



***Zoo and Wildlife  
Nutrition  
Foundation  
2019 Annual Report***



# Letter from the President

20 November 2020

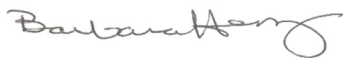
Hello Everyone!

Sorry this annual report is coming to you so late. As my picture indicates below the world threw a curve ball and March quickly turned into November before we knew it. This is our fourth annual report and we are pleased to share all the happenings from 2019 for the Foundation.

I am pleased to report we had many high points this year including some firsts! Our main fund-raising campaign currently centers around our biannual conference. This year we exceeded all past fundraising years through the generous support of our donors. Sponsorships this year reached \$40,100! Attendance at the conference received a big boost from the additional 62 veterinarians that qualified for continuing education credits through the American College of Zoological Medicine (ACZM). It was the first year we have participated in this program. Nutrition is a significant part of animal health. By providing nutrition education and building relationships with veterinarians, we have made a significant step towards overall better animal welfare. Additionally, our SCARF fundraiser evening was the most profitable yet, benefiting the training of post graduate students in the science of zoo nutrition. We also were able to continue our travel and small research grant programs reaching colleagues internationally.

The most current information on the Foundation, as well as a link to donate in support of our important work can be found at: <https://nagonline.net/zwnf/>. We encourage your continued interest in the Foundation and its mission, as well as your support for the work that the Foundation does to train the next generation of zoo nutritionists! Thank you!

Sincerely,



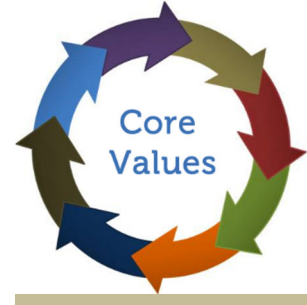
Barbara Henry, MS  
President, Board of Directors, Zoo and Wildlife  
Nutrition Foundation  
Curator of Nutrition, Cincinnati Zoo & Botanical



# ZWNF Definition, Mission, and Focus

The Zoo and Wildlife Nutrition Foundation (ZWNF) is a Texas nonprofit corporation formed by concerned individuals to promote zoo and wildlife nutrition.

Our mission is to (a) provide nutrition education and advice for captive feeding programs in concert with the Association of Zoos and Aquariums Nutrition Advisory Group (NAG); and (b) participate in, and contribute to, global and regional nutrition research programs.



There are several ways in which we accomplish this. We maintain funds to support nutrition education and training. We administer a portion of those monies via the Sue Crissey Animal Nutrition Residency Fund (SCARF) which is pivotal in training the next generation of zoo nutritionists. We provide technical, financial, and administrative support for the NAG and its website (<https://nagonline.net>). At the same time, we facilitate the procurement and management of funds to support the ZWNF/NAG Conference on Zoo and Wildlife Nutrition, as well as to support research projects that further the understanding of exotic animal nutrition.

## Board of Directors

The Board of Directors remained composed of the same individuals through 2019 as the previous year. The bylaws of the Foundation provide for the timely rotation of Board members to cultivate new ideas and involve other zoo nutrition professionals in idea generation and development. In 2021, Kerri Slifka will rotate off and we will seek another board member to replace her.

The current ZWNF Board consists of Barbara Henry, MS (President), Mike Maslanka, MS (Vice President), Shannon Livingston, MSc (Secretary), Ann Ward, MS (Treasurer), Kerri Slifka, MS, Liz Koutsos, PhD and Mark Griffin, PhD.



# Report on the 2019 ZWNF/NAG conference



The 13<sup>th</sup> Biennial ZWNF/NAG Conference on Zoo and Wildlife Nutrition was held September 29-October 2, 2019 in Saint Louis, MO in conjunction with American Association of Zoo Veterinarians (AAZV), American Association of Fish Veterinarians (AAFV), and ExoticsCon. We had a total of 95 individuals register for the conference. The conference started off with a workshop focused on assessing the nutritional welfare of animals. The goal of the workshop was to create a practical set of tools to assess animal welfare associated with diets, nutrition, and nutritional husbandry. Session topics included microbiome and GI tract function, vitamin & mineral nutrition, sustainability in zoo nutrition, insects in exotic animal diets, free-ranging nutrition & practical feeding in two parts, and herbivores. Social events included the Icebreaker at City Museum, the SCARF Fundraiser/Game night (where we raised the most money ever, details in the next section), and Zoo Day at Saint Louis Zoo.

