

ZWNF/NAG Conference
Fifteenth Conference Schedule [Draft]
17-20 September 2023
Sheraton Music City Hotel, Nashville, Tennessee

Saturday, 16 September 2023

3:00 pm - 6:00 pm Registration

Sunday, 17 September 2023

6:00 am - 7:00 am Registration

7:25 am - 7:30 am Opening Remarks

7:30 am - 2:15 pm **Workshop: Resilience for zoo and aquatic nutrition programs in the face of climate change**

Verdis Group

Breaks and Lunch provided

2:15 pm - 2:30 pm BREAK

2:30 pm - 4:30 pm **International Zoo and Wildlife Nutrition (IZWN) program – Introduction to IZWN and Demonstration of Software Tools**

Heidi Bissell and Ellen S. Dierenfeld

4:00 pm - 5:00 pm Registration

6:00 pm **Icebreaker with AAZV**

Monday, 18 September 2023

6:30 am - 7:30 am Registration

8:00 am - 8:20 am Introductions, Welcome, Opening by AAZV

8:30 am - 8:40 am Introductions, Welcome, Opening by NAG

8:40 am - 9:25 am **Why diets matter and are key to understanding ancient and modern ecosystems**

KEYNOTE SPEAKER: Larisa DeSantis

9:25 am - 9:40 am **INTRODUCE POSTERS**

Microbiome

9:40 am - 10:25 am **Integrating microbiome science and microbial therapies into practical animal care and management**

INVITED SPEAKER: Sally Bornbusch

10:25 am - 10:55 am **BREAK and POSTER SESSION**

10:55 am - 11:15 am **A fecal capsule a day keeps the dysbiosis away: a case study on oral-fecal microbiota transplant in Linne's two-toed sloth (*Choloepus didactylus*)**

Katrina M. Eschweiler, Dena E. Sanders, Elizabeth Rengh, and Courtney Patson*

11:15 am - 11:35 am **Behavior and fecal microbiome of giraffes engaging in a public enrichment activity**

Carly A. Hoffmann, Chris Skaggs, and Phillip R. Myer*

Participant in the Roy McClements Student-Keeper Paper Competition*

11:35 am - 11:41 am **HOUSEKEEPING and SPONSOR TIME**

11:41 am - 12:56 pm **LUNCH PROVIDED (with ticket)**

Nutrition Advisory Group, Fifteenth Conference Schedule, 17-20 September 2023

	Handrearing
12:56 pm - 1:16 pm	The macronutrient composition of Japanese macaque (<i>Macaca fuscata</i>) milk <i>Michael L. Power* and Hannah E. Shinnerl</i>
1:16 pm - 1:36 pm	Hand-rearing of a straw coloured fruit bat (<i>Eidolon helvum</i>) pup at Toronto Zoo <i>Beth McGregor* and Sarra Gourlie</i>
1:36 pm - 1:56 pm	A spoonful of formula: handrearing and metabolic bone disease of roseate spoonbills (<i>Platalea ajaja</i>) at Zoo Miami <i>Kibby H. Treiber*, Marisa Bezjian, and Matthew McHale</i>
1:56 pm - 2:16 pm	Overview of crop milk nutrient composition in Columbiformes compared to select hand-rearing formulas <i>Mike Maslanka*, Mike Power, Hannah Shinnerl, and Kelly Kappen</i>
2:16 pm - 2:36 pm	Raising Tikiti: warthog (<i>Phacochoerus africanus</i>) handrearing at Dallas Zoo <i>Kerri A. Slifka</i>
2:36 pm - 2:43 pm	HOUSEKEEPING and SPONSOR TIME
2:43 pm - 3:13 pm	BREAK and POSTER SESSION
	Metabolism
3:13 pm - 3:33 pm	Nutritional and medical management of a male South African cheetah (<i>Acinonyx jubatus jubatus</i>) diagnosed with hyperlipidemia due to hypertriglyceridemia at Cincinnati Zoo & Botanical Garden <i>Barbara A. Henry*, Julia A. LaFrankie, Michael R. Wenninger, and Jennifer A. Nollman</i>
3:33 pm - 3:53 pm	The seasonal nutritional physiology of polar bears (<i>Ursus maritimus</i>) under human care <i>Veronica T. Ouellette*, Sarra Gourlie, and Gregory W. Thiemann</i>
3:53 pm - 4:03 pm	HOUSEKEEPING and SPONSOR TIME
4:03 pm - 5:00 pm	International Zoo and Wildlife Nutrition (IZWN) program – Data Curation <i>Heidi Bissell and Ellen S. Dierenfeld</i>
7:00 pm - 9:00 pm	SCARF BENEFIT

