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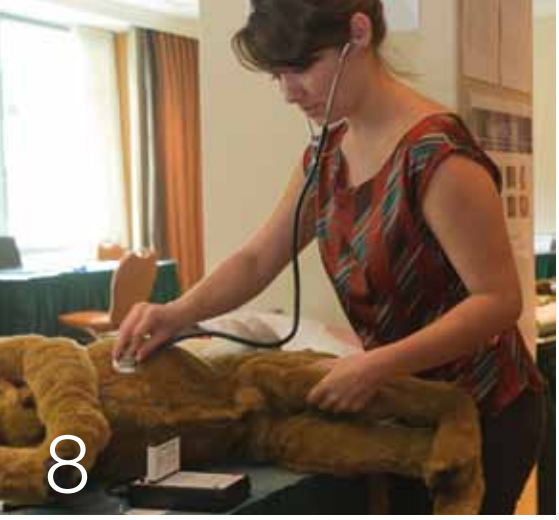
WORLD CONGRESS ON ALTERNATIVES FOR THE ANIMALS

aavs
American Anti-Vivisection Society



2012 Number 1

WORLD CONGRESS ON ALTERNATIVES
For the Animals

FEATURES

DEPARTMENTS

Founded in 1883, the American Anti-Vivisection Society's (AAVS) mission is to unequivocally oppose and work to end experimentation on animals and to oppose all other forms of cruelty to animals. AAVS is a nonprofit education organization using legal, effective advocacy to achieve meaningful, lasting change.

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First Word

THE LAST THING I EXPECTED at a meeting of scientists from industry and government was a friendly reception. But I got one, when, in 1999, I attended my first World Congress on Alternatives and Animal Use in the Life Sciences.

After dealing with U.S. researchers for many years, experiencing them largely as resistant to animal welfare concerns, I was pleasantly surprised to meet European scientists who took a more cooperative view. With a little 'of course' shrug, they fully supported the position that if an alternative to an animal test is available, it should be used.

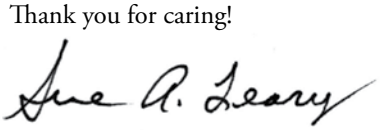
They conveyed a sense of social responsibility that included inviting animal protection advocates to participate in working groups set up to determine possible solutions to some of the worst problems of animal testing. In my view, they were already miles ahead of the U.S. science establishment.

It was extra gratifying then to see that a number of U.S. scientists also attended. Most were from international companies like Proctor & Gamble, that, in response to consumer demand, had already been working on alternative approaches to animal testing in their own industry. Others, from U.S. government agencies, seemed much more cautious about moving away from animal use. But they saw that European Union governments successfully prioritized alternatives development and implementation.

Importantly, a few U.S. academic innovators were there—some of them brought by our affiliate, the Alternatives Research & Development Foundation (ARDF), to participate in an important workshop. (See page 18) AAVS is proud of our accomplishments with alternatives through ARDF, including sponsorship of a number of the World Congresses.

A lot has changed since 1999. Alternatives to animal use are still regarded with varying degrees of acceptance, but there is much more understanding of the problems of using animals and a genuine interest in new methods. This issue of the *AV Magazine* provides an inside view of a conference that advances real change for the animals. Thanks to all who generously contributed, and thanks to AAVS members who support this important work.

Thank you for caring!



Sue A. Leary, President
American Anti-Vivisection Society
Alternatives Research & Development Foundation

Alternatives Research & Development FOUNDATION

PROBLEM: ANIMAL TESTING
SOLUTION: ALTERNATIVES

Invest in alternatives with a contribution to AAVS | **www.aavs.org/alternatives**

News

ISSUES AFFECTING ANIMALS

NIH Will Limit Chimp Research

NIH will limit the use of chimpanzees in research.

Immediately after an Institute of Medicine (IOM) committee released its report in December, concluding that "chimpanzees are not necessary for most biomedical research," the National Institutes of Health (NIH) adopted the report's recommendations to severely limit the use of chimps in research. The funding agency halted any new federal grants for chimpanzee research, pending a process to implement the IOM's recommendations. NIH estimated that about half of the current federally funded chimp research projects will not meet the new, stricter criteria and will be phased out.

The IOM report, entitled "Chimpanzees in Biomedical and Behavioral Research: Assessing the Necessity," was mandated by Congress in 2010 after controversy flared over the fate of 200 former lab chimps in Alamogordo, New Mexico. After 10 years living outside of laboratories, the chimps were at risk of being sent back to research. Fortunately, these animals will be spared from experiments, since the committee recommended that any chimpanzees currently on "inactive" status should remain inactive. Although 25 chimps have already been transported from New Mexico to a Texas research facility, they are included on the inactive list.

Citing advances in alternative methods, including cell-based technologies, the committee maintained that chimpanzees are "largely nonessential as research subjects." In addition, it cautioned that the genetic closeness of chimpanzees to humans demands a "greater justification for conducting research with them." The committee outlined three narrow criteria for determining whether chimps should be used in any given study: 1) the experiment should yield information that is necessary to advance public health; 2) the experiment cannot be performed ethically on humans or on other animals; and 3) the chimpanzees would be kept in their natural habitats or similar environments. According to the IOM committee's recommendations, all of these criteria must be met before a chimp may be used in an experiment.

The speed with which NIH adopted the IOM committee's recommendations points to a positive shift away from the view of chimpanzees as acceptable research subjects. Many questions remain, but AAVS sees this as an indication that the end of the use of chimpanzees in invasive research is near.

Alternatives Initiative Launched Abroad

The Institute for In Vitro Sciences (IIVS), a non-profit organization in Gaithersburg, Maryland dedicated to scientific advancement through alternative methods, has launched a new training initiative that will stimulate growth of alternatives in countries where it is needed most, such as Brazil, China, and Russia. China, for example, recently imposed regulatory requirements calling for animal testing of personal care and cosmetic products.

Through a series of workshops, IIVS aims to assist countries in adopting *in vitro* methods by familiarizing scientists and regulatory officials with the advantages of alternatives for safety testing. AAVS's affiliate, the Alternatives Research & Development Foundation (ARDF), has provided funding to support this program.

In Russia, IIVS scientists spoke to approximately 350 cosmetic industry members about the use of non-animal methods like 3-D tissue models that are routinely used in the U.S. by personal care product manufacturers. In China, they met with the Chinese Food and Drug Administration and were invited to speak at the Laboratory Animal Association's symposium on animal testing alternatives. In Brazil, IIVS presented lectures and laboratory demonstrations of non-animal safety testing methods to regulators. IIVS found the attendees to be very positive about the alternatives, requesting similar future workshops.

> IIVS aims to assist countries in adopting *in vitro* methods by familiarizing scientists and regulatory officials with the advantages of alternatives….

In just a few short months, the IIVS international outreach program has already proven its value, and plans include expanding to other countries to provide training in lab use of *in vitro* methods.

PHOTOS BY VEER

Chimps Bred Despite Ban

The largest primate research facility in the U.S., the New Iberia Research Center (NIRC) near Lafayette, Louisiana, has been accused of breeding chimpanzees who are supported with federal funding and taxpayer dollars, despite a ban on the practice that has been imposed by the National Institutes of Health (NIH). The agency implemented the ban on breeding chimps in 1995, and requires all awardees to respect this directive.

NIRC houses a total of 348 chimpanzees, 117 of whom are owned by NIH. Despite the directive associated with their funding, NIRC allowed these animals to breed, resulting in the births of 137 chimps between 2000-2009, according to Freedom of Information Act documents obtained by The Humane Society of the United States (HSUS). NIRC previously claimed that only 28 accidental births had occurred and that the chimpanzees are now being cared for with the Center's own funds.

NIRC receives approximately $1 million a year from NIH. The agency is currently investigating the situation, and formal accusations have been filed with the Department of Justice and the Department of Health and Human Services by HSUS.

GOVERNMENT GRANTS HELP GE FISH STAY AFLOAT

Despite the dangers that genetic engineering poses to both human health and animal welfare, in October, the U.S. Department of Agriculture awarded a grant of nearly $500,000 to AquaBounty, a private company that aims to put its genetically engineered (GE) salmon on the market. The Food and Drug Administration is considering approving GE salmon for human consumption.

In addition, it was recently revealed that AquaBounty has been receiving government funds for almost a decade. Since 2003, AquaBounty has received nearly $2 million in federal research grants to study sterilization of its fish, as well as grants from the Canadian government. One of the main concerns experts have with GE fish is that they pose a risk to wild populations if they escape. Also, there is little consumer interest in GE fish.

Meanwhile, federal legislators, as well as legislators in California, Alaska, and several other states, are attempting to halt approval, or at least require labeling, of GE salmon. If approved, it would be the first transgenic animal in the U.S. food supply, and would set a precedent for the breeding and sale of more GE animals in the future. To learn more and take action, please visit: www.aavs.org/GEFish.

PUERTO RICAN MONKEY FARM WILL NOT OPEN

After several years of protests and litigation by animal protection and community advocates, a monkey breeding facility will not be allowed to open in Guayama, Puerto Rico. The Puerto Rico Supreme Court ruled that its construction was in violation of local laws.

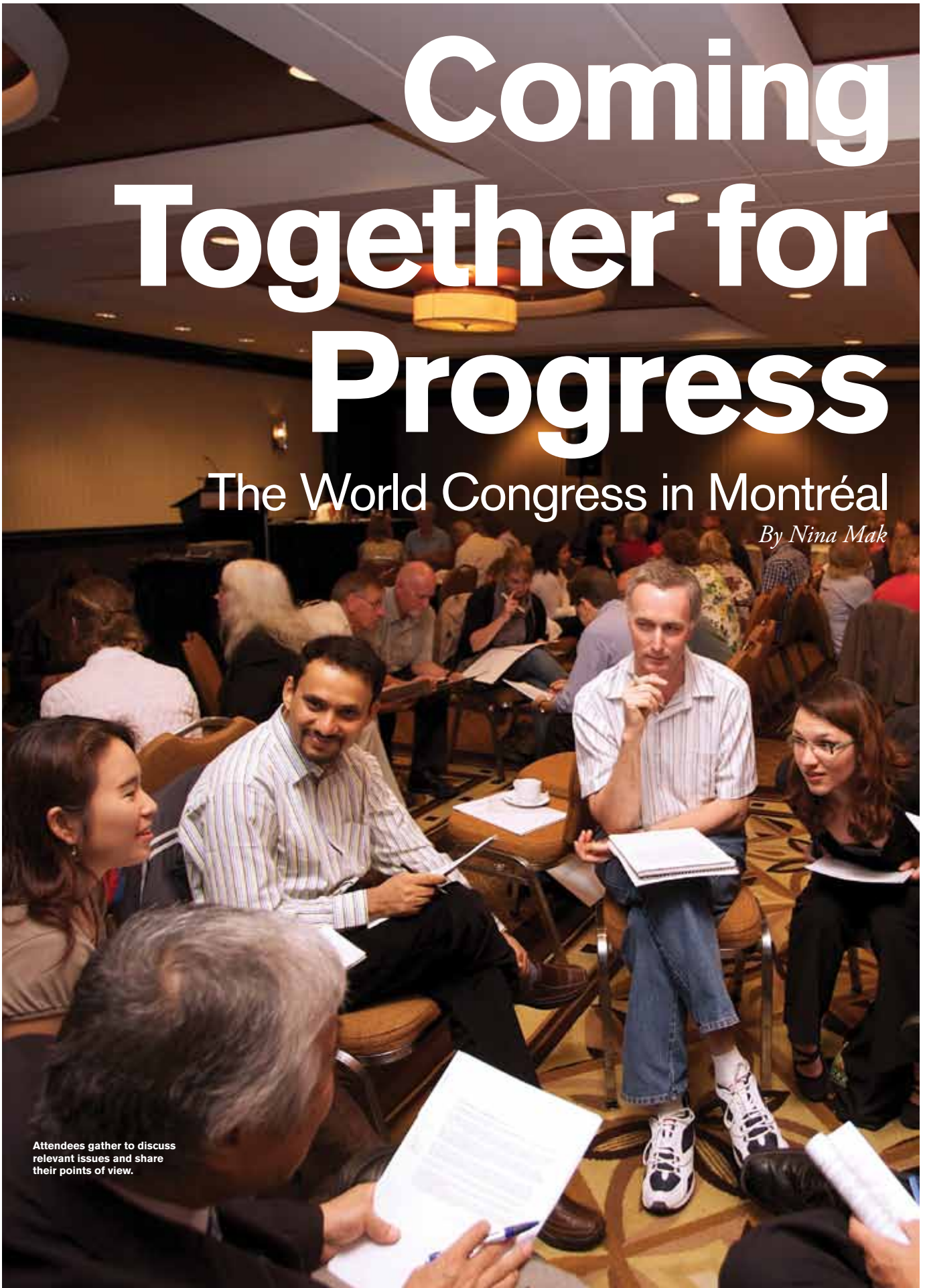
Amid allegations in 2010 of improper permits and papers, Bioculture began its construction of the breeding facility. But in October of that year, the Mayor of Guayama, Glorimari Jaime Rodriguez, approved two ordinances that banned the import, export, breeding, and use of monkeys in experiments. Bioculture appealed and continued to forge ahead but was eventually forced to stop by the time the matter came to the Supreme Court. Bioculture was also denied a rehearing.

An estimated 4,000 primates captured from Mauritius (an island off the coast of Africa) would have been used to start the farm, and their offspring sold to research laboratories located in the U.S.

Coming Together for Progress

The World Congress in Montréal

By Nina Mak



Attendees gather to discuss relevant issues and share their points of view.

PHOTO COURTESY OF 8TH WORLD CONGRESS SECRETARIAT

Communities with diverse interests must work together to advance alternatives to animal use in science. The World Congress is instrumental in this process.

It's no small thing to develop alternatives that change the way research has been done for centuries. It takes constant questioning, open minds, a flow of creative solutions, and often ethical or economic motivation to create change. Above all else, it takes a village.

Certainly, it begins with a hope from society, championed by animal protectionists, that we can cure diseases without forcing animals to suffer in painful experiments. But also from a pharmaceutical company that is tired of spending billions of dollars on animal research and human trials only to have less than 10 percent of its products prove successful enough to bring to market.[1]

It takes an academic researcher to see how the technologies she is working on can be applied to help produce more relevant information than animal models. Or animal advocates to point out where there could be immediate reductions in animal testing and greater reliance on non-animal methods.

It also takes a school administrator to see that students can learn as well or better without using animals. Or government agencies, who are responsible for evaluating a product's safety, to agree that they have confidence using results from alternative methods.

The World Congress on Alternatives and Animal Use in the Life Sciences brings these diverse players together and creates that village, if only for a few days, with the belief that the information shared, the partnerships formed, and the understanding cultivated will help the village endure well beyond the meeting.

THE 8TH WORLD CONGRESS

The World Congress convenes every two to three years, with the most recent 8th meeting (WC8), hosted by the Canadian Council on Animal Care (CCAC) in Montreal, August 21-25, 2011. The CCAC is the body that oversees the use of animals in science in Canada.

Recognizing the value of collaboration and the unique role that the World Congress plays in bringing together a broad array of people, the organizing theme for WC8 was "Together It's Possible."

The theme for WC8 reflects the thinking of Dr. Gilly Griffin, the Programs Director at CCAC and Chair of the WC8 Scientific Program Committee, who said, "It is only possible to move forward if you have a whole variety of people who are interested…. What's been particularly special about the World Congresses is that they do offer an opportunity for all those communities to get together in one place and to openly discuss what's possible in terms of implementation of 3Rs [Reduction, Refinement, Replacement] alternatives."

Echoing this sentiment, Clément Gauthier, Executive Director of CCAC and Co-Chair of WC8, explained, "When we are face to face, and questions are honestly asked with sincerity, and answers are basically worked on together, it works. [The World Congress] is the only forum with such a wide spectrum."

Nearly 900 people attended WC8, representing the diverse viewpoints of toxicologists, biomedical scientists, educators, veterinarians, government regulators, community representatives, pharmaceutical companies, animal protectionists, and others.

VILLAGE-BUILDING

It can be challenging to bring together so many different people. Not every country, every field, nor every person is in the same place in terms of embracing and developing alternatives. The challenges and opportunities in one field may be completely different from those in another. And while some people concern themselves with laying out a vision and plan for moving forward, others are working out highly specific details of a particular test method.

The diversity of the attendees is reflected in the diversity of presentations and posters on display at WC8.

At previous Congresses, much of the emphasis was on the subject of toxicity testing, which has benefitted from a significant investment by industry, especially in Europe. At WC8, attention was intentionally placed on a broader range of topics including: 1) biomedical research alternatives, since the majority of animal use is for biomedical research; 2) replacement alternatives, since this is the ultimate goal after all; 3) alternatives and animal use policy, since policies at various levels can promote or impede alternatives implementation; and 4) education alternatives, since humane education is a cornerstone of ethical treatment of animals. As a result, the communities working on these issues were more active in the World Congress than in years past.

OVER THE COURSE OF 5 DAYS

There were nearly 900 people from 52 different countries, 36 *scientific meetings,* 15 additional sessions, 6 *satellite meetings,* over 200 oral presentations, *and more than* 400 *posters of varying degrees of breadth and depth,* as well as a multimedia room displaying alternatives in education.

The World Congress brings together those of different backgrounds to share ideas.

PHOTO COURTESY OF 8TH WORLD CONGRESS SECRETARIAT

Within this diversity lie some of the strengths of WC8. When various people can share their points of view and experiences, "you do get a sense of what people are finding as obstacles, but you also get a feeling of where those opportunities are," said Dr. Griffin. Furthermore, participants may have questions that have been answered elsewhere, and can learn from others' successes, as well as their mistakes, to think about what is possible, and to challenge the status quo.

When communities that don't often interact come together, Dr. Griffin added, the opportunities for networking and cross-fertilization of ideas are considerable. "I think in science that's always valuable to see what's happening in other disciplines because you can then oftentimes see what's parallel in your own discipline."

The energizing effect of the World Congress is especially noticeable to people new to alternatives. Dr. Gauthier reported that, as attendees, they learn about what alternatives are out there, bring it back to their organization or company, and spread a sense of what is possible because they have come in contact with a wide range of people at the World Congress that they otherwise would not have. At least one pharmaceutical company, for example, used WC8 as a training opportunity for some of its scientists. And, fulfilling a goal of CCAC, more than 170 Canadians attended WC8, compared to just 10 or 11 in years past.

MAPPING OUT THE FUTURE

The World Congress presents the state of the art in particular scientific areas, but it goes further than this. Because it can bring so many people together to hash out different ideas, it helps build consensus, promotes international harmonization, and sets a vision for the future.

In one session, for example, participants explored the question of whether animal experiments causing severe pain and distress could be eliminated by 2020. In another session, key players from around the world came together to discuss how animal users should be trained, given the increasing globalization of science.

According to Dr. Griffin, though, "a cornerstone to the way that things will move forward is the Montreal Declaration." Proposed at WC8 and endorsed by the meeting participants, the Montreal Declaration is "A call for a change in the culture of planning, executing, reporting, reviewing, and translating animal research."

The Declaration builds on recent studies that found poor correlation between animal and human results in certain fields, and other studies that pointed to persistent problems in experimental design. It states that all available evidence relevant to a specific research question should be synthesized before an experiment using animals is begun, preventing waste of time, money, and animals' lives.

To promote the goals of the Declaration, an international working group has already been established and a symposium and workshop on systematic reviews scheduled. If done properly, the synthesis of information called for by the Declaration is expected to help provide the academic foundation for replacing animal models in various fields of biomedical research.

GETTING IT DONE

Perhaps the best thing about the World Congress is that the people who attend are no longer debating whether or not alternatives are possible or are a good idea. We are getting together to figure out how to get it done. What are the needs? What are the challenges?

Through discussion and debate, networking, and cross-fertilization of ideas, we can investigate and pursue opportunities, and speed up the process of change. The World Congress is energizing and stimulating, providing the most significant opportunity for animal protectionists, toxicologists, pharmaceutical companies, biomedical researchers, and government agencies to engage in respectful dialogue and challenge each other.

No conference is perfect, and as animal advocates we naturally push for greater and faster progress towards completely replacing the use of animals in science. But as the World Congress on Alternatives demonstrates, the more we get together, the better off the animals will be. **AV**

AAVS thanks Dr. Clément Gauthier, Co-Chair of the WC8, and Dr. Gilly Griffin, Chair of the WC8 Scientific Program Committee, for contributing to this article.

Nina Mak, MS, is the Research Analyst for AAVS and the Program Consultant for ARDF.

[1] Food and Drug Administration (2006, Jan. 12). FDA Issues Advice to Make Earliest Stages of Clinical Dug Development More Efficient. Press Release. Retrieved March 2012, from http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/2006/ucm108576.htm.

Know it All in Five

In the early 1990s, I staffed a booth at a conference for toxicologists, scientists who assess the safety of substances, such as cosmetic and personal care products, and/or their ingredients. As part of our exhibit, we had a banner with the question, **"WHAT ARE ALTERNATIVES?"** Some 20 years later, that banner hangs in my office to remind me that we continually need to explain what alternatives are—and what they are not. Below are some points to note when you think about alternatives. **BY ERIN HILL**

1 WHAT IS THE QUESTION?

Recently, the toxicology community has widely recognized that animal tests cannot often provide correct or reliable information to predict health effects in humans. So why use them as 'the gold standard' against which new methods will be measured? Instead, wouldn't we be better off identifying the causes of toxic effects in humans and developing new approaches to assess those damages? This is the focus of a huge effort in the U.S. known as Tox 21, which is based on a report by the National Academy of Sciences titled "Toxicity Testing in the 21st Century: A Vision and a Strategy." Although an ambitious endeavor, the Tox 21 program may provide *in vitro* (non-animal) methods based on human tissues and cells that will provide useful data to industry and regulatory agencies.

2 WHY ARE ANIMALS STILL USED?

In over 20 years in the field of alternatives I have talked to a lot of scientists, and have never met one who wants to do animal testing. So why are animals still being used? In some situations suitable alternative methods just are not fully developed. In other situations it is due to government regulations, because many products are required to have animal test results submitted to the U.S. Food and Drug Administration and Environmental Protection Agency. However, even in these cases, non-animal methods are used to assess early formulations. In a global marketplace, much of the testing is now being requested by countries with expanding markets, such as Brazil and China. In these countries toxicity testing is a relatively new development and the reliance on animal data is strong.

3 NOT AN ANIMAL, BUT CELLS

Many alternative methods, such as computer programs and biochemical tests, do not rely on animal cells or tissues and utilize human cells or tissues instead. This is the direction new research is now taking. But meanwhile, many alternatives tests today use cells or products derived from animals. This may be the case for some time because there is not a sufficient, reliable supply of human biological material, such as organs and tissues, available on the scale required. Fortunately, new technology is helping human tissues grow right in the lab.

4 THERE'S NO ONE ANSWER

As newly developed *in vitro* methods were hitting the market in the 1990s, the hope was that they could determine the safety of almost all products under all circumstances. Headlines to this effect "No More Animal Testing!" are still seen in the media today. However, the complicated fact is that no single *in vitro* method can replace an animal model.

5 "ALTERNATIVES" OR "BETTER"?

"Alternatives" was coined to suggest that these methods were substitutes for animal tests. For many years the implication, ethics aside, was that, scientifically, the animal model was superior to any "alternative" offered. However, as science was increasingly used to design "alternatives," it became clear that these non-animal tests could be superior to animal tests.

Erin Hill is the Vice President of Program Development at the Institute for In Vitro Sciences (IIVS) in Gaithersburg, Maryland. IIVS is a non-profit organization dedicated to the use and acceptance of alternative methods. For more information on IIVS please visit www.iivs.org.

ANIMALEARN AND GLOBAL PARTNERS FEATURE HUMANE SCIENCE EDUCATION

By Laura Ducceschi

When Animalearn learned that the Eighth World Congress on Alternatives and Animal Use in the Life Sciences (8WC) was going to be held in North America for the first time in years, and that one of the themes highlighted during the event was education, we knew we had a lot to contribute. The World Congress is truly a unique event, known for its role in drawing participants from all parts of the world, representing diverse areas of the science community. Therefore, Animalearn was thrilled when 8WC organizers invited us to co-chair a scientific session on using alternatives in education. In addition, we were approved as co-organizers of a favorite Congress feature, the Multimedia Exhibition, where we could set up and demonstrate the wonderful alternatives available through The Science Bank.

AN EXCITING PANEL

I had the pleasure of co-chairing a session, entitled "Introducing multi-media to the curriculum" with Dr. Rene Remie of the Rene Remie Surgery Center in Almere, Netherlands. We invited experts, including doctors and scientists from Korea, Norway, Netherlands, UK, and U.S., to present their innovative approaches to implementing alternatives in education.

The discussion focused on higher education, especially veterinary and technical training, and the role that multimedia can play in generating availability and acceptance of alternatives.

Two critical themes were shared by the panelists. All agreed that sophisticated multimedia is both enhancing and transforming science education on a global scale, and that there is a cultural shift encouraging the use of technology in classrooms, with students at the forefront of advancing change.

Dr. Dan Smeak highlighted his surgical skills curriculum, a project funded by AAVS affiliate, the Alternatives Research & Development Foundation. He showed segments of the independent study interactive video module that is at the vanguard of reforming veterinary curriculum. Its goal is to familiarize students with key elements of surgery, and ultimately, with hands-on practical skills that they will need before participating in surgery.

Additionally, panel discussion included multimedia such as free loan programs and alternative databases and the importance of their economic efficiency. Programs like Animalearn's The Science Bank, as well as InterNICHE (international loan program) and NORiNA (database of alternatives), are critical in ensuring that access to the most technologically advanced alternatives to animal use in the classroom are widely available. The 150 session participants were encouraged to visit the Multimedia Exhibition to try some of the alternatives discussed.

WHAT WE DO BEST

The Multimedia Exhibition of Alternatives in Education and Training (MME), hosted by InterNICHE, an international organization based in the UK that also promotes humane science education, has been a featured highlight of past World Congresses.

For the 8WC, Animalearn offered to co-organize the MME, and InterNICHE welcomed the partnership. The MME showcased over 100 advanced alternatives for replacing animal use, all available from both organizations' free loan programs: Animalearn's The Science Bank and InterNICHE's Alternatives Loan System. This collaborative effort brought together global experts, producers, developers, faculty, researchers, and students, who convened in the MME to share and try new methods.

For Animalearn there could be no better fit for our resources and training skills. The MME allowed Animalearn to demonstrate why our program is so unique and do what we do best: address the needs of educational systems and individual students.

There was a steady stream of visitors to the MME, since it was open during the entire Congress.

The organization of the MME was very user-friendly, and designed to encourage attendees to become familiar and comfortable with the vast array of alternatives available.

At various stations, grouped according to types of alternatives, a range of software, models, manikins and simulators were on display. Visitors were able to meet and speak with designers of the alternatives and engage in discussion with experts on specific technology. Staffers were fluent in English, French, and Spanish. Importantly, because simply finding appropriate education alternatives can be difficult, training on new search engines was available, using updated databases.

One popular alternative was Rescue Critters' Critical Care Jerry, a lifelike dog manikin. Animalearn volunteer and veterinarian Dr. Sofia Ponce Partida from Mexico, who also works with InterNICHE, did a great job showing participants how they can teach students intubation, catheterization, and other standard medical interventions on dogs using this full-sized canine model.

GLOBAL PARTICIPATION

One of the highlights of the MME was the remarkable opportunity to hear the perspectives from scientists educated in different countries—all with a common interest in implementing humane science teaching and training.

I spent a lot of time talking with Dr. Olivier Berreville, biologist and Canadian contact for InterNICHE. Dr. Berreville discussed the challenges in achieving universal implementation of humane teaching alternatives, noting that "Disparities in the use of alternatives occur not only between institutions, but also between countries and regions." He believes there is still resistance to the acceptance and use of alternatives, but sees change in a positive direction. From his point of view, the power of alternatives available in terms of skills and knowledge acquisition is so strong that it leads one to "wonder why alternatives are not the norm in all institutions." A native of France, Berreville was happy to see the 2010 revisions to European law on animal experimentation, which he observed "now includes education, bringing further legislative power to support the use of alternatives."

The MME allowed Animalearn to demonstrate why our program is so unique and do what we do best: address the needs of educational systems and individual students.

Dr. Berreville discussed the capability of virtual reality to train future surgeons, and, while it may not appeal much to a lay person, the marvel of live surgery simulators. One simulation system, designed by neurosurgeon Dr. Emad Aboud, 'perfuses' cadavers with realistic fake blood, giving the cadaver the appearance of a live body, and a life-like surgery experience. Berreville remarked that "even surgeons could not discriminate between it and a live body when watching recorded procedures."

Other alternatives noted as particularly impressive to international participants were the VetEffects frog model, a life-like alternative to frog dissection, and Biopac Student Lab, which has the capability of showing that living humans make some of the most interesting scientific models. In Berreville's description of Biopac, he said, "This apparatus…allows students to gather experimental data related to their own body, and thus provides a much more interesting data set to that of a frog or rat."

Another InterNICHE contact for Canada and native of Ukraine, Dr. Anya Yuschenko, commented that advances in modern technologies have the ability to take alternatives in education and training to a completely new level. In her view, the capacity of interactive three-dimensional models and computer simulators will "replace years of field work and observation." High-definition anatomical views, which she indicated are often difficult, or even impossible to acquire through traditional animal dissection, are now available through alternatives such as The Glass Horse Equine Colic and the Virtual Canine Anatomy programs.

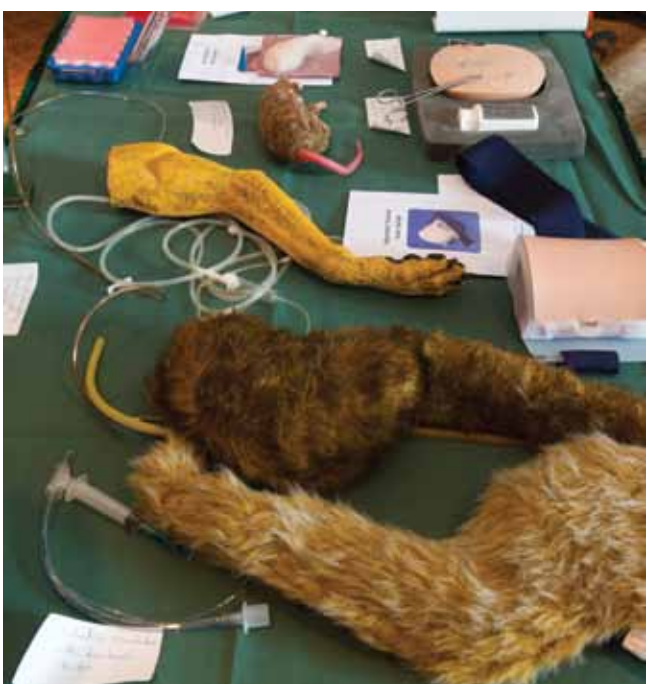
Animalearn Associate Director Nicole Green, who organized Animalearn's displays and staffed the MME throughout the conference, was not surprised by the positive response to the MME. She commented that, in our work with educators, developers, parents, policy-makers, and students every day, we have learned from first hand experience that personal interaction can have a tremendous impact that is deep and long-lasting. We agree that nurturing the interests and ideals of individuals who value improved, humane science creates an ever-widening path towards change and acceptance of alternatives to harmful animal use in the classroom. It is an approach that has led Animalearn to become the global leader we are today. **AV**

Laura Ducceschi, MBA, MA, is the Director of Animalearn.

Keep reading for a closer look at the MME

HANDS-ON LEARNING

The MME offered a wide range of innovative humane science teaching tools in addition to a program of demonstrations in replacement methods offered by experts and alternatives' developers. The exhibition presented alternatives such as realistic models and virtual reality software from around the globe; ethically sourced plastinated dissected specimens from client-donated cadaver programs; manikins with breath and heart sounds; simulators for handling, injection, and intubation practice; and a self-experimentation apparatus for physiology practical classes, among other exciting tools.



(Clockwise from top)
Dr. Sofía Ponce Partida (L) of InterNICHE demonstrates intubation with Animalearn's Laura Ducceschi (R) using the Critical Care Jerry manikin.

Dr. Partida listens to the 'heart beat' of Goldie, the K-9 Breath Heart Simulator manikin.

A selection of veterinary training models on display for MME visitors to try.

An attendee explores a frog dissection alternative.

PHOTOS BY ROB CARDILLO AND NICOLE GREEN

(Left) Animalearn's Nicole Green and InterNICHE's Nick Jukes view the many animal anatomy models on display.

(Below) Dr. Anya Yushchenko of InterNICHE (L) demonstrates a 'spay' procedure for Congress attendees on a life-like spay manikin.

TALK OF THE TOWN

The intention of the MME was to give a hands-on, practical opportunity to see and try technology, and provide a hub for discussion, networking, and sharing of resources and experience. Based on comments from Congress participants, it clearly filled that role!

The 8WC was my first international Congress" and "coming from a developing country," it was very exciting to see alternatives that I had only previously "seen in photographs and video."

Liliana Ruiz, *Student of Veterinary Medicine at the National Autonomus University of Mexico*

The MME "proved that good, quality alternatives can not only replace the harmful use of animals in all areas of life science education, from anatomy and physiology to pharmacology and veterinary medicine, but also outperform it."

Dr. Olivier Berreville, *Biologist and National Contact for InterNICHE in Canada*

"The MME is groundbreaking. Hundreds of conference attendees were afforded a first-time opportunity to witness the depth and breadth of engaging learning devices and models that are freely available."

Dr. Lynette Hart, *Professor in the Department of Health and Reproduction at the University of California–Davis School of Veterinary Medicine*

AAVS and ARDF Present at the World Congress

Several AAVS and ARDF staff, led by President Sue Leary, participated in the 8th World Congress on Alternatives and Animal Use in the Life Sciences. Two case studies based on policies and regulations involving animals were presented. One focused on the relationship between Animal Use Committees and ethics, and the other focused on AAVS's groundbreaking Birds, Rats, and Mice campaign, which aimed to gain Animal Welfare Act coverage for these animals. Both were well received and generated much discussion! Our presentations follow, and we hope that you find them informative as well as significant.

Advancing Ethics Review in IACUC Oversight of Animal Research

By Nina Mak, American Anti-Vivisection Society

INTRODUCTION

Institutional Animal Care and Use Committees (IACUCs) oversee U.S. research institutions' animal programs and have played an important role in reducing some of the worst abuses of animals in laboratories.

After 25 years, however, IACUCs struggle with adequate consideration of alternatives, and are criticized for failing to tackle a central issue—the justification and necessity of using animals for research in the first place.

Recent studies, described here, demonstrate that harm-benefit analyses are rarely performed, in contrast with public expectation that broader ethical issues are considered during the research proposal review process. In addition, there is a tendency to focus on technical aspects of refinement, with a limited role for the community representative.

In light of these findings, we provide recommendations for how U.S. IACUCs could improve consideration of ethical issues and better represent their communities, achieving harmonization with practices in other countries and international standards for ethics review.

FINDINGS: PUBLIC SENTIMENT

The public is concerned about the use of animals in research, and is willing to tolerate animal experimentation only if certain conditions are met.

38% of Americans believe medical testing on animals is morally wrong

55% believe it is morally acceptable

Gallup Poll Social Series: Values and Beliefs, 2011

23% of Americans believe the laws protecting animals in laboratories from inhumane treatment are adequate

39% believe the laws are inadequate

80% of Americans believe the welfare and protection of animals in laboratories is very or somewhat important

HRC Animal Tracker Wave Survey, 2009

22% of respondents, in UK, accept animal research unconditionally, agreeing that they are not bothered if animals are used in experiments

74% can accept animal experimentation as long as there is no unnecessary suffering to the animals or there is no alternative

IPSOS/MORI Polls for BIS and NC3RS, 2010-11

FINDINGS: PERSISTENT CHALLENGES IN IACUC FUNCTIONING

IACUCs consider narrow range of ethical issues, do not question necessity of animal use.

» IACUCs operate under a presumption of necessity of the proposed animal experiment and do not evaluate the purpose of the research in the context of the harms inflicted on the animals. (Ideland, 2009)

» IACUCs focus largely on technical issues of refinement, struggle with reduction and replacement using non-animal alternatives. (Ideland, 2009; Orlans, 1993)

» IACUCs are not designed to be conducive to broader ethical deliberation. In particular, the community member, intended to represent the public's interest and concern for animal welfare, often has a limited role on IACUCs. (Schuppli & Fraser, 2007; Orlans, 1993)

» Ethics review remains challenging even when animal ethics committees perform harm-benefit evaluations.

- » In Sweden, where half of the committee is comprised of lay persons, discussions still focus on refinement, and 99% of the 1,733 applications handled in 2003 were approved. (Ideland, 2009)
- » Committee members often have little or no knowledge in ethics or philosophy, consider ethical review as a set of rules to be followed. (Houde et al, 2009)

Deficient protocols still receive IACUC approval.

» IACUC problems are frequently cited for violations of the AWA. According to the USDA, the most significant problems between 2002-2007 included:

- » the search for alternatives,
- » the description of proposed animal use,
- » the rationale for animal use, and
- » the description of procedures to minimize pain/distress.

» Systematic reviews show that animal studies are often of poor methodological quality, with the vast majority (>80% in most cases) failing to report randomization, blinding, sample size calculations, and statistical methods. (Perel et al, 2007; Kilkenny et al, 2009; Sena et al, 2010; Hackam & Redelmeier, 2006)

U.S. ANIMAL USE POLICY: INTERNATIONAL CONTEXT

The U.S. falls short of international standards set by OIE and lags behind most developed countries in addressing ethical issues, particularly with regard to requiring harm-benefit analyses and representation of public interest in animal welfare.

	Review of Animal Use Protocols	Harm-Benefit Analysis	Committee Includes Community Representative	Committee Includes Animal Welfare Representative	Committee Includes Other Non-Animal Users[1]	National Body Advises on Ethical Issues
U.S.[2]	√		√			
OIE[3]	√	√	√			
Canada	√	√	√[4]		√	
EU[5]	√	√				√
U.K.	√	√	√			√
Sweden	√	√	√[6]	√[7]		
Switzerland	√	√		√		√
Netherlands	√	√	√	√	√	√
Australia	√	√	√	√		
New Zealand	√	√	√	√		√
Japan	√					
Singapore	√	√	√		√	
China	√					
Brazil	√			√		
India	√		√		√	

1 Examples include ethicists, alternatives specialists, statisticians, students, scientists, etc.
2 Citations for relevant laws and policies available upon request.
3 The OIE (World Organization for Animal Health) is the international reference organization for animal health for the WTO and is comprised of 178 member countries, including the U.S.
4 Committee must include at least one, preferably two or more, community representatives.
5 EU Directive 2010/63/EU passed Sept. 2010, will take effect Jan. 1, 2013.
6 Community representatives must comprise half of committee members.
7 Animal welfare representatives must be less than half the number of community representatives.

RECOMMENDATIONS: ALIGNING IACUCS WITH PUBLIC EXPECTATION

Broaden scope of IACUC function to better question proposed animal uses and more fully implement the 3Rs.

» IACUCs should evaluate the purpose of the proposed experiment against the suffering experienced by the animals. In doing so, IACUCs should also:

- » More rigorously evaluate the justification and rationale for animal use and choice of animal model.
- » Investigator should conduct a systematic review/literature search assessing the predictive value of the proposed animal model, including what has been done and the strengths and limitations of the model and alternatives.
- » Assess methodological quality of study, including proposed sample sizes, use of randomization and blinding, and statistical analyses, as these bear on the potential usefulness of results.
- » Assess how results will be communicated, and prospectively register approved protocols (anonymously as necessary), as the reporting of results, even if negative or neutral, is important for reassessing the utility of an animal model or avoiding duplication of experiments.

» Decisions by funding agencies should not supersede the IACUC's evaluations.

» IACUCs should be empowered to actively create a culture of care for the institution and make recommendations to the institution regarding its animal use policies.

Adjust composition and format of IACUC to better incorporate relevant expertise that will support the IACUC's broadened functions.

» Strengthen role of community representative (non-affiliated member) to provide better presentation of public's views on animal use.

- » Increase number of community representatives on IACUC (at least 1/2 of committee membership).
- » At least one community member should represent animal welfare interests.
- » Nominations for community representatives should be solicited from community organizations (including animal welfare groups) and from institutional sources external to IACUC.

» Include alternatives specialist and statistician on IACUC to help shift focus from refinement to reduction and replacement.

» Require alternatives information search training for all IACUC members.

» Require decisions to be by consensus, with option for dissenting opinions, rather than by majority vote.

» Assign members role of playing devil's advocate.

» Make IACUC protocol reviews publicly available.

Establish national Animal Ethics Advisory Committee to assist IACUCs in ethics review.

» Committee would provide guidance and framework for conducting harm-benefit analyses and ethical decision-making.

» Committee would address broad topics in ethics requiring more extensive deliberation beyond the capacity of the IACUC, including highly controversial uses of animals, such as:

- » Procedures that cause significant or unrelieved pain or distress.
- » Procedures that use non-human primates, dogs, cats, pigs, or horses.
- » Procedures involving genetically engineered animals.
- » Procedures where the outcome of the cost-benefit analysis is not clear.

» Committee should include ethicists, scientists, representatives of the animal welfare community, and lay persons to reflect the spectrum of societal values that bear on ethical review

» Lay persons should comprise 1/2 of the membership.

» Specialized knowledge and technical expertise should be sought out as necessary.

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Exclusion of Birds, Rats, and Mice from Legal Protection in the U.S.

A SCIENCE POLICY CASE STUDY

By Sue A. Leary, Alternatives Research & Development Foundation
Crystal Schaeffer & Vicki Katrinak, American Anti-Vivisection Society

INTRODUCTION

The Animal Welfare Act (AWA) is the only U.S. law that governs treatment of animals used in research, testing, and education. With the 1970 amendments, coverage under the Act was extended to any "warm-blooded animal, as the Secretