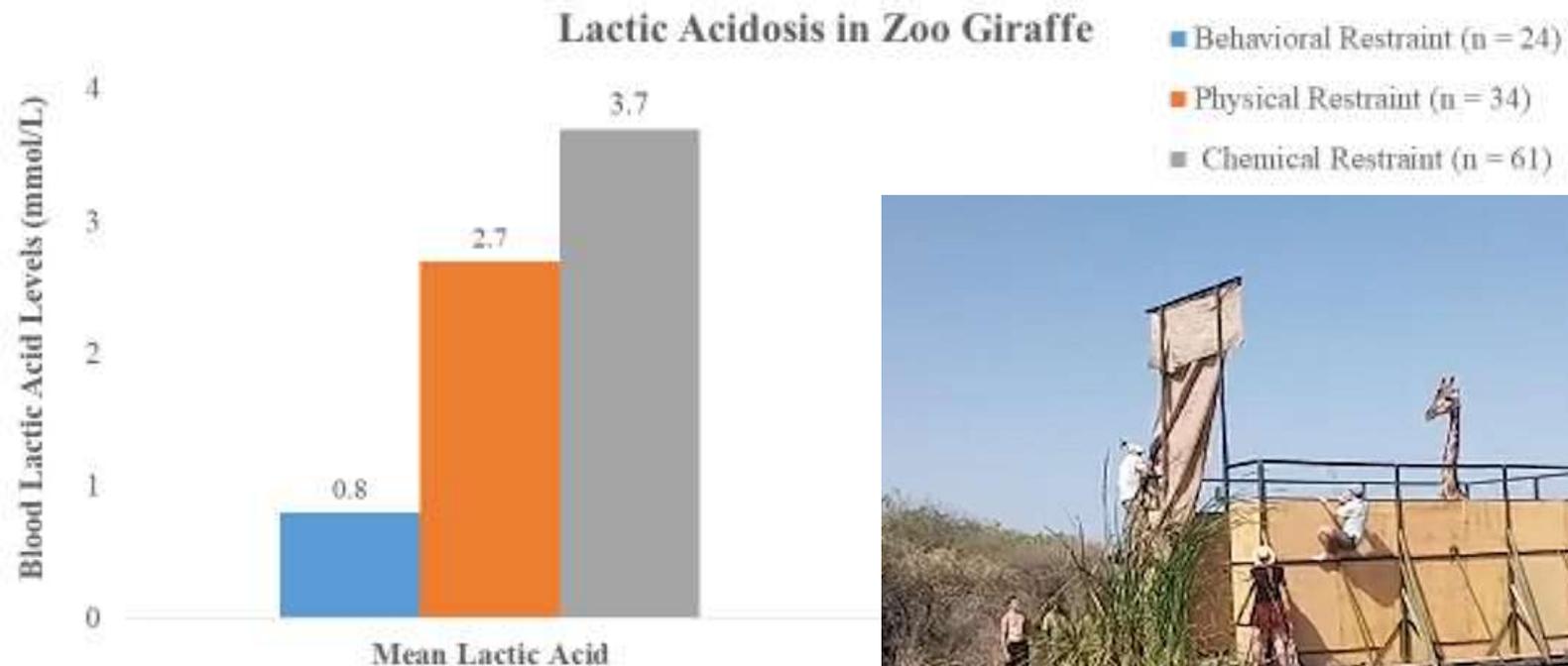
Least intrusive, most effective.



The goal of your session *isn't* hoof care. It *isn't* a blood draw. It *isn't* an ultrasound.