Tuesday, 19 September 2023

7:00 am - 7:55 am	CONTINENTAL BREAKFAST (with ticket)
8:00 am - 8:05 am	Day remarks/Housekeeping
8:05 am - 8:25 am	CASE STUDY: Supporting nutritional health of ambassador animals at zoological institutions <i>Jordyn Ellorin* and Jennifer L. D'Amato-Anderson</i>
	Assessing Current Techniques
8:25 am - 8:45 am	A validation study of fat scoring as an estimation of body condition in Cardinalidae spp. <i>Hannah E. Shinnerl*, Erin Kendrick, Mike Maslanka, and Michael L. Power</i>
8:45 am - 9:05 am	Building custom apps to improve commissary operations <i>Siga Lapinskas</i>
9:05 am - 9:25 am	CASE STUDY: Nutrition case studies: hot topics and challenges <i>Shannon Livingston*, Heidi Bissell*, and Kathleen Sullivan*</i>
9:25 am - 9:35 am	HOUSEKEEPING and SPONSOR TIME
9:35 am - 9:55 am	BREAK and POSTER SESSION

Nutrition Advisory Group, Fifteenth Conference Schedule, 17-20 September 2023

9:55 am - 10:40 am	Browse and toxic plant programs for zoological institutions <i>INVITED SPEAKER: Danielle Green</i>
10:40 am - 11:00 am	Application of near infrared reflectance spectroscopy (NIRS) to measure protein, fat, energy, and moisture in fish, meat, and whole prey <i>Larisa J. Jancewicz*, Sophie Zawadski, and Manuel Juárez</i>
11:00 am - 11:20 am	Second edition of the AZA NAG/USDA document on handling fish fed to fish-eating animals <i>Michael Maslanka, Jennifer Watts, Heidi Bissell*, Matthew Brooks, Sarra Gourlie, Barbara A. Henry, Kelly Kappen, Adam Reppert, Kerri Slifka, Kathleen Sullivan, and Barbara Todd</i>
11:20 am - 11:40 am	Housekeeping + sponsor time
12:30 pm -	ZOO DAY

Wednesday, 20 September 2023

7:00 am - 7:55 am	Continental Breakfast (with ticket)
8:00 am - 8:05 am	Housekeeping
	Micronutrients
8:05 am - 8:50 am	Vitamin D metabolism and analysis of vitamin D2/D3 and their metabolites by liquid chromatography with tandem mass spectrometry (LC-MS-MS) in multiple species <i>INVITED SPEAKER: John Rathmacher</i>
8:50 am - 9:10 am	Gut-loading tiny crickets, not just a smaller version of adult cricket gut-loading <i>Katelyn J. Spence*, Rebecca M. Snaveley, Andrew M. Young, Kevin C. Barrett, Ellen Bronson, and Nichole Huntley</i>
9:10 am - 9:30 am	Characterization of the relative abundance of duodenal mRNA related to genes involved in copper absorption in different breeds of sheep <i>Olivia Renn, Huey Yi Loh, Jennifer L. Parsons*, Nancy Irlbeck, and Terry E. Engle</i>
9:30 am - 9:50 am	Positive impact of selenium supplementation on selenium status and antioxidant status in rhinoceros, elephant, and zebra at Disney's Animal Kingdom® <i>Kathleen E. Sullivan*, Ashley Fowler, Alyxandra Swanhall, Jill Lance, Shannon E. Livingston, Heidi Bissell, Diwaker Vyas, Eduardo V. Valdes, and Lori K. Warren</i>
9:50 am - 10:22 am	Housekeeping + sponsor time
10:22 am - 11:07 am	BREAK and EXHIBIT HALL
	Meat Techniques
11:07 am - 11:27 am	Bovine blood harvest for <i>Desmodus rotundus</i> without the use of anticoagulants <i>Megan Rose*, Carrie Ullmer, Courtney Pace, and Amanda Ardente</i>
11:27 am - 11:47 am	Nutritional considerations for supplemental gruel feeding of elasmobranchs <i>Scott M. Williams*, Natalie D. Mylniczenko, Kathleen E. Sullivan, and Heidi Bissell</i>
11:47 am - 12:07 pm	Meat powder pops: microbiology and palatability of freeze-dried horse meat used in frozen enrichment <i>Rachael L. Peck* and Kibby H. Treiber</i>
12:07 pm - 12:09 pm	Housekeeping + sponsor time

