ANIMALACTION

A PUBLICATION OF THE NATIONAL ANTI-VIVISECTION SOCIETY • SPRING 2021

THE ROAD AHEAD

The Fight for Smarter Science has Never Been More Relevant—or More Urgent

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The National Anti-Vivisection Society (NAVS) is dedicated to ending the exploitation of animals used in science.

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L-R: Juliane Pearson, Deputy Director; Anna Madsen, Staff Research Assistant; Meredith Blanchard, Senior Manager of Advocacy

New Faces Driving NAVS Program Growth in 2021

While 2020 had its challenges, it was a year of growth for the NAVS team.

Early in the year, **Juliane Pearson** came on board as NAVS' new Deputy Director. She describes her role as "participating in activities across the organization, from communications to operations to program development and management." She has also been a key driver in moving work forward in support of NAVS' nonhuman primate research efforts and has led the development of the new BioLEAP.org project. (See story on page 3.) Juliane says that "it is inspiring to have a focused mission and compelling purpose guiding our work" and is excited about the "opportunities to reduce and eliminate the use of animals in science while supporting the development and implementation of innovative, relevant, non-animal alternatives." An avid reader, runner and cyclist (though not at the same time, we presume), Juliane has completed a full marathon, 12 half marathons and "countless" 5K and 10K runs.

Over the summer, we welcomed **Anna Madsen** in the newly created role of Staff Research Assistant. A May 2020 graduate with a B.S. in biology from the University of British Columbia, Anna tells us she was actually introduced to NAVS' work as a child, "when a family friend heard how passionate I was about protecting animals." A series of animal welfare courses in college "opened my mind about pursuing a job in animal advocacy" and when she returned to Chicago, she says "it seemed only natural to see if NAVS had a position for me!" Among her current projects, Anna has been working closely with Juliane and the team on developing content for BioLEAP.org.

Filling out our roster in November was **Meredith Blanchard**, who joined us as Senior Manager of Advocacy and Policy. Meredith describes herself as "a proud Colorado native who has spent the majority of her career in the pursuit of a kinder, more humane world for animals." Boasting an extensive history in the animal protection field, Meredith has worked on anti-puppy mill campaigns and has lobbied members of Congress on issues regarding wildlife and the Endangered Species Act. Since joining NAVS, she has focused on developing a new "legislative roadmap for the organization, zoning in on initiatives that address our core mission." (You can read more about that "roadmap" in our cover story starting on page 6.) Meredith hopes that "my high school self who sobbed openly in psychology class while learning about the Silver Springs monkey experiments would be very proud of the work I am doing today."

By the way, Juliane, Anna and Meredith had a *lot* more to tell us about themselves. Read their full stories at **NAVS.org/NewFaces.**

WITH NAVS

Celebrate Compassion with "Art for Animals" 2021

"Looking Toward Our Future"

NAVS' Art for Animals contest is an opportunity for artists of all skills and ages to create images that inspire others to extend compassion, respect and justice to all animals. This year marks our 32nd annual competition, and we're once again inviting you to get creative and give a visual "voice" to those who cannot speak for themselves.

What does compassion for animals mean to you? And what kind of world do YOU want to see for animals? That's what Art for Animals is all about—putting into pictures the compassion that is due to every living creature.

Cash prizes will be given to First, Second and Third Place winners, one Youth (age 12 and under) winner, and one Best in Show winner. We will also present a special Fans' Choice Award that will be chosen by our friends and followers on social media.

Submissions may be digitally created artwork or digital reproductions of original paintings, illustrations or photographs. Entries should be submitted via email to **art@navs.org.** Physical artwork cannot be accepted.

The deadline for submissions is Friday, July 30, 2021. For complete guidelines and to see galleries of previous winners, visit **www.navs.org/art.**

All-New BioLEAP.org is a Powerful Humane Science Resource

Are you an educator or student looking to incorporate humane science alternatives into your educational arsenal? You now have a new powerful tool at your fingertips.

NAVS' all-new BioLEAP.org website, which launched this spring, is a comprehensive resource for identifying and acquiring the latest humane alternatives to "traditional" classroom dissection.

There are many fun, creative and effective non-animal alternatives available to students and teachers seeking to replace inhumane dissection. These solutions—everything from web-based programs and apps to physical models—help teach students valuable skills while they learn about anatomy and physiology.

On BioLEAP.org, you can search for these innovative humane alternatives by animal type, grade level or format to ensure you find the solution that perfectly meets your—and your classroom's—needs. In addition, you can see which alternatives are compatible with online learning, which are reusable, and much more. And when you've made your choice, you can link directly to each manufacturer's site for purchase or download.

We've simplified the process of finding the best humane science tools so that you can spend less time searching and more time teaching—and learning. Visit the all-new **BioLEAP.org** today.

Check Out the New Look for NAVS.org

BioLEAP.org isn't the only new digital kid in town. NAVS.org has a fresh new look and streamlined design aimed at helping you find the exact information you want—and to make an immediate difference in the lives of animals.

If you haven't been to NAVS.org lately, check it out!

MAKING IT LEGAL

HUMANE COSMETICS

6

States with laws prohibiting the use of animals for product safety testing, where alternatives are available (CA, IL, NJ, NY, NV, VA)

4

State "humane cosmetics" bills proposed so far in 2021 (HI, MD, RI, VA) (Virginia's bill was signed into law in March. It takes effect on January 1, 2022.)

STUDENT CHOICE

22

States (plus the District of Columbia) with statewide laws or policies giving K-12 students the right to opt for an alternative instead of participating in animal dissection

RESEARCH ANIMAL ADOPTION

11

States with laws requiring dogs and cats to be offered for adoption after research (CA, CT, DE, IL, MD, MN, NV, NY, OR, RI, WA)

2

State "adoption" bills proposed in 2021 (MA, VA)

ANIMALS AND SCIENCE

"Overall, 90% of the assessed studies found that humane teaching methods provide superior or equivalent learning outcomes to harmful animal use...In conclusion, this systematic review confirmed the findings of previous studies and overwhelmingly demonstrated that harmful animal use for teaching and training is not justified."

Zemanova, M. and A. Knight. 2021. "The Educational Efficacy of Humane Teaching Methods: A Systematic Review of the Evidence."* Animals, *11, 114.

"We keep telling the public, 'Don't worry about research animals because there is rigorous government oversight. But that oversight covers less than 1% of the animals in labs. If we're serious about reducing the number of lab animals we use and curbing the number of painful experiments, somebody has to be keeping track of these animals. You can't track progress if you can't measure progress."

Larry Carbone in "How many mice and rats are used in U.S. labs? Controversial study says more than 100 million,"* Science, *Jan. 12, 2021.

"Current selection of a specific animal model seems to be based on tradition rather than its potential predictive value for clinical outcome."

Veening-Griffioen, D., et al. "Tradition, Not Science, Is the Basis of Animal Model Selection in Translational and Applied Research,"* ALTEX, *2020. 38(1), 049-062.

"As our collective interest is in human health, our goal should not be to validate results against animals, but rather against humans, because in the end we all know that mice are not men."

Dr. Don Ingber in "Is it time for reviewer 3 to request human organ chip experiments instead of animal validation studies?"* Advanced Science, *October 12, 2020.

111.5 million

Number of mice and rats estimated to be used in animal experiments each year in the U.S.

44.5 million

Number of mice and rats estimated to be used in painful or distressful experiments each year in the U.S.

Carbone, L. "Estimating mouse and rat use in American laboratories by extrapolation from Animal Welfare Act-regulated species,"* Scientific Reports, *2021. 11: 493.

"Roughly three out of five drugs fail clinical trials based on safety issues. This is despite all tested drugs currently having undergone safety testing in multiple animal species. The limitation of predictability of human safety in animal models is often due to subtle, contextual differences which can only be understood after failure in man."