For more than 20 years, we have linked our Conference with that of the American Association of Zoo Veterinarians (AAZV). We made (and continue to affirm) this strategic decision in order to increase opportunities for interaction between our groups and to increase veterinary access to the information we share. Over the years, that has led to us developing strong relationships with a few veterinarians in the group who have a long-standing interest in nutrition but has not significantly increased the overall veterinary interaction at our meeting. In recent years, we have discussed new ways of stimulating that interest and involvement, and in 2019 we made perhaps the biggest stride to that end with the inclusion of continuing education (CE) credits (for those vets eligible) through the American College of Zoological Medicine (ACZM). The ACZM is a registered veterinary specialty college by the American Veterinary Medical Association for sponsoring CE credits. Annually, many of our zoo veterinarians are required to further develop their knowledge base through continuing education. By offering these credits as part of our Conference, it allowed vets to attend not only their sessions, but ours, while earning the same CE credits. This significantly increased the veterinary presence at many of our sessions, in some cases creating “standing room only” situations for some of the most popular. Moving forward, we

plan to continue the practice of offering CE credits to eligible vets as a way of fostering continued camaraderie and communication across our groups.

We could not have delivered the Conference without the support of our sponsors. We received significant financial support from Rodent Pro, Mazuri Exotic Animal Nutrition, Central Nebraska Packing, and Nestle Purina Pet Care Global Resources. We accepted sponsorship at many levels all contributing to a successful conference and support of ZWNF goals. We thank all the sponsors, some of which have been supporting our conferences for more than two decades.

## Roy McClements Student-Keeper Competition

The Foundation provides awards for students who attend the Conference and deliver exemplary oral or poster presentations of their work. These awards are given in honor of Roy McClements, PhD who, through his brief time with us, shared with and taught the next generation of zoo professionals. The competition is coordinated by Brian Rude, PhD, Mississippi State University. We are pleased to report the winners:



**Fiona Sach – University of Nottingham**

Oral presentation 1<sup>st</sup> place winner \$800

EXPLORING HOW MINERAL PROVISION ACTS  
AS A DRIVER FOR AFRICAN ELEPHANT

(*Loxodonta Africana*) MOVEMENT AND CONSIDERING  
HOW THIS COULD BE USED TO REDUCE HUMAN-  
ELEPHANT CONFLICT (HEC). Graduate student,  
University of Nottingham.



**Katrina Eschweiler, MS– North Carolina State University**

Oral presentation 2<sup>nd</sup> place winner \$500

FACTORS AFFECTING THE LONGITUDINAL STABILITY OF THE  
GASTROINTESTINAL MICROBIOME IN GORILLA (*Gorilla gorilla gorilla*) UNDER MANAGED  
CARE. Graduate student, North Carolina State University.





## Roy McClements Student-keeper Competition Winners

Fiona Sach, (left) and  
Katrina Eschweiler, MS (right)  
with Brian Rude, PhD (center).

This year participation support (\$150) was given to all students entered in the competition who did not receive awards. The intention is to encourage more student participation. Students receiving support were:

Tarra Freel – North Carolina State University

Oral presentation

CANE TOAD (*Rhinella marina*) VITAMIN A, VITAMIN E, AND CAROTENOID KINETICS.

Graduate student, North Carolina State University.

Sungho Do – University of Illinois

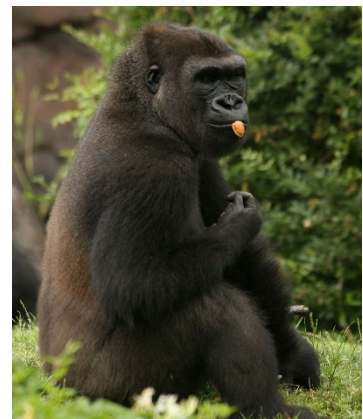
Oral presentation

TRUE NUTRIENT AND AMINO ACID DIGESTIBILITY OF BLACK SOLDIER FLY LARVAE  
DIFFERING IN LIFE STAGE USING THE PRECISION-FED CECETOMIZED ROOSTER ASSAY.

