



**1 January- 31 December 2021
2021 Annual Report for
the Zoo and Wildlife
Nutrition Foundation**



Table of Contents

Zoo and Wildlife Nutrition Foundation

INTRODUCTION

3 - Our Mission Statement

4 - Letter from the President

14 – Meet our board members



“I didn’t save the world, but I did try to help the world’s animals survive by being a Zoo Nutritionist.”

- Sue Crissey

ABOUT

5 - Conference announcement

9 - Financial Statements

12 - Donor Recognition

16 - How to become a part of the ZWNF

RESEARCH & PROJECTS

7 - SCARF

10 - Research Grant Fund



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!



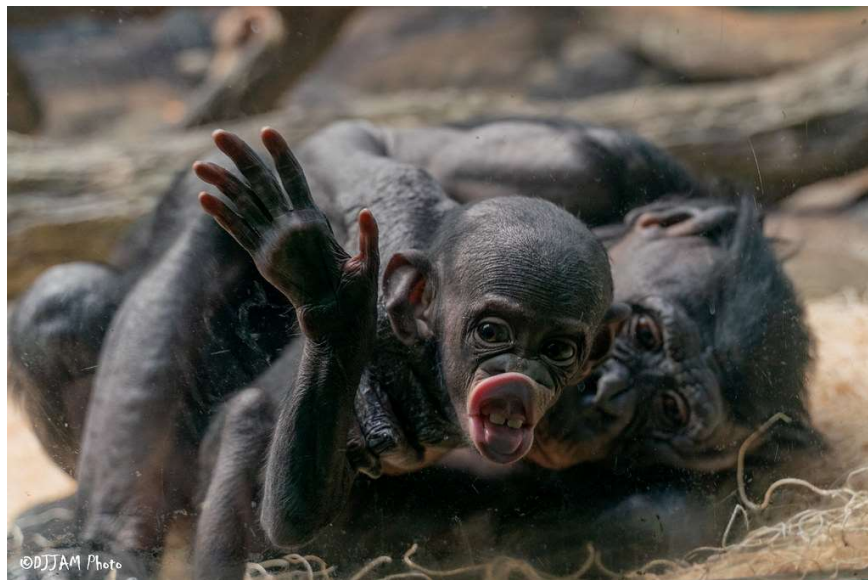
ZWNF Definition, Mission, and Focus

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 support research projects that further the understanding of exotic animal nutrition.



FROM THE PRESIDENT'S DESK

Hello Everyone!

Many of us entered 2021 with high hopes of it more closely resembling a simpler time prior to when the SARS CoV 2 pandemic changed our worlds. In fact, 2021 did not look much different from the previous year either in terms of ongoing pandemic concessions or the majority of us having to stay the course, as we provided relentless, front-line nutrition care for the animals we help manage. We now look forward, with high hopes, of successfully evolving and co-habiting in this world where we have another, now endemic, virus. Given our successes over the last two years, those hopes appear well-placed.

Through the herculean efforts of a dedicated group of ZWNF and NAG members, we managed to quickly adjust plans and hosted the ZWNF/NAG Conference on Zoo and Wildlife Nutrition virtually in October. With nearly 260 attendees, we reached the greatest audience of any of our previous conferences, and maybe even helped define our conference methods for the future. As part of the conference, students and keepers were awarded for the best oral and poster presentations, and we held our most successful fund-raiser ever. The next Conference is slated for 2023 in Nashville where, hopefully, many of us can meet in person.

We are happy to report that the third SCARF resident, Siga Lapinskas, is successfully finishing her final year of the residency. We'll provide additional details in this report. We awarded \$7500 in research grants to three deserving projects this year, which are also detailed herein. We look forward to hearing the results of those projects in the next annual report.