Ekaterina Breous-Nystrom, Ph.D., Head Investigative Safety-Toxicology at Roche, in materials submitted for the Microphysiological Systems (MPS): Bridging Human and Animal Research Workshop sponsored by the National Academies of Sciences, Engineering and Medicine in January 2021.

THE ROAD AHEAD

The Fight for Smarter Science has Never Been More Relevant—or More Urgent

The COVID-19 pandemic has placed the scientific community squarely in the global spotlight—and deservedly so. From identifying the virus to treating it and developing effective vaccines, scientists have been in a dead sprint for more than a year to save us from the virus. Never in modern history has the fight for good, human-relevant science been more vital.

For our part, NAVS has been prioritizing the development and use of human-relevant science since our inception in 1929. We continue to advocate for technologies that provide better models of human biology than unreliable animal models, which are used more frequently for tradition and convenience rather than their accuracy in predicting human response.

With the need for GOOD science proving more important than ever, 2021 is shaping up to be an exciting year for NAVS—and for smarter, more humane science. Here's a look at the road ahead.

Advocating for detailed reporting and improved information sharing

A lack of accurate, detailed data on the use of animals in science has long been a roadblock to developing good, human-relevant methodologies. How can we tell what progress has been made if we do not know where we started or where we currently stand? Earlier this year, the Federal Accountability in Chemical Testing Act, or FACT Act, was re-introduced in Congress to require federal agencies to improve their reporting on how much progress they have made in adopting non-animal testing methods. It would also require researchers to report animal use data by species, number, and type of test performed. Because the FACT Act is crucial to ensuring that the scientific community continues to strive for better, human-based science, we will be working diligently to ensure its passage in Congress.

Beyond the FACT Act, NAVS plans to work closely with the scientific community to improve reporting on the use of animal test subjects. Together with research institutions, universities, lawmakers, and others, we hope to develop and implement ideas for better information sharing to understand where and how animals are used in science, and to identify priorities for the development of animal alternatives.

Promoting the use of better science by federal agencies

In 2019, the Environmental Protection Agency (EPA) became the first federal agency to put a hard deadline on phasing out mammal research—announcing it will stop conducting or funding studies on mammals by 2035. Then-EPA administrator Andrew Wheeler noted that scientific advances that don't involve animals are allowing researchers to evaluate chemicals faster, more accurately, and at a lower cost compared to animal testing.

Along with the EPA, the Department of Veterans Affairs (VA) is poised to make great strides for lab animals after the nation's top science panel concluded that most of the research being conducted on dogs by the VA is unnecessary. The panel urged the VA to move away from dog research altogether by developing a road map to incorporate non-animal approaches to its biomedical research program.

NAVS applauds all efforts by federal agencies to reduce their dependence on animal testing and will be working on maintaining momentum to that end for the EPA and the VA. In 2021, we will also urge other federal agencies to commit to a timeline to move away from animal experimentation, or, at the very least, conduct assessments of their animal use to identify where the "3 R's"—Replacement, Reduction and Refinement—can be implemented to reduce or eliminate lab animal suffering and use more human-relevant alternatives.

In addition to a heightened focus on improved information sharing and federal accountability to implement the best science possible, NAVS will continue to build on past legislative successes that support our core mission.

Ending the use of animals in cosmetics testing

Humane cosmetics legislation to end the testing of chemicals on animals in the name of vanity has been gaining in popularity in recent years, and 2021 is proving the trend. So far this year, Hawaii, Maryland, Massachusetts, New Jersey, New York, Rhode Island, and Virginia have all introduced legislation to end the sale of cosmetics tested on animals—and Virginia's was signed into law! These states are following precedents first set by California, Illinois and Nevada. NAVS has actively supported all state efforts to reduce or stop cosmetic testing on animals, and getting the federal Humane Cosmetics Act, which will end the use of animals for cosmetics testing in the United States, passed and signed is a top priority for us again this year.