Graduate student, University of Illinois.

## Small Grant Fund

The ZWNF has established an annual research grant for \$1,000 and an annual education/travel grant for \$500. We collaborate with the NAG to maximize the impact professional zoo nutritionists have on the care and management of current and future collections, as well as on training and leadership of the next generation of zoo nutritionists. Research to contribute to the field of zoo and wildlife nutrition, as well as funding to further education, are consistent with ZWNF goals and have been identified as NAG scientific and operational priorities, both of which will be supported by these grants.



# The Foundation offered 2 grants in 2019. Congratulations to our grant winners!

Larisa Jancewicz



The **research grant**, \$1000 grant was awarded to Larisa Jancewicz, PhD at the Calgary Zoo for her work with near infrared spectroscopy.

NEAR INFRARED SPECTROSCOPY AS A TOOL TO PREDICT THE COMPOSITION OF WHOLE PREY AND OTHER FOOD ITEMS FED TO CARNIVORES AT THE CALGARY ZOO

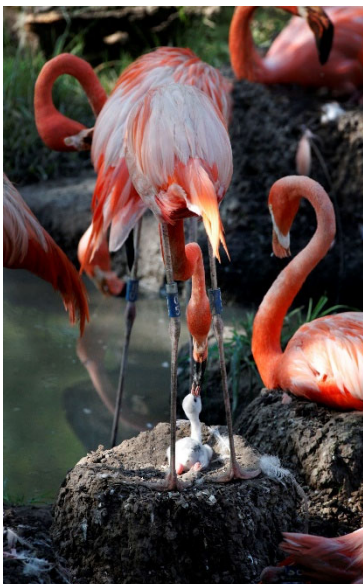
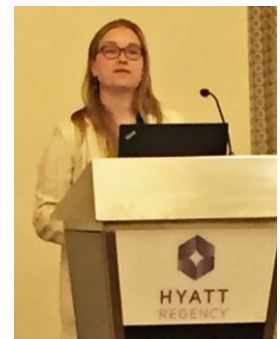
Larissa Jancewicz, PhD  
Zoo Nutritionist – Commissary Supervisor  
Calgary Zoo

The **travel grant**, \$500 award was given to Siga Lapinskas, MS. Siga used this grant to, travel to and present at the ZWNF/NAG meeting during the fall 2019.

PALATABILITY OF A BEEF-BASED CARNIVORE DIET WITH FIBER MIXTURE.

Siga Lapinskas, MS  
Research Associate  
San Diego Zoo Global

Siga Lapinskas



# Susan Crissey Animal Nutrition Residency Fund (“SCARF”)



SCARF was established on November 14, 2002, by the Chicago Zoological Society and the NAG. SCARF was established to acknowledge and honor the significant impact that Sue Crissey, PhD had on the field of zoo nutrition during her fifteen (15) years at Brookfield Zoo. Sue died at 51 after an extended battle with ovarian cancer. During Sue’s time at the Brookfield Zoo, she expanded the nutrition program from one of diet purchase and preparation to a program of cutting-edge research and problem solving. She led the development of the institutional coalition called the Zoo Nutrition Network.

Photo Credit: Paul Fahy She and her staff were active in publishing many papers and worked to integrate zoo animal nutrition research with nutritional studies of wild-living animals. One of Sue’s greatest commitments was to train, professionally develop, and engage the next generation of zoo nutritionists. To that end, Sue participated in the training of three residents during her time at Brookfield and those individuals became successful zoo nutritionists at other AZA zoos. It is the hope that SCARF will continue to celebrate Sue’s tremendous achievements and contributions to expanding the field of zoo animal nutrition by providing support for residencies in zoo animal nutrition that will improve the welfare of animals in zoos and aquariums.



The 2018 SCARF Resident at the Toronto Zoo, Sarra Gourlie, MSc was hired Sarra full-time at Toronto in February of 2019. This left the SCARF resident position open. Toronto was committed to this residency program and agreed to replace the funds used for Sarra’s eight months of training to hire another resident. We look forward to sharing more about the next resident candidate and the Toronto Zoo program in 2020.

## **SCARF Residents**

**2007 Kibby Treiber, PhD** -Fort Worth Zoo. Current position, Zoo Nutritionist, Miami Zoo

**2011 Adam Reppert, MS, RD, LDN** – Fort Worth Zoo. Current position, Staff Nutritionist, Fort Worth Zoo

**2018 Sarra Gourlie, MSc** – Toronto Zoo. Current position, Supervisor Nutrition Sciences, Toronto Zoo



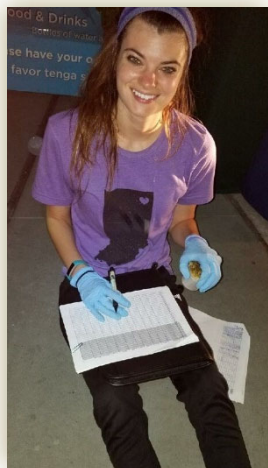


## Projects/Past Grant Updates



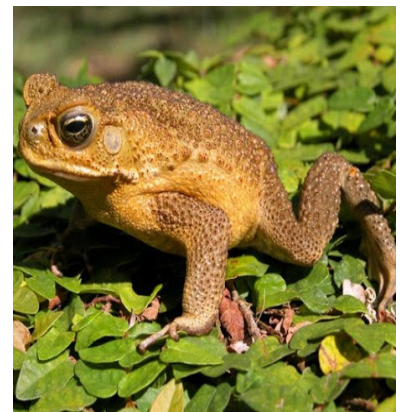
Jordan Wood

In 2018, Jordan Wood also received a **travel grant**, \$500. Her report was recently submitted detailing the use of the funds. Jordan reported: I used the travel grant money to attend CNS in Quebec City in 2018 to present a poster on the analysis of the novel North Carolina Zoo African elephant (*Loxodonta africana*) diet and circulating vitamin and carotenoid concentrations. During the poster session I got to share my research with a variety of people who gave me the opportunity to discuss my findings further while providing me with constructive feedback to use later. During the conference, as a whole, I had the opportunity to listen to a number of great speakers on a variety of nutritional topics that helped to increase my knowledge of comparative nutrition and research methodology. I also had the opportunity to network with nutritionists, scientists, and industry leaders from around the world which provided me with a wide number of contacts for my future endeavors and career goals.



Tarra Freel

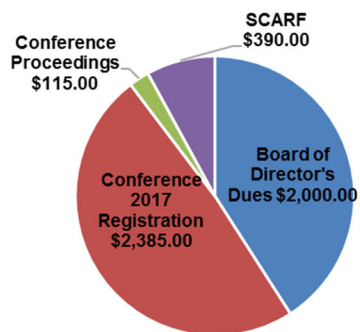
In 2018 the **research grant** was awarded to Tarra Freel, to study the impacts of diet transition on circulating vitamin A, vitamin E, carotenoids, and stress metabolites of free-ranging cane toads (*Rhinella Marina*.) Tarra's research results imply that additional vitamin and carotenoid supplementation may be needed for cane toads in order to maintain the nutrient concentrations typical of their free-ranging diets. The research also showed while in the hands of human care the toads were found less stressed. Using this species as a model for research in nutrient values and potential stress markers can help other amphibian species by providing comparative data. This work is part of Tarra's Master's work in the Department of Animal Science at NC State



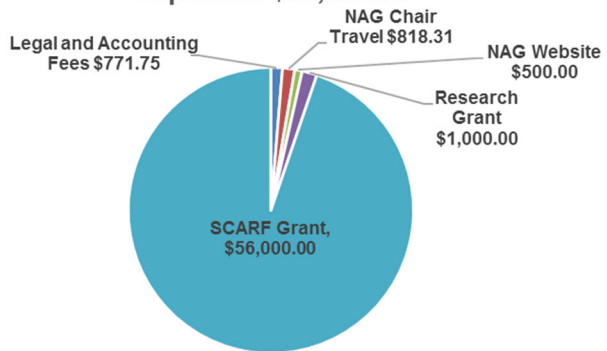
# 2018 and 2019 Financial Statements

One of the main roles of the ZWNF and NAG is to host the Conference on Zoo and Wildlife Nutrition every other year. Because of this, the Foundation revenue and expense reports look very different between conference and non-conference years (due to registration fees, sponsorship donations, and the off-setting conference expenses). Because of the disparity, we have shared the previous two years of financial statements to highlight the importance and impact of the Conference.

**Zoo Wildlife Nutrition Foundation  
Revenues 2018 \$4,890**

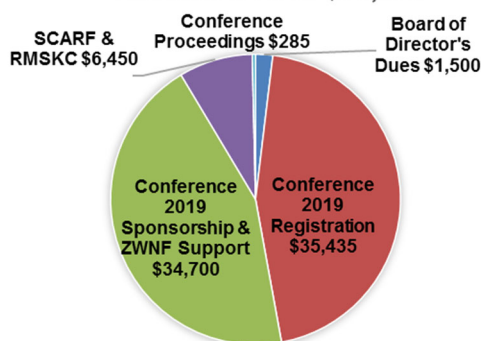


**Zoo Wildlife Nutrition Foundation  
Expenses \$59,090.06**

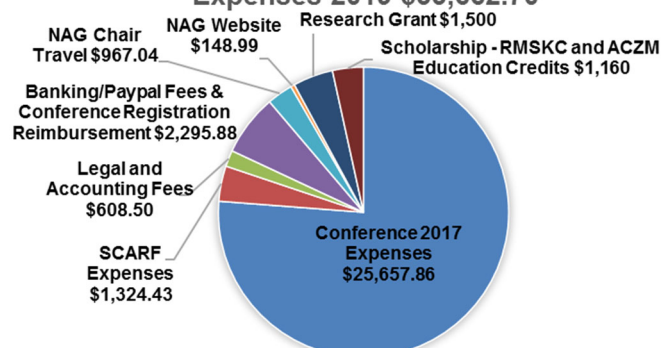


2018 was not a Conference year. There were few Conference-related additions (registrations and proceedings sales) that were accounted for in 2018 instead of 2017. Note the considerably smaller revenue total for the non-Conference year. Expenses exceeded revenues by \$54,200.06 primarily due to the award of the SCARF Residency grant to the Toronto Zoo under the direction of nutritionist Jaap Wensvoort. Funding supports a robust 2-year training experience for a future zoo nutritionist. Also, notable as a first-time expense, was the award of the \$1000 research grant to Michelle Shaw (Taronga Zoo) and Mike Power (Smithsonian National Zoological Park and Conservation Biology Institute) for research conducted on nutritional needs of pangolins.

**Zoo Wildlife Nutrition Foundation  
Revenues 2019 \$78,370**



**Zoo Wildlife Nutrition Foundation  
Expenses 2019 \$33,662.70**



2019 was a Conference year. The Conference was held in St. Louis, Missouri, in conjunction with AAZV, and was well-attended by zoo nutrition professionals and veterinarians alike.

Note that sponsorship donations and conference registration made up the largest portions of revenue, whereas conference expenses (meals, rooms, transportation, audio-visual, etc.) accounted for the largest portion of expenses. The SCARF fundraiser was the most successful to date generating \$4,212.63 in revenue. The increased revenue was due to an increase in funding as well as a decrease in expenses and generous donations made for auction items. It was an entertaining evening with carnival games, an auction and light refreshments. Also supporting our goals funds were used for student awards/scholarship, continuing education credits, and research. For the year, revenues exceeded expenses by \$44,707.30.

## CONSIDER A GIFT

The Zoo and Wildlife Nutrition Foundation was created to support the important work of not only the AZA Nutrition Advisory Group, but of the profession of zoo and wildlife nutrition as a whole. The more we learn about appropriate nutrition and diets for wildlife in human care, the greater our ability to manage and reproduce those animals and help maintain sustainable populations. The more we learn about their free-ranging counterparts, and the ability of habitats to meet the nutritional needs of those animals, the more we can help manage the animals and ecosystems for sustainability.

The Zoo and Wildlife Nutrition Foundation supports efforts in both realms – for the future of sustainable wildlife populations. We sincerely appreciate all of those who have donated to help support us to date. Please consider supporting us in our critical endeavors through a financial gift (visit the NAG website to do so: <https://nagonline.net/287/sue-crissey-animal-nutrition-residency-fund-scarf/> or <https://nagonline.net/zwnf/>). Donations, whether large or small, go directly to achieving our mission. We appreciate your support!

## Get to know our Board of Directors

### Barbara Henry, M.S.



*Barbara has been the curator of nutrition at the Cincinnati Zoo & Botanical Garden for the past 15 years and worked 10.5 years at the Brookfield Zoo as the second nutrition resident and staff nutritionist. Additionally, she is an amazing baker.*



## Mike Maslanka, M.S.

*Mike is the Head of the Department of Nutrition Science at the Smithsonian National Zoological Park and Conservation Biology Institute, and the Chair of the AZA Nutrition Advisory Group. He is active in clinical nutrition, lab- and field-based nutrition research, commissary operations, and day to day land resource management at both Zoo facilities.*



## Shannon Livingston, M.Sc.



*Shannon has been part of the Nutrition team at Disney's Animal Kingdom for 14 years. Prior to that, Shannon worked in the Animal Nutrition Center at the Toronto Zoo for 12 years.*

## Ann Ward, M.S.

*Ann has been the Director of Nutritional Services (formulation, operations, and laboratory) at the Fort Worth Zoo for 26 years. Prior to that she completed the first zoo nutrition residency at the Brookfield Zoo with Sue Crissey, PhD.*

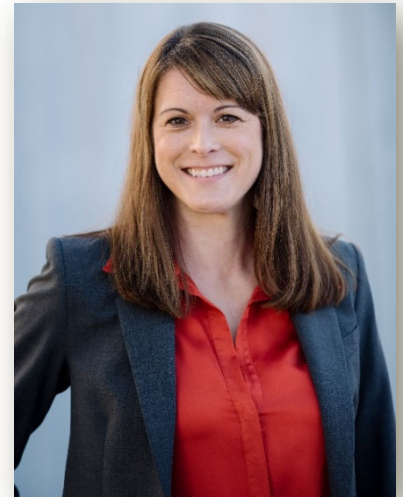


## Kerri Slifka, M.S.



*Kerri has been Curator of Nutrition at Dallas Zoo for the last 14 years and serves as Nutrition Co-Advisor to the Okapi SSP and Penguin TAG. Prior to Dallas, she spent 20 years in Brookfield Zoo's Nutrition Services Department in various roles from keeper to staff Nutritionist.*

## Liz Koutsos, Ph.D.



*Liz has spent more than 20 years in the comparative nutrition field, working in academia, the feed manufacturing industry, consulting with zoos and aquariums, and now in rearing insects for animal feed applications. Her favorite animal, other than black soldier fly larvae, is the walrus.*

## Mark Griffin, Ph.D.



*Mark is retired and spends much of his time in his orchard and gardens. He served as the President of Animal Nutrition at Omega Protein before it was purchased off the NYSE and taken private. Before that, Mark was with Purina Mills/Land O'Lakes and was the Director of Zoo and Aqua.*



## Thank you for your support!

What an incredible year we have had thanks to the following donors.

### Above \$5,000

RodentPro Premium Nutrition  
Mazuri Exotic Animal Nutrition  
Central Nebraska Packing Inc.  
Nestle Purina Pet Care Global Resources Inc.

### Below \$500

The Anole and Rodent Source  
Enviroflight LLC  
DHIA

### \$1,000- \$5,000

Milliken Meat Products Limited  
St. Louis Zoo  
McRoberts Sales Co. Inc.  
Bionic Zoo & Aquarium Inc.  
Timberline Fisheries Corp  
Heartland Assay, LLC  
Lab Supply  
Raw Basics, LLC  
Disney's Animals, Science and Environment



### \$500 - \$1,000

Nu/Zu Anderson Feed Company  
Reliable Protein Products Inc.  
Zeigler