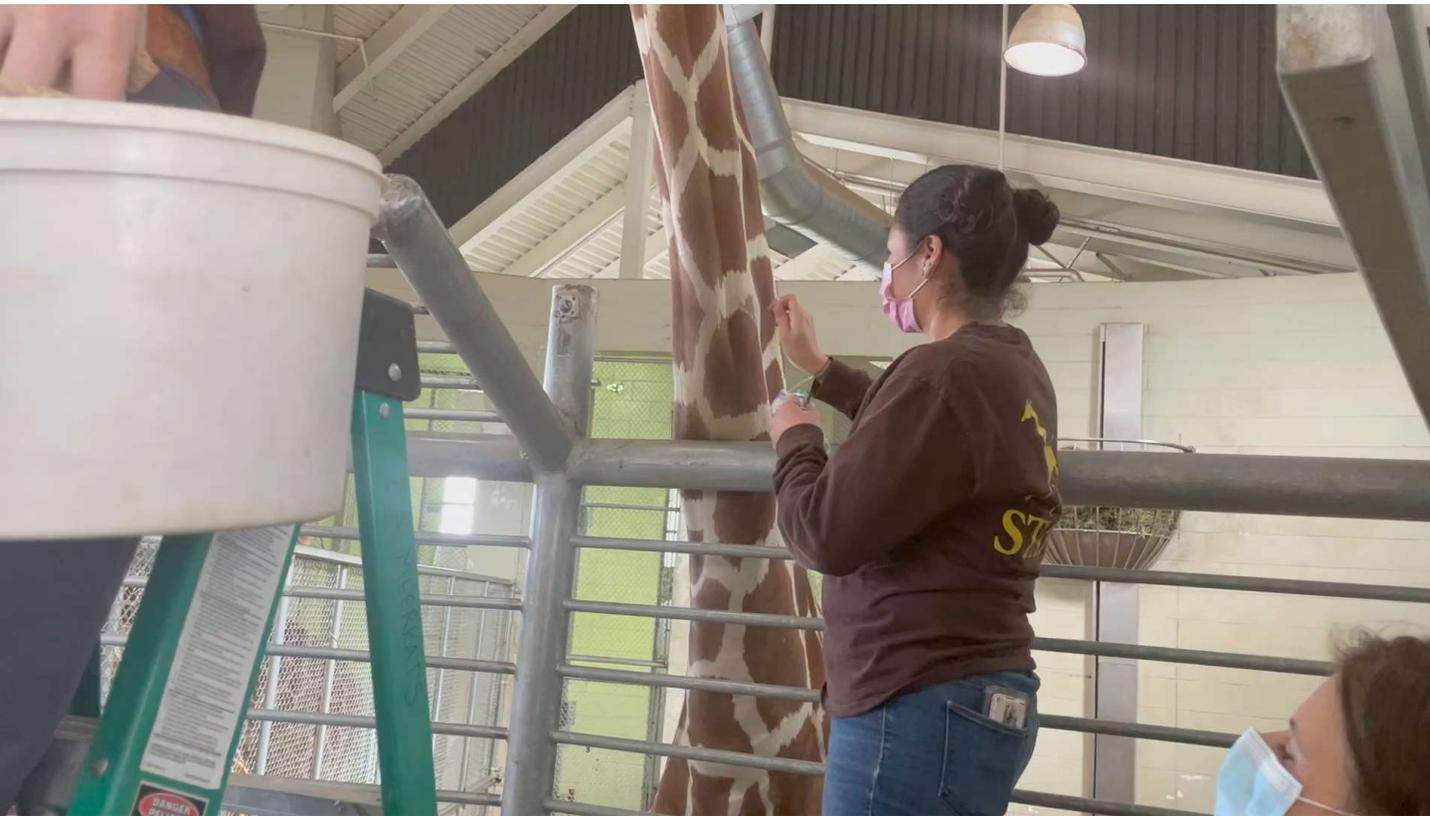
It *is* a comfortable, still animal that can exert control via choice to participate.

# Quantifying the Physiologic Impacts of Behavioral vs Physical vs Chemical Restraint



“If people don’t know, they can’t care.” – Dr. Sylvia Earle

# How can we make the right behavior the **MOST LIKELY** to occur?



- Blood draw ports
- Ladders
- Feeding at the target stick
- Sticking lower



# What does the future hold?

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Use your *Blood Draw* as a foundation behavior.....

Stem Cell Therapy

# Blood Draw as a Foundation Behavior: Plasma Banking

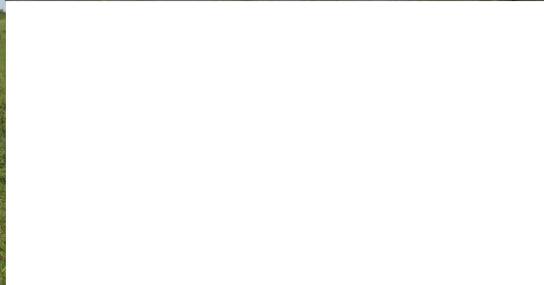


## Giraffe Plasma Recipients, Year #1

Case #	Outcome	Date
1	Lived	3/17
2	Lived	4/17
3	Died	5/17
4	Died	6/17
5	Lived	6/17
6	Lived	1/18
Total	4 lived, 2 died	

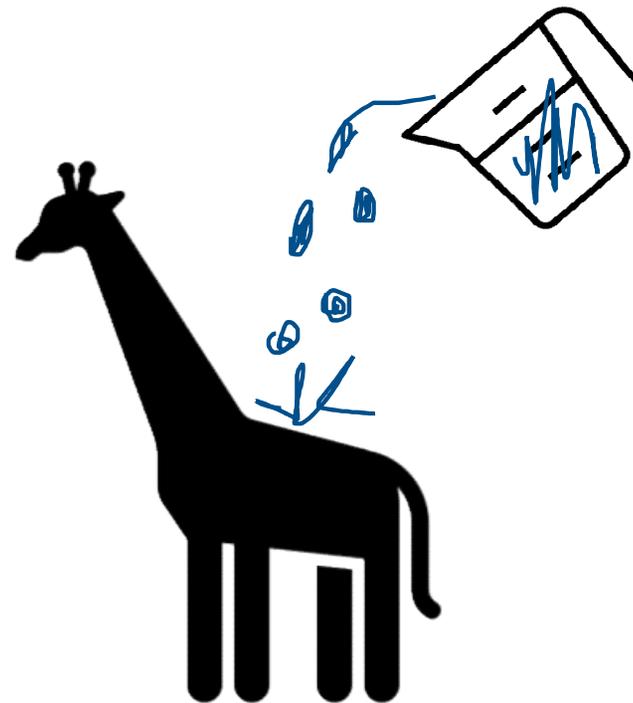


# Blood Draw as a Foundation Behavior- Drug Studies



# We Need Animals That Can Do Voluntary, Repeatable Blood Draws

- 0, 4, 24, and 48 hours
- 7, 14, 21, and 28 days



Bradford, *et al.* 2021. Abstract: Pharmacokinetics of a single topical dose of eprinomectin in giraffe. AAZV Conf Proceedings.



# Eprinomectin Study

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- Cheyenne Mountain Zoo
- Birmingham Zoo
- B Bryan Preserve
- Dickerson Park Zoo
- Greenville Zoo

Thank You

# Ex-situ Helping In-Situ – More Than Just Financially

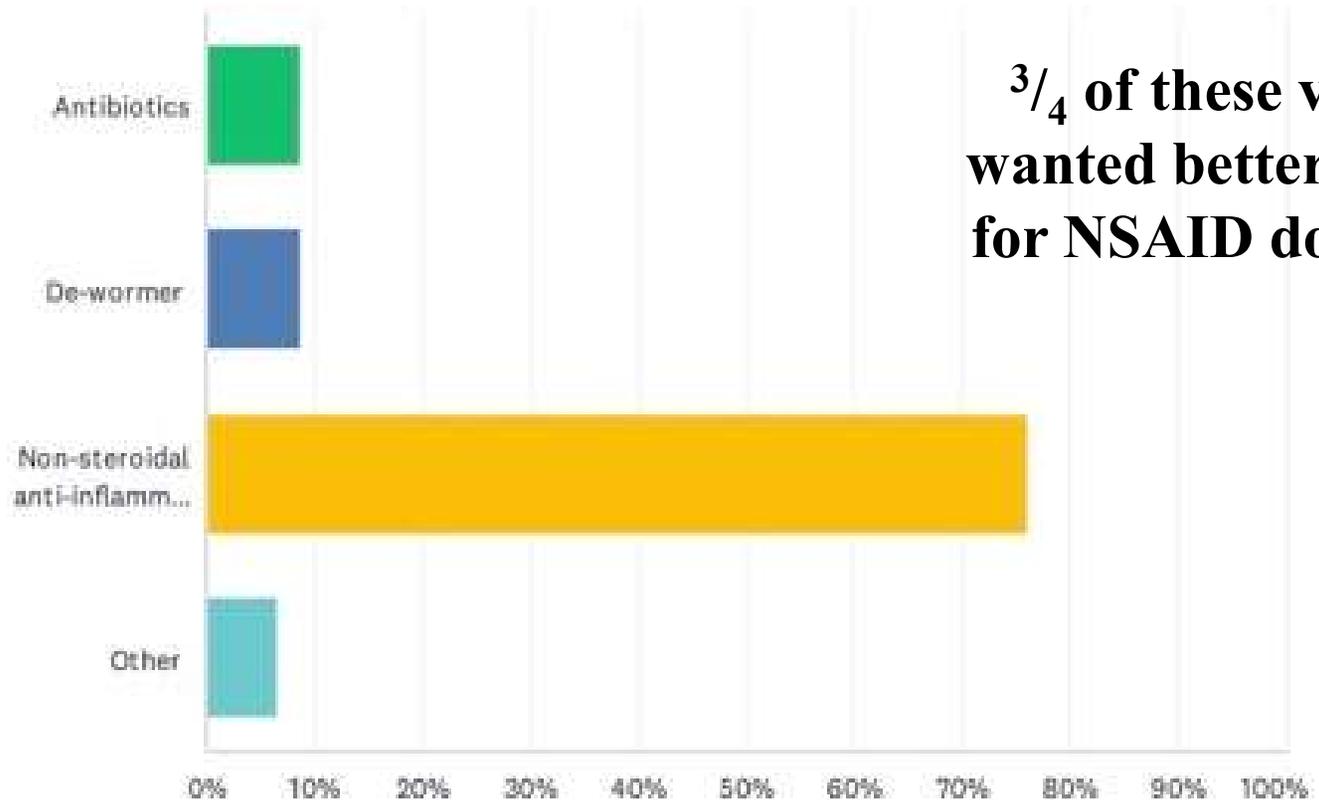


Q9 Based on your own clinical experiences, what type of medication should be studied in the next giraffe pharmacokinetics drug study?

Answered: 46 Skipped: 2

Oct 19, 2021

AAZV/EAZWV  
Giraffe Foot  
Care Workshop  
Survey

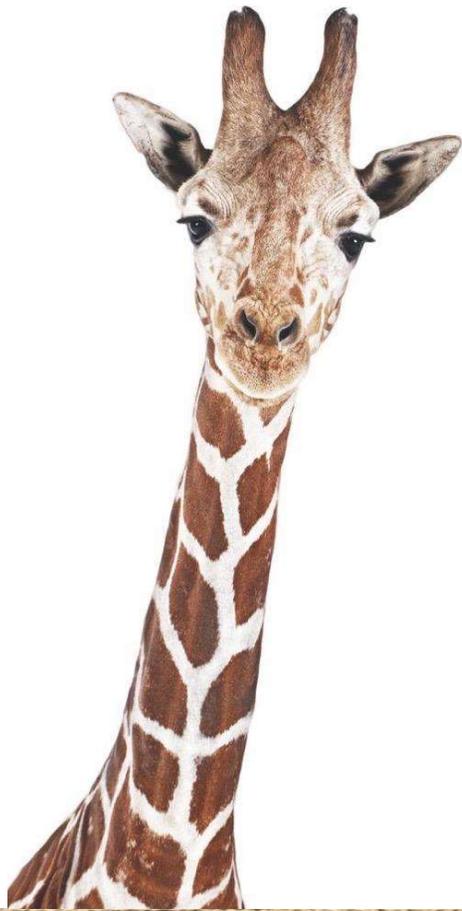


**3/4 of these vets  
wanted better info  
for NSAID dosing**



Imagine what we could do if *ALL* our giraffe were trained for voluntary, *repeatable* blood draws.

- Nutrition studies?
- Drug studies?
- Blood Typing?
- Parasite studies?
- Transfusion medicine?
- Worldwide Plasma Bank?
- Stem Cell collection and therapy
- Developing AI techniques?
- All in addition to regular health checks and transports.



# Call to Action! BHAGS

439 Generic, 131 Masai - 570 giraffe

Challenge: Everyone train at least one giraffe for voluntary BD at each facility

A list of institutions who have giraffe trained for voluntary blood draws.

Complete by 7/30/22...?