Equipping classrooms with smarter, humane science options

Although better alternatives exist, most classrooms around the United States still use animal dissection to teach biology and the life sciences. We cannot expect great advancements in science if we teach modern day students using the same classroom techniques that have been around for decades. To make learning the life sciences more relevant in today's world, NAVS will be reaching out to educators to raise awareness of the abundance of dissection alternatives that exist, and help educators transition their classrooms to provide a more humane approach to the life sciences.

Additionally, NAVS will continue to support legislation and policy initiatives that protect children who have a moral, ethical, or religious objection to dissection, or who simply want to use superior alternatives to cutting into animals. Twenty-two states and Washington, D.C., already have such laws or policies in place, and many school districts have taken it upon themselves to offer dissection alternatives to students.

Ensuring that compassion does not end at the laboratory door

Needlessly euthanizing laboratory cats and dogs that are no longer needed for research is one of the greatest assaults on the human-animal bond. At NAVS, we support legislation requiring the adoption of healthy dogs and cats used in research, such as those already introduced in Virginia and Massachusetts this year. Our Sanctuary Fund also supports these efforts by providing grants for the care of retired laboratory animals. In 2021, we will continue to fight to get animals out of labs, and, in the meantime, help animals find loving homes after the lab.

To tackle the biggest issues of today, including the ongoing threat of COVID-19, we need to demand that science continue to advance and evolve beyond what is comfortable and what is known. In 2021 NAVS will continue our fight to demand—and advance—smarter science.

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*Progress on behalf of animals happens because of advocates like you—and opportunities for advocacy can happen at any time. Visit **NAVS.org/take-action** for ways you can make your voice heard right now!*

ADVANCING HUMANE SCIENCE WITH THE IFER "CLASS OF 2021"

Thanks to your generosity and support of our commitment to advancing science without harming animals, NAVS, through the International Foundation for Ethical Research (IFER), is able to fund graduate student researchers each year. Recipients of IFER grants recognize the significance of humane, human-relevant science and are developing non-animal alternatives that have the potential to replace and reduce animal use in biomedical research, product testing and education.

We offer Graduate Fellowships for Alternatives to the Use of Animals in Science to students whose graduate school research projects directly address one of the most pressing challenges facing the scientific community today: the need to develop more human-relevant models to advance science and lessen reliance on animal experimentation.

This past fall, as part of the 2020-21 grant cycle, IFER's Scientific Advisory Board met virtually to select recipients of the Graduate Fellowship. In total, six graduate students' projects were selected for funding, including three new projects and the renewal of three projects from the previous grant cycle.

2020-21 IFER GRADUATE

JOOST BRINKS
Leiden University Medical Center
The Netherlands

"The role of corticosteroids in the pathogenesis of central serous chorioretinopathy"

ORLA DUNNE
The Wellcome-Wolfson Institute for Experimental Medicine, Queen's University Belfast
Belfast, Northern Ireland

"Further characterization of an *in vitro* human sensory neuronal model derived from dental pulp stem cells for the study of neuronal responses in chronic obstructive pulmonary disease (COPD)"

XINGRUI MOU
Duke University
Durham, North Carolina

"Engineered *in vitro* model of the human kidney for blood filtration and disease modeling"

Among our new awardees is **XINGRUI MOU**, a Ph.D. candidate at Duke University. Xingrui's project involves creating a cell-based model of the human kidney that can mimic the blood filtration function of the organ. As a growing number of people are afflicted with kidney disease, having a model that can mimic the structure and physiology of the human kidneys is needed. Xingrui will engineer a microfluidic device that can replicate the vascular and urinary compartments of the human kidney and will populate the device with different types of human kidney cells derived from human induced pluripotent stem cells. He will then conduct tests to examine the functionality of the engineered kidney model and use it to study kidney diseases, while providing the scientific community with an alternative that can reduce reliance on animal models in this area of research.

ORLA DUNNE, a Ph.D. candidate at The Wellcome-Wolfson Institute for Experimental Medicine at Queen's University Belfast in Northern Ireland, has also received IFER funding this grant cycle. She will be characterizing a cell-based model to study the responses of neurons in chronic obstructive pulmonary disease (COPD). In respiratory conditions like COPD, nerves in the airway can become overly responsive to stimuli, resulting in a debilitating chronic cough. While researchers often rely on animal models such as guinea pigs, mice and rats to investigate the hyper-responsiveness of airways, Orla will be using neurons derived from dental pulp stem cells instead. After differentiating cells from redundant human dental tissue into neurons, she will characterize the cells and determine agents that can make them hyper-responsive. Her model can also be adapted for other conditions, such as chronic pain or chronic itch, potentially reducing animal use in many areas of research.

PRASHANT HARIHARAN, a Ph.D. candidate at Wayne State University in Detroit, Michigan, is also a new recipient of an IFER fellowship. He will be developing a human-relevant *in vitro* model to study hydrocephalus, the build-up of fluids in the cavities of the brain. In individuals afflicted with hydrocephalus, cerebrospinal fluid (CSF) accumulates in brain ventricles, causing increased pressure in those areas, as well as mental decline if the condition isn't treated. Current treatments involve surgical interventions, which have high failure rates over time. There is a need to develop drug-based therapies, but this has not been successful, because researchers need a good understanding of how CSF is secreted in the brain. This project seeks to create an organ-on-a-chip model of choroid plexus tissue, which forms the blood-CSF barrier, to better understand the mechanisms of CSF secretion, replace animal models used in this line of research, and develop a human-relevant model for drug screening.

*Visit **NAVS.org/IFER** to learn more about this year's fellowship recipients and their research.*

FELLOWSHIP RECIPIENTS

PRASHANT HARIHARAN
Wayne State University
Detroit, Michigan

"Engineering human choroid plexus-on-a-chip as a non-animal model to advance the understanding of how hydrocephalus alters normal cerebrospinal fluid (CSF) secretion"

SARAH STUART
University of Melbourne,
Royal Melbourne Hospital
Australia

"Using brain tumor organoids to evaluate efficacy of novel inhibitors"

ALINE ZBINDEN
University of Tubingen
Germany

"Towards clinical studies on mature β-cell drug testing platform"

2020 ANNUAL REPORT

JULY 1, 2019 TO JUNE 30, 2020

$82,701
was given to sanctuaries.

3
issues of NAVS' Animal Action magazine were sent to more than 20,000 households in the U.S.

418
pieces of artwork were submitted for Art for Animals 2020 by artists of all ages from around the world.

5
International Foundation for Ethical Research (IFER) Graduate Student Fellowships for Alternatives to the Use of Animals in Science were awarded to promising early career researchers.

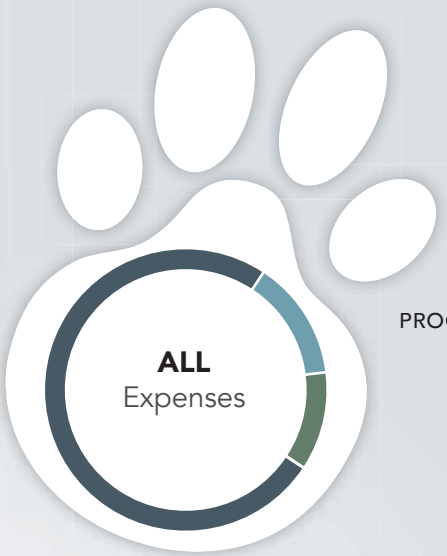
57,018
messages were sent by NAVS advocates to elected officials through the NAVS Advocacy Center.

143
opportunities for legislative advocacy were shared with NAVS supporters.

$62,500
was awarded to IFER recipients.

18
NAVS Sanctuary Fund grants were provided to aid animals at sanctuaries and shelters across the United States.

51
installments of "Science First," NAVS' weekly science education e-newsletter, were distributed.



79%
PROGRAMS/EDUCATION

10.3%
FUNDRAISING

10.7%
ADMINISTRATIVE

49.4%
GENERAL EDUCATION/
PUBLIC AWARENESS

17.8%
LEGAL/LEGISLATIVE

21.4%
SCIENCE

7.1%
SPECIAL INITIATIVES/
COOPERATIVE EFFORTS

4.3%
STUDENT/EDUCATOR
OUTREACH

Revenue

Funds from Operations	$1,191,554
Non-operation Funds	$405,388
Bequests and Legacies	$1,494,475
TOTAL	**$3,091,417**

Investments

Financial Instruments	$8,084,890
TOTAL	**$8,084,890**

ALL Expenses

Programs and Education	$1,888,042
Fundraising	$245,933
Administrative	$255,595
TOTAL	**$2,389,570**

Program and Education Expenses

General Education/Public Awareness	$932,446
Science	$404,361
Legal/Legislative	$337,079
Special Initiatives/Cooperative Efforts	$133,548
Student/Educator Outreach	$80,608
TOTAL	**$1,888,042**

Assets

Cash and Cash Equivalents	$239,181
Accounts Receivable	$12,723
Prepaid Expenses	$48,166
Accrued Interest Receivable	$3,076
Property and Equipment	$12,338
TOTAL BEFORE INVESTMENTS	**$315,484**

Liabilities and Net Assets

Accrued Expenses & Accounts Payable	$68,275
Accrued Vacation	$30,186
SBA Loan (PPP)	$157,016
Total Liabilities	**$255,477**
Net Assets	
Restricted: Special Project (Sanctuary Fund)	$480,083
Unspent Grand Proceeds	$119,435
Unrestricted	$7,545,379
Total Net Assets	$8,144,897
TOTAL	**$8,400,374**

The financial statements have been audited by the accounting firm of Selden Fox, Ltd., and in their opinion, present fairly, in all material respects, the financial position of the National Anti-Vivisection Society as of June 30, 2020. A complete audited financial statement can be found on the NAVS website at ***NAVS.org/about-us/financials****.*

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FACES OF SURVIVAL

SANCTUARY FUND
NAVS

VALENTINA ROSE

MAGNOLIA

MARDUK

EFFIE

The NAVS Sanctuary Fund is a lifeline to animal rescues, shelters and sanctuaries who find themselves in desperate need of emergency financial assistance. Meet some of the latest animals who have overcome tremendous obstacles thanks to your support.

Over the years, we have developed a tremendous partnership with our friends at Chimp Haven, including providing the initial funding that helped in its founding decades ago. Recently, after the sanctuary Wildlife Waystation was forced to close, we stepped in and provided a grant to help with transportation of the animals to their new home at Chimp Haven. (Pictured: Chimp Haven resident **VALENTINA ROSE** gives a ride to a friend in need.)

Kauai SPCA reached out about a dog named **MAGNOLIA**, a second chance rescue, who needed medical assitance after being struck by a car—and a NAVS Sanctuary Fund grant helped with the emergency medical care she needed. We are pleased to report that she is fully healed and has found her forever home that has given her a great backyard to play in.

When Peaceable Primates, a sanctuary that specializes in rescuing baboons from research and the pet and entertainment industry in nearby Indiana, asked for our help in building outdoor areas for 14 new macaque residents (including **MARDUK**, pictured), we gladly stepped in. The new outdoor areas are now complete, and the new residents are enjoying their new home.

Finally, when a catastrophic power failure across the state of Texas threatened the animals at Primarily Primates, an emergency appeal to NAVS supporters made all the difference. You helped us send $20,000 for the emergency rescue and aid of the animals (such as **EFFIE**, pictured) whose lives were endangered by the crisis. Your generosity helped Primarily Primates purchase equipment, provisions and other tools needed to ensure the safety and care of the animals whose lives were on the line.

*To learn more about the lifesaving work that is made possible through your support of the NAVS Sanctuary Fund, visit **NAVS.org/sanctuary**.*

NAVS has a new home! Effective March 1, 2021, our office address is:
National Anti-Vivisection Society, 444 N. Wells St., Suite 406, Chicago, IL 60654-4594.
All of our phone numbers, email addresses and other contact information remain the same.
Donations should still be sent to: NAVS, 3071 Paysphere Circle, Chicago, IL 60674-0030.