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12:09 pm - 1:00 pm	LUNCH PROVIDED (with ticket) Diet Management
1:00 pm - 1:20 pm	Dietary management of diabetes in a white-cheeked gibbon (<i>Nomascus leucogenys</i>) and mandrill (<i>Mandrillus sphinx</i>) <i>Adam Reppert</i>
1:20 pm - 1:40 pm	Dietary trial to address bloat and loose stools in female western lowland gorilla (<i>Gorilla gorilla gorilla</i>) <i>Cayla J. Iske</i>
1:40 pm - 2:00 pm	Celebrating the success of 10 years of Zoo and Wildlife Nutrition Foundation <i>Barbara Henry</i>
2:00 pm - 3:00 pm	MEMBERSHIP MEETING
3:00 pm - 3:42 pm	BREAK and EXHIBIT HALL
3:42 pm - 4:02 pm	CASE STUDY: Inflammatory bowel disease in zoo-housed animals: three case studies <i>Kelly Kappen</i>
4:02 pm - 4:12 pm	Closing conference remarks
4:12 pm - 5:00 pm	International Zoo and Wildlife Nutrition (IZWN) program – Opportunities for Your Involvement and Support <i>Heidi Bissell and Ellen S. Dierenfeld</i>
7:00 pm - 9:00 pm	BANQUET

POSTERS

Visit with the authors Monday, 9/18 at 10:25 am and 2:43 pm and Tuesday, 9/19 at 9:35 am

Assessing commonly used commercial probiotics and their relevance to zoo animal gut microbiomes

Sally L. Bornbusch, Piper R. Thacher, Erin L. Kendrick, Carly R. Muletz-Wolz, and Michael T. Maslanka*

Establishing blood biochemistry reference values for Nicobar pigeons (*Caloedas nicobarica*) using i-STAT Alinity V®

Christina M. Burnham, Kimberly Ange-van Heugten, Larry J. Minter, and Dustin Foote*

Nuts! What to feed a lipid loving saki monkey

Elvira Di Nuzzo, Sarra Gourlie, and Beth McGregor*

Fecal glucocorticoid metabolites and their association with fecal microbiome in western lowland gorillas (*Gorilla gorilla gorilla*) housed in US zoos

Natalia A. Prado, Maia Bennett-Boehm, Anneke Moresco, Kimberly Ange-van Heugten, Jonathan Clayton, Katrina Eschweiler, and Janine L. Brown*

Fecal microbiota transplants modulate the gut microbiome of a two-toed sloth (*Choloepus didactylus*)

Piper R. Thacher, Erin L. Kendrick, Michael Maslanka, Carly R. Muletz-Wolz, and Sally L. Bornbusch*

Fecal fat in common marmosets (*Callithrix jacchus*) as a measure of intestinal health and lipid absorption across age groups

*Hannah E. Shinnerl and Michael L. Power**

Development of a body condition score chart for red pandas (*Ailurus fulgens*)

Hannah E. Shinnerl, Andrea Fidgett, Jennifer L D'Amato-Anderson, and Jordyn Ellorin*

Impact of dietary phytate supplementation on iron and phosphorus utilization in black rhinoceros

Kathleen Sullivan, Alyxandra Swanhall, Jill Lance, Laura M. Cersosimo, Ashley Fowler, Shannon Livingston, Eduardo V. Valdes, Charles Staples, and Lori K. Warren*

Impact of soaking coastal bermuda grass and timothy hays on nutrient reduction and subsequent mold development

Alyxandra Swanhall, Lori K. Warren, Shannon E. Livingston, Heidi Bissell, and Kathleen E. Sullivan

Dietary and body weight management of a herd of southern white rhinoceros (*Ceratotherium simum simum*) at Disney's Animal Kingdom® resulting in successful pregnancies and calf growth

Alyxandra Swanhall, Shannon Livingston, Heidi Bissell, and Kathleen E. Sullivan*

Training process for the collection of milk samples in Central American tapir (*Tapirus bairdii*)

José A. Tello, Kimberly Ange-van Heugten, Anneke Moresco, Alejandro Striedinger, and María Leiva*

Comparative analysis of i-STAT Alinity v Chems+ cartridge and commercial laboratory blood biochemical analysis in chimpanzees (*Pan troglodytes*) in the Republic of Congo

Susan A. Vallandingham, Anneke Moresco, Yedra Feltrer-Rambaud, Michelle Larsen, Troy N. Tollefson, Rebeca Atencia, and Kimberly Ange-van Heugten*

The macronutritional composition changes over time in early and mid-lactation milks compared among Perissodactyla families

*Jenna C.P. Wagner, Michelle Diehl, Benjamin Po, Mark Edwards, Michael Power, Shweta Trivedi, Larry J. Minter, and Kimberly Ange-van Heugten**

The nutrient profile of products available for hand rearing Asian elephants (*Elephas maximus*)

Ann M. Ward, Sarah McCusker, Troy Tollefson, and Michael L. Power*