



2017 Annual Impact Review

Making an Impact Together

Chicago Zoological Society
Inspiring Conservation Leadership



CZS Firsts

Eighty-four years ago, the Chicago Zoological Society opened the gates to Brookfield Zoo, a place where people could see and learn about animals they might never encounter otherwise.

Over the years, we developed as a center for conservation science where humans could further connect with animals and the natural world and become inspired to champion environmental protection.

Today, we reach out into Chicago-area neighborhoods with nature-inspired programming, we are one of the

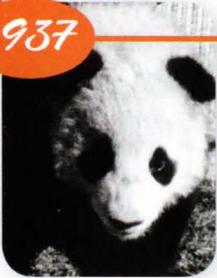
world's most pioneering training facilities for educators and veterinarians, and we are leading the field in serving visitors of all abilities.

With a legacy as long and far-reaching as ours, it's no wonder we've achieved many firsts.

Here are a few:



1937



Exhibited the first giant panda in North America (Su-Lin).

1941

Became the first U.S. zoo to successfully welcome the live birth of a black rhino (Georgie-Joe).

1959



Became the first U.S. zoo to successfully have a live okapi birth (Mr. G.).

1961



Opened the first inland Dolphinarium in the United States.

1975

Became the first zoo outside Australia to successfully breed southern hairy-nosed wombats.

1982

Opened the first immersive rain forest exhibit, TROPIC WORLD.

1986



Brookfield Zoo veterinarians performed the first bilateral hip replacement surgery for a gorilla (Beta, a female western lowland gorilla).

1990

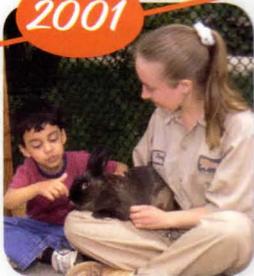
Dr. Robert Lacy developed VORTEX, the first software program used to cooperatively manage zoo breeding programs around the world.

VORTEX is now part of the free Species Conservation Toolkit Initiative, a group of software programs used to help secure the future of wildlife species in a changing world.

1994

Brookfield Zoo veterinarians and neurosurgeons from Loyola Medical Center performed the first-ever brain surgery on a great ape, removing a tumor from Chicory, a silverback western lowland gorilla.

2001



Opened HAMILL FAMILY PLAY ZOO—the first exhibit based on nature play for children ages birth-10 and their families.

2002

Hosted the first conference on conservation psychology, the study of how people connect to animals and nature, which was pioneered here.

2005

Brookfield Zoo veterinarians, along with doctors from Adventist La Grange Memorial Hospital, completed the first successful uterine fibroid embolization (UFE) procedure on Beta, the female western lowland gorilla who also received the hip replacement in 1986.

2016

Became the first zoo in the world to receive the "Humane Certified™" seal from the American Humane Association.

Launched the world's first zoo-based Radiology Consultation Service under the direction of Dr. Marina Ivančić, the first and only full-time radiologist at any zoo or aquarium.



HUMANE CERTIFIED
A PROGRAM OF AMERICAN HUMANE

2017

Celebrated the first graduating class of Project SEARCH interns. Project SEARCH helps individuals with disabilities prepare to join the workforce, and as part of our expanding "A Zoo for All" initiative, we were the first organization in Illinois to work with Project SEARCH interns ages 24 and older.

President's Q&A

Join us as we talk with Dr. Strahl about human connections with the natural world and how the Society plays a role.



Dr. Stuart Strahl at Misericordia, a Chicago-based organization that serves individuals with developmental delays.

You may already know that the Chicago Zoological Society's Dr. Stuart Strahl has been leading our institution for 15 years.

He's a career conservationist with deep experience in applied science, restoration ecology, public policy, and nonprofit management. But you may not know that his favorite animal is the hoatzin, a bird he studied in South America, and that he spent much of his childhood immersed in nature on his family farm. Dr. Strahl's vision is that one day conservation will become a mainstream priority in society. He hopes that individuals will feel deep connections to the natural world—just as they do to their own family—and will strive to provide for and protect it.