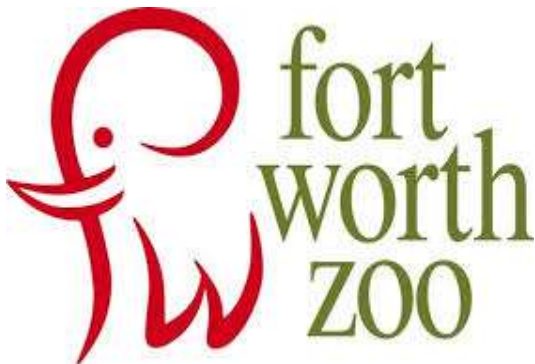
As always, we appreciate and encourage your continued interest in the Foundation and its mission, as well as your support for the work that the Foundation does to train the next generation of zoo nutritionists! Thank you!

Sincerely,



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





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Liz Koutsos, PhD

2021 ZWNF CONFERENCE

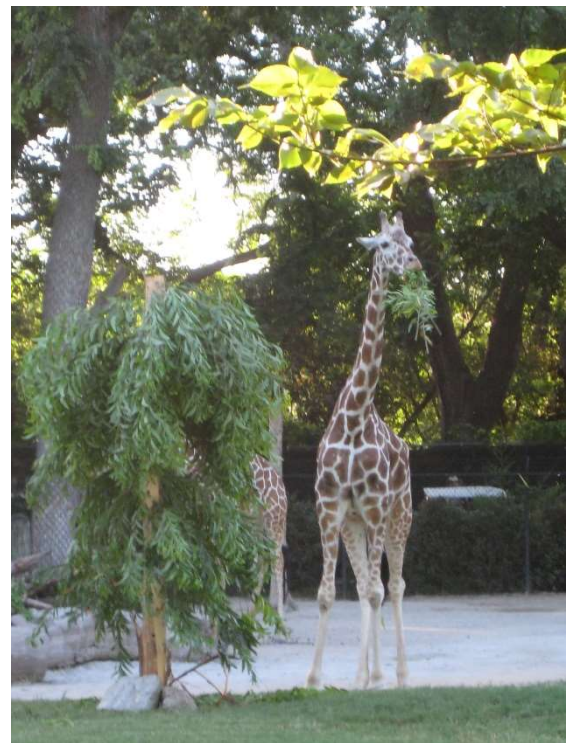
Virtually, everywhere!

Despite our best intentions, it was not possible to hold an in-person meeting in 2021. Therefore, with tremendous effort from a very large committee, we held the ZWNF/NAG Fourteenth Conference on Zoo and Wildlife Nutrition virtually. We had almost 260 registrations with many great talks shared. We had five invited speakers and 40 other presentations from many different countries.

Each day we presented talks about different topics, beginning the conference with presentations on aquatics and ending the meeting chatting about biomarkers. In between, we covered diet assessments, primates, milk, technology in comparative animal nutrition, and bears.

Our next conference will be in fall of 2023 in Nashville in conjunction with the American Association of Zoo Veterinarians meeting. Stay tuned for more information on how to become involved in the planning.

Our conference is held every other year at unique locations across the world. The 2021 conference went virtual.



Roy McClements Student-Keeper Competition

The Foundation provides awards for students and keepers who attend the Conference and deliver exemplary oral or poster presentations of their work. These awards are given in honor of Roy McClements, Ph.D. who, through his brief time with us, shared with and taught the next generation of zoo professionals. The competition was once again coordinated by Brian Rude, Ph.D., from Mississippi State University. We are pleased to share the results of the competition.

Rebecca Garlinger won first place overall student-keeper written and oral for her presentation on “EVALUATING THE NUTRITIONAL CONTENT OF INSECT DIETS FED TO FLORIDA GRASSHOPPER SPARROWS (*Ammodramus savannarum floridanus*) AT WHITE OAK CONSERVATION.”

Leah Crenshaw won first place for long oral presentation. She presented a paper titled, “COMPARISON OF PLUMAGE INTENSITY IN FLORIDA GRASSHOPPER SPARROW (*Ammodramus savannarum floridanus*) WHEN GIVEN NEKTON-S OR NEKTON-GELB DIETARY SUPPLEMENT AT WHITE OAK CONSERVATION, WITH EVIDENCE OF SEXUAL PLUMAGE VARIATION.”

Virginia Glick won first place for short oral presentation with her paper on “MACRONUTRIENT COMPOSITION OF MILK FROM THREE CERCOPITHECOIDEA SPECIES: OLIVE BABOONS (*Papio anubis*), RHEUS MACQUE (*Macaca mulatta*), AND PIG-TAILED MACAQUE (*Macaca nemestrina*).”

Elizabeth Wenker won first place for long written paper titled, “FAT SCORING IN FOUR SPARROW SPECIES AS AN ESTIMATE OF BODY CONDITION: A VALIDATION STUDY.”

Christina Burnham won first place for short written paper on “COMPARISON OF THREE MICROBIOME PRESERVATION METHODS WITHIN MANAGED SOUTHERN WHITE RHINOCEROS (*Ceratotherium simum simum*).”



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, Ph.D. 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. 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.



SCARF Residents



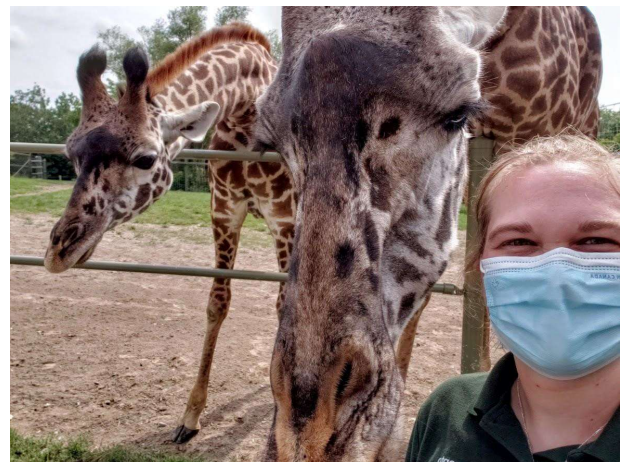
2007 *Kibby Treiber, Ph.D.* - Fort Worth Zoo. Current position: Zoo Nutritionist, Miami Zoo.

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

2020 *Siga Lipinkas, MS* – Toronto Zoo. Current resident.

Progress report for Siga Lapinkas

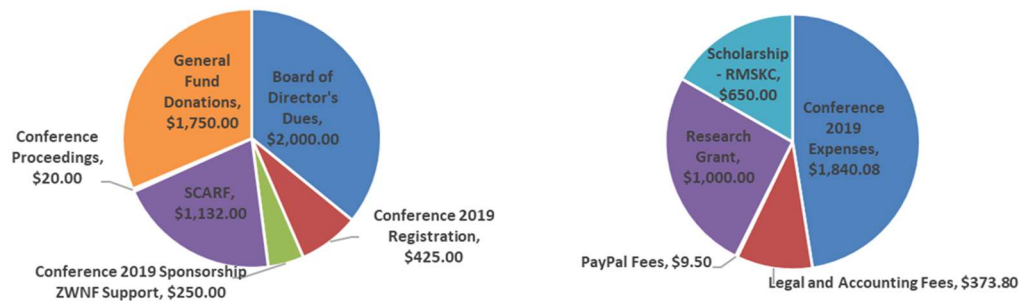
Siga Lapinkas has been training at Toronto Zoo for a year and a half. The first portion of her time focused on operations at the zoo and the science behind zoo nutrition. That included clinical cases, diet evaluation, technological solutions, and professional development to name a few. The next portion of her residency training focused on research, the browse program, and connecting with the zoo nutrition community. She was able to attend the Practical Zoo Nutrition Management course at the Smithsonian – Mason School of Conservation.



2021 Financial Statements

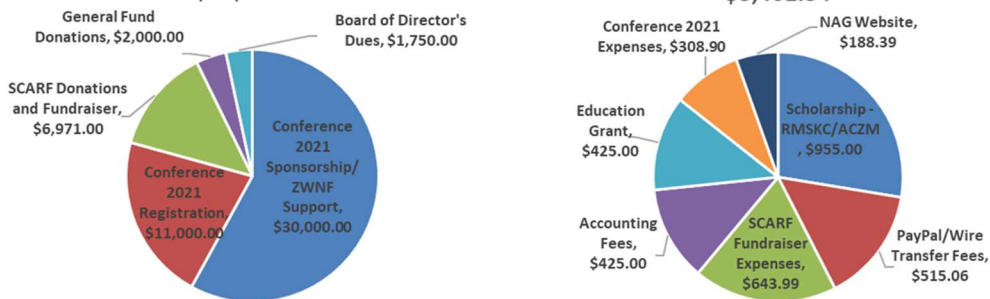
One of the main roles of the ZWNF and NAG is to host the Conference on Zoo and Wildlife Nutrition every other year. Because of this, the Foundation revenue and expense reports look very different between conference and non-conference years (due to registration fees, sponsorship donations, and the off-setting 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 and the fund raising that occurs at that time.

Zoo Wildlife Nutrition Foundation Revenue 2020 \$5,577.00 Zoo Wildlife Nutrition Foundation Expenses 2020 \$3,873.38



2020 was not a Conference year. There were a few Conference-related additions (registrations and proceedings sales) that were accounted for in 2020 instead of 2019. Note the considerably smaller revenue total for the non-Conference year. A few 2019 conference expenses and the research grant award were the main contributors to expenses. Revenues exceeded expenses by \$1,703.62, primarily due to board of director dues and general fund donations. This is the first year with unsolicited general fund contributions from a corporation and individuals.

Zoo Wildlife Nutrition Foundation Revenue 2021 \$51,721.00 Zoo Wildlife Nutrition Foundation Expenses 2021 \$3,461.34



2021 was a Conference year. The Conference was virtual this year; and was well-attended by zoo nutrition professionals, students, and veterinarians alike. Note that sponsorship donations and conference registration made up the largest portions of revenue. Conference expenses were extremely low without the onsite conference related expenses. The SCARF fundraiser outdid the previous conference as the most successful to date, generating \$6,327.01 in revenue! The increased revenue was due to an increase in generous donations for auction items (including some fierce bidding!) and the reasonable expenses associated with the on-line process. Also supporting our goals, funds were used for student awards/scholarship, continuing education credits, and the education grant. For the year, revenues exceeded expenses by \$48,259.66.

ZWNF EDUCATION AND RESEARCH GRANTS

In 2021, due to the fact that our conference was virtual, we did not offer an Education & Training Grant. However, we were able to offer the ZWNF Research grant, for which we increased the funding potential to \$5000 per project. We had many excellent proposals and were able to support three, resulting in our largest funding award year ever, totally \$7477 in Research Grant support.

Congratulations to each of the ZWNF Research Grant Recipients:

Ange van-Heugten and Moresco. A Pilot Trial to Investigate Nutritional and Microbiome Comparison in Chimpanzees (Pan troglodytes) North Carolina State University.

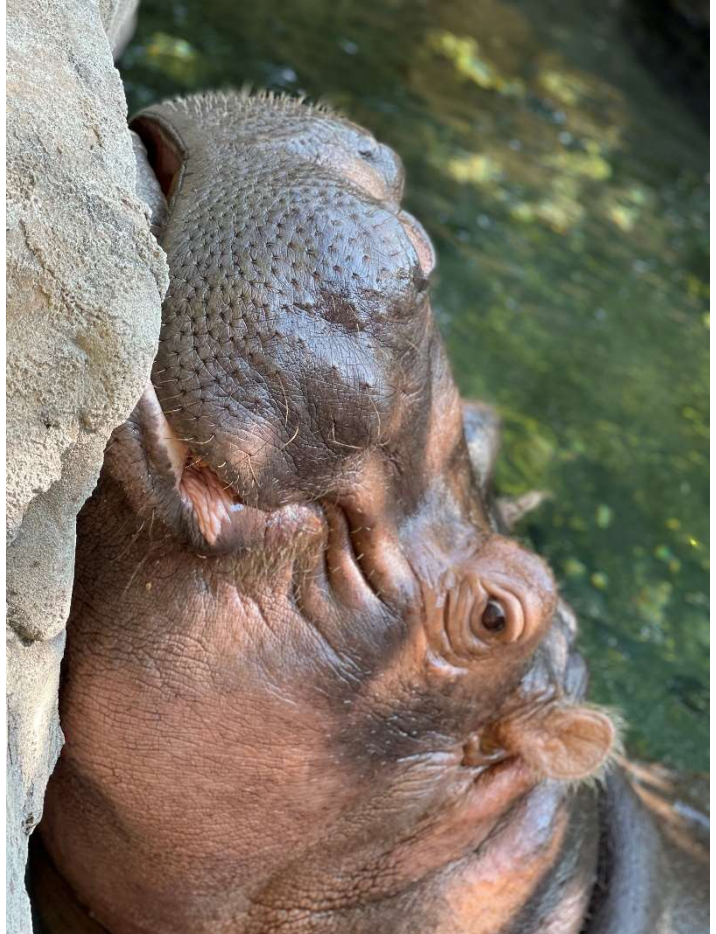
Jancewicz, Swift and Juarez. Feasibility of using Near Infrared Spectroscopy in Zoo Diets. Calgary Zoo, Trouw Nutrition, Lacombe.

Koester, Dunham, Dierenfeld and Plocek. Investigating the effects of diet and environment on the composition of the gut microbiome in Matschie's tree kangaroos. Cleveland Metroparks Zoo, Case Western Reserve University, Nottingham Trent University.

In 2022, we will be providing a Travel & Education Grant to facilitate attendance at the 2022 Comparative Nutrition Society Meetings in Solitude, Utah. Thanks to our fabulous sponsors and our continued tradition of content-rich conferences, we have been able to increase our support of research and development that makes a difference to the nutrition of animals under human care. Keep an eye out for the call for grants, and please apply. If you, or your employers, are interested in providing funding to support these valuable applied nutrition training and research opportunities, please reach out to ZWNF at barbara.henry@cincinnati-zoo.org.

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 better 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 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.

DONOR RECOGNITION

Thank you for your support!

Above \$5000

RodentPro Premium Animal Nutrition -Platinum Conference Sponsor

\$1,000-\$5,000

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Milliken Meat Products Limited – Bronze Conference Sponsor

Omega Protein – Bronze Conference Sponsor

At \$500

Layne Laboratories, Inc. – Conference Supporter

NuZu/Anderson Feed Company – Conference Supporter

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“My Favorite Animal is the One That Eats” - Barbara Henry



Barbara Henry, M.S.

Barbara has been the curator of nutrition at the Cincinnati Zoo & Botanical Garden for the past 17 years and worked 10.5 years at the Brookfield Zoo as the second nutrition resident, and then staff nutritionist. Additionally, she loves to experiment with recipes in the kitchen and plant new perennials in her gardens.



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 27 years. Prior to that she completed the first zoo nutrition residency at the Brookfield Zoo with Sue Crissey, Ph.D.



Mark Edwards, Ph.D.

As Professor at California Polytechnic State University, Mark shares a passion for animal nutrition with students drawing upon his experience leading nutrition programs of the Zoological Society of San Diego and Smithsonian National Zoological Park. Mark was introduced to zoo animal nutrition when selected to serve as an undergraduate research intern by Sue Crissey, Ph.D.



Liz Koutsos, Ph.D.

Liz has spent more than 21 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.



Want to be part of the Zoo and Wildlife Nutrition Foundation? Find out what it takes to apply at NAGonline.net