Q: The Chicago Zoological Society was the birthplace of conservation psychology—the study of people and their connections to the natural world and how that shapes their behavior. Why are those connections important? How does exposure to the natural world foster stewardship?

A: It's very difficult to rally around an abstract idea. When most of us become advocates for a cause or an issue, it's because we feel a personal connection to it—the issue has reached in and

affected our own lives. It's harder when distance and dwindling populations mean that most people will never see a black rhino in the wild. We don't always instantly see the intricate connections between plants, wildlife, and human beings—that disruptions in one area inevitably have rippling effects everywhere. For those of us living in urban environments, those connections are even more obscured.

The Society has been studying the importance of these connections for decades. We know that if people read about an endangered animal, they may take notice, feel empathy. But they likely will then move on to the next item on their list of concerns. However, it's a completely different story when we stand inches away from a polar bear and see his eyes, watch him swim and interact with his environment. The polar bear is no longer an idea, it's real life. And when we are shown specific actions we personally can take to protect this species, we are given the tools to move from empathizers to champions. We are more likely to become ardent advocates for these animals and their native habitat. You may never get to the Arctic Circle, but by visiting the zoo, you can see a polar bear, learn about the species' struggle, and do something—today—to make a difference.

Q: Do you recall your own first feelings of connection to nature?

A: My brother and I were fortunate to live in a town bordering the natural areas of Long Island Sound and Pelham Bay Park in New York. We roamed outside for hours each day, catching tadpoles, hiking through swamps, camping in the woods, discovering owl roosts and dissecting pellets, fishing, and more. And just 20 minutes away was the Bronx Zoo. We also spent summers at my grandparents' farm on Maryland's Eastern Shore. There was simply no question whether I was connected to nature; I was immersed in it. These are the experiences that eventually led me to dedicating my life to conservation movements—first in South American rain forests, then in Florida's Everglades, and now here, in Brookfield, Illinois!

Q: The world is a constantly changing place. How has the Society evolved to address new realities and remain relevant in today's world?

A: While we remain a tremendously popular destination, providing families and school groups an opportunity to connect with animals, we are much more. We know that not everyone can get to Brookfield, Illinois. Working with community leaders, we reach out to residents in Chicago's underserved neighborhoods and provide them with programming and activities in their own libraries, schools, and community centers. We provide a continuum of educational programming that follows children practically from the moment they are born through college and into adulthood.

Many people don't know that, in partnership with colleges and universities, we provide several certification, professional development, and degree programs along with veterinary residencies and a new fellowship program that you can read more about on page 32.

Understanding that this generation of young people are digital natives, we have embraced social media, new platforms, and technologies to reach, inform, and inspire them. We've devised our own industry-

leading, state-of-the-art technology (our Species Conservation Toolkit Initiative) to predict future conservation issues. And, as a world-renowned animal care facility and training institution for the next generation of educators and veterinarians, we use—and help develop—state-of-the-art medical technology and equipment.

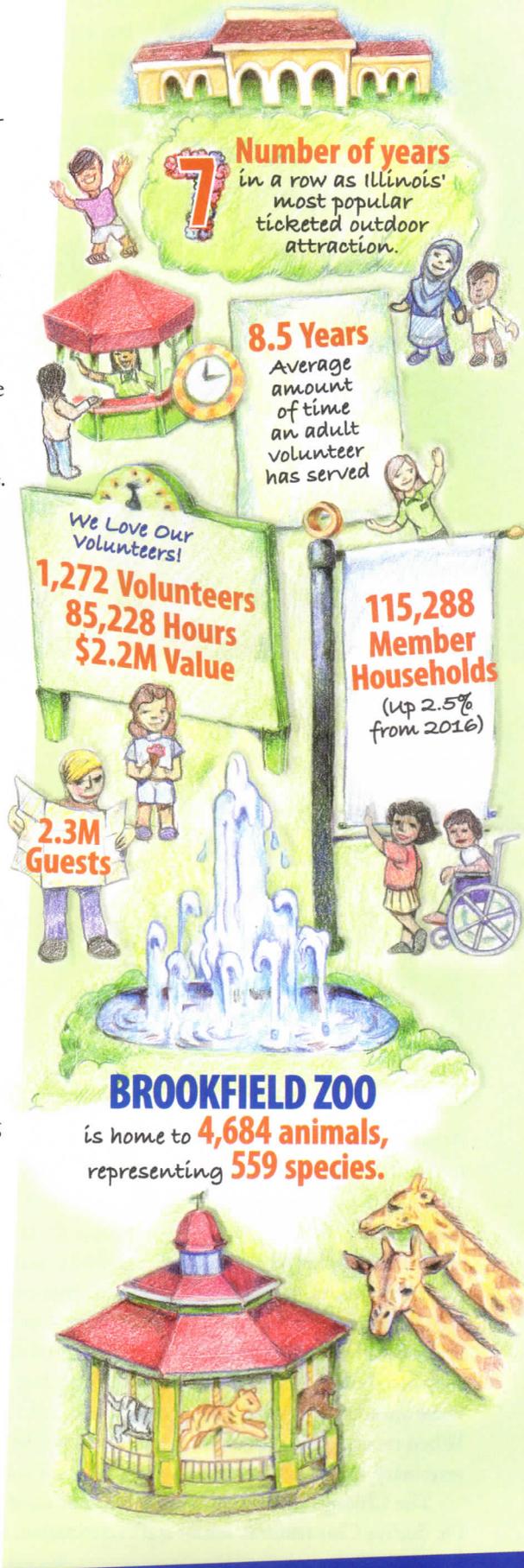
Finally, of particular importance to me, we are a zoo for everyone. From the diversity of our staff, to the care we take in creating habitats and environments suitable for each animal, to the delivery of thoughtful and inclusive programming, we are committed to making people of all abilities, backgrounds, and perspectives feel welcome. And, we are taking that commitment further by sharing our expertise and serving as a national model to show how that's possible.

Q: Looking ahead, what do you envision the role of the Society to be?

A: Our mission is more than words on paper. It is a living thing, woven into every activity, project, endeavor, and innovation. We are here to inspire conservation leadership by connecting people with wildlife, and that's a constant—our North Star. At the same time, we recognize that to remain relevant, we'll always need to learn, adjust, course-correct, and evolve, as we have since we opened our doors in 1934.

We work hard to establish and maintain relationships in fields ranging from animal care to early childhood development, to deepen connections here in our own Chicago-area neighborhoods and with conservation partners on every continent on Earth. By paying close attention, we have confidence that we will continue to build a conservation organization that can train the next generation while inspiring and engaging children and families. ■

Inside Our Zoo





Comfort & Care

Dr. Sathya Chinnadurai and Dr. Julie Balko (above), Dr. Mike Adkesson using Dr. Balko's pressure-sensitive walkway with a Humboldt penguin (above right) and a sea lion, which Dr. Balko extensively studied (bottom right).

If you've ever had surgery, you know how important anesthesia is. Whether it's a hip replacement or wisdom tooth removal, nobody wants to be awake for that!

Anesthesia also plays an important role in providing medical care to animals. Veterinarians will often use this tool during both surgeries and routine procedures—like a teeth cleaning or ultrasound—as it reduces stress for the animals when they're placed in an unfamiliar situation.

It's important to be sure the type and amount of anesthesia is right for each animal and each procedure. And, because animals differ in their physiology, anatomy, and the way they metabolize drugs, what we know about dog, cat, and horse anesthesia is not always transferable to wild animals. When treating these animals, specific expertise in the field of veterinary anesthesia for non-domestic animals is essential.

The Chicago Zoological Society has that expertise. Dr. Sathya Chinnadurai, senior staff veterinarian, is the only

veterinarian in the country with board specialties in both zoological medicine and anesthesia. He is committed to sharing his knowledge, and has helped us launch the first and only zoo-based Anesthesia, Analgesia, and Pharmacology program. This program's primary goal is to advance the standard of care for anesthesia and pain management of non-domestic animals.

The program includes the first and only zoo-based Anesthesia and Analgesia Fellowship, which is geared toward post-residency veterinarians with anesthesia or analgesic expertise. The one-year fellowship provides these veterinarians with additional experience with zoo and wildlife species. Fellows spend half their time providing clinical care for the animals at the zoo and half their time designing, conducting, and analyzing research data.

Dr. Julie Balko was our first Anesthesia and Analgesia Fellow. Prior to joining us in 2016, she had graduated from the University of Pennsylvania School of Veterinary Medicine and completed a residency in Anesthesiology at North Carolina State University.

The fellowship program appealed to Dr. Balko because she always had an interest in wild animals, but spent most of her time with domestic animals.

During her year at the zoo, she helped to investigate the use of a cutting-edge anesthetic monitoring device for fur seals and sea lions both in zoos and in Punta San Juan, Peru. (As diving animals, seals and sea lions have unique physiology that can pose added risk when they receive anesthesia, and so this makes anesthesia use more dangerous than in domestic animals and humans.) The device, which measures oxygen levels in the brain, is portable and much more reliable than traditional monitoring devices and may dramatically improve the care of these animals in zoos and in the wild.

Dr. Balko also evaluated a new anesthetic drug on several species of birds, and tested the merits of a pressure-sensitive walkway to more accurately understand pain associated with penguin

arthritis. Because animals in zoos often live much longer than those in the wild, and because we know animals often hide their pain (this is thought to be a survival mechanism), it has become more important for zoo veterinarians to find ways to identify and alleviate the aches and pains associated with aging patients. The walkway senses gait abnormalities or inconsistencies, which is especially useful in monitoring, and then treating, arthritis. The walkway can be used for many species in an array of environments, so the possibilities for the care of geriatric or otherwise ailing animals are very exciting.

“The fellowship was an extraordinary experience—a true partnership,” says Dr. Balko, reflecting on the year she spent at Brookfield Zoo. “I was able to contribute anesthesia and analgesia skills from my prior training with domestic animals and gained an unbelievable amount of clinical and research knowledge from everyone on the CZS team.

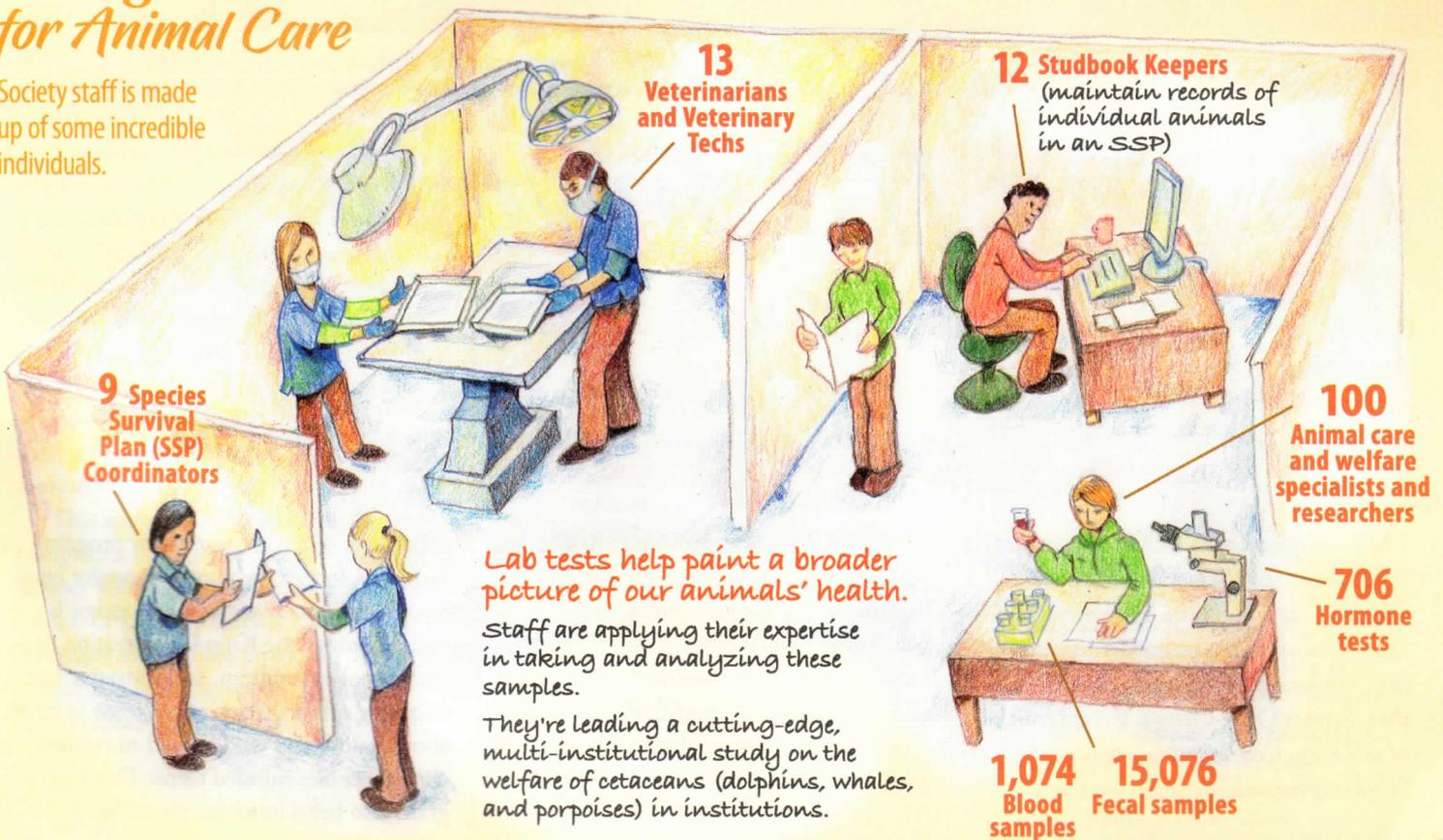
CZS is such a unique powerhouse of talent—I don’t think I could have gained this experience anywhere else.”

The Society is proud to pioneer this important fellowship. “The potential impact for this program is formidable—not just for our Brookfield Zoo patients, but for the treatment of non-domestic species everywhere,” says Dr. Mike Adkesson, the Society’s vice-president of clinical medicine. “We are honored to guide the standard of care and benefit patients in the wild and at zoos around the world.”

With support, the Society will continue to provide training to students and post-graduate residents in non-domestic animal anesthesia, develop new experts through our fellowship program, advance the level of veterinary care through new research, and provide the animal welfare community with consultation and clinical service. ■

Setting the Standard for Animal Care

Society staff is made up of some incredible individuals.



“Personally and professionally, Brookfield Zoo has transformed my life. It gave shape to my interests and passions and forged my academic and career path. It is here I learned not only that I could make a difference in my world, but how.” – Sandra Ortiz-Ortega



Sandra Ortiz-Ortega mentoring two King Conservation Science Scholars, Antwan Smith and Kelsie Weisenberger, as they interact with a guest at THE LIVING COAST.

Paying it Forward

A Home-Grown Conservationist Inspires Others

If you’ve been a friend of the Chicago Zoological Society for more than a few years, you may remember Sandra Ortiz-Ortega. We featured her story in a recent Impact Report and are excited to provide an update on her achievements and plans for the future.

The Society’s mission is to inspire conservation leadership by connecting people with wildlife and nature. And nobody is more familiar with the impact that an early connection with nature can have than Sandra Ortiz-Ortega, the coordinator of our King Conservation Science Scholars program.

Sandra moved from Mexico to Chicago with her family when she was 4 years old, and one of her earliest memories is visiting Brookfield Zoo with her parents. She quickly developed a passion for animals and nature, and returned to the zoo often.

She became a youth volunteer, and after graduating from high school, Sandra was

officially hired as a community program assistant. She was promoted to senior community program assistant, and today, is coordinator of the King Conservation Science Scholars program, an innovative and engaging offering that invites teens to learn about nature and wildlife and to connect with other like-minded teens. This program also helps participants prepare for

college and careers, and helps them to make a difference in their communities.

Sandra provides mentorship to participating young adults, organizes and supervises programs, and collaborates with other zoo staff and community organizations like Eden Place in Chicago's Fuller Park neighborhood, the Chicago Urban League, and neighborhood libraries.

Recalling her own adolescent experience, and growing up in a culture that didn't always embrace nature and science, she encourages young people to "let their science geek flag fly!" She urges them to "find adults with the same interests that you have. Seek out that one science teacher or librarian who can provide you with resources, direction, and support." She thinks back to her own experience—her high school math teacher recognized her love of animals, and encouraged her to apply to the Society's youth volunteer program.

Sandra feels fortunate that each day, she witnesses real change happening in real life because of the Society's programs. "Like I was, the kids I work with are transformed by their participation. They go on to conduct fieldwork in Africa, pursue careers in the sciences, and develop conservation programs in their own communities."

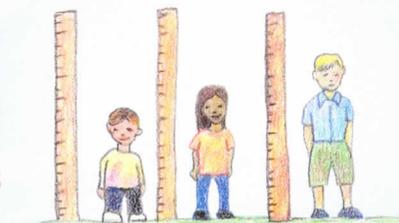
She adds, "If people understand nature and the world around them, they can grow in so many ways. King Conservation Science Scholars, Zoo Adventure Passport (ZAP!), and other informal education initiatives are planting the curiosity seed and nurturing it with water and sunshine. We are helping young people to envision a previously unimaginable future for themselves and then providing them with tools to reach their goals."

This summer, Sandra is slated to complete a Bachelor of Science degree in biology with a concentration in education from Northeastern Illinois University. She plans to continue providing informal science education to youth in Chicago-area communities. ■

Opening Doors and Providing Opportunities

The Chicago Zoological Society strives to reach the youngest learners...

158 children in Nature Play ZAP!
(Ages 1-5)
2,959 children and families in ZAP!
(Ages 5-12)
177 middle school students
in Zoo Explorers Club



742 children and adults in Family Play Programs



1,365 children in Zoo Camp

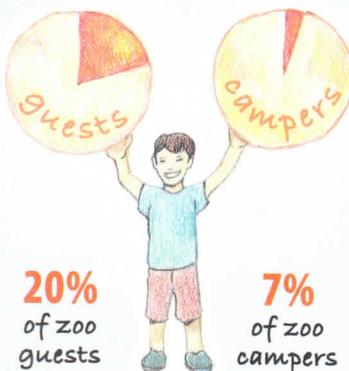
...along with those who are a little further along in their education...

1,959 individuals who participated in some kind of professional development program
271 teachers who participated in graduate courses



17 veterinary students in clinical rotation
4 Ph.D. students in our Sarasota Dolphin Research Program
26 Master's degree graduates

...and persons with disabilities.



20% of zoo guests

7% of zoo campers

may have a physical, cognitive, or sensory disability.

Our "A Zoo for All" initiative expanded in 2017 in an effort to meet all of their needs.

190 persons with disabilities received an animal ambassador visit

4,475 persons with disabilities (plus family/staff) were served through zoo visits

14,833 persons with disabilities (plus family/staff) were served through free passes

The "A Zoo for All" initiative includes:

- ✓ Programs that train individuals with disabilities for employment and volunteer opportunities, like Good Works and Project SEARCH.
- ✓ Inclusive programming, like Zoo Camp and Family Fun Saturdays.
- ✓ The addition of a new sensory-friendly family room and inclusion resource center in HAMILL FAMILY PLAY ZOO.



*“The stars, acorns, kites,
a magnifying glass, bugs, birds,
and even ice can teach us the
way the world works.”*

- Barbara Brenner, author

Learning to Play.

Playing to Learn.

The Chicago Zoological Society's NatureStart™ program—a child-centered, nature-play inspired approach to early-childhood education—is revolutionizing the way children learn and experience the world around them.

At the heart of it, the NatureStart™ principles are:

1. Play is a powerful teacher.
2. Children learn best when they are agents of their own exploration.
3. Time spent in and with nature is essential for children's development.

These ideas are simple, but their implications can be profound: We take care of the things we love. Children who connect with nature and wildlife at an early age want to protect it.

The Start of NatureStart™

In 2001, we opened HAMILL FAMILY PLAY ZOO, a groundbreaking exhibit rooted in early-childhood development and conservation psychology (the study of relationships between human and nature). The Play Zoo is a real-world, learn-through-play laboratory.

Wanting to extend our reach, in 2010, we created the NatureStart™ Professional Development program. We began with informal educators at zoos, aquariums, nature centers, and other conservation organizations, using our success with the Play Zoo to demonstrate how to deliver effective nature-play-inspired, early-childhood programs.

Nature Play Powered by Partnership

Once we conducted several of these trainings, we had a group of individuals who were now passionate about nature play. It was only natural to make sure these individuals had a way to connect and share ideas with each other. This led to the creation of the NatureStart™ Network. Like its name implies, this is a network of early childhood and environmental educators working to support family nature play, exploration, and learning within homes, schools, and recreational spaces in urban neighborhoods.

(Photo above) Head Start teachers participating in an activity that helps adults see nature from a child's perspective during NatureStart™ training, and Mark Freedlund, Play Program supervisor, working with educators from the Latin American Zoo and Aquarium Association during the first NatureStart™ professional development program (right).

One such collaboration brought together the Forest Preserves of Cook County and Chicago's Mary Crane Head Start, an early childhood development center. Bob Bryant, director of education at Mary Crane, says the partnership completely shifted the focus of the child development services the center offers. Now, most outings are connected to exploration of the natural world.

"We are seeing results—enhanced critical thinking skills and social emotional learning gains," he says. "It's amazing. Right here in urban Chicago, we have preschoolers who really appreciate that they are natural beings who are an integral part of a natural world."



NatureStart™ Professional Development Network Goes National

NatureStart™ Network participants overwhelmingly say the connections to one another and the training have transformed their facilities and programming. The Network's impact here in the Chicago area was so powerful that in 2017, with a generous grant from the Institute of Museum and Library Services, we launched the program's next wave.

National NatureStart™ Professional Development builds on lessons learned, and scales them for national impact. The goals of the program include:

- Developing an advisory council of early childhood and informal education professionals to provide guidance and leadership.
- Establishing training sites and regional training teams here at Brookfield Zoo; in Dallas, Texas; the Bronx, New York; and Greenville, South Carolina so we may exponentially expand our reach.
- Developing a new NatureStart™ training model that blends online content with face-to-face sessions, making it easier for more individuals to participate.

Jenni Kinch Garcia, education program coordinator at Greenville Zoo, first participated in NatureStart™ in 2012. It was an eye-opening experience and she immediately brought ideas back to be incorporated at her zoo. In 2017, she was among the first to become trained as a lead trainer at one of the four regional locations.

"The Chicago Zoological Society has a stellar reputation in the zoo, aquarium, and cultural institution community," Garcia says. "By participating, our institution not only is gaining experience that we can bring to our audiences, we now are also seen as leaders in our community. Most importantly, we are helping to expand the improvement of early-childhood education and the ways in which children connect to the natural world." ■



Marilyn Brink giving an opening presentation at the NatureStart™ Network Symposium in 2016.

Leading the Way

It may seem like NatureStart™ has expanded quickly—this is due to the dedicated team behind the program, particularly its leader. Most of the outreach, network-building, training development and delivery, materials and curriculum, communication, and trouble-shooting has been led by Marilyn Brink, manager of professional development and early childhood NatureStart™ programs. "Marilyn is indomitable, a mover and shaker, an innovator and relationship-builder with both verve and meticulous attention to detail," says Dave Becker, the Society's senior manager of learning experiences.

Asked about the future of this game-changing program, Brink says that while expanding the program even further would be amazing, at the end of the day, everything comes back to the children. "Again and again, we've witnessed the power in providing children access to nature and then inviting them to explore and to direct their own learning," she says. "We see wonder and amazement unfold. We see critical thinking and sustained learning. We observe children caring more about each other and the world around them. It's an extraordinary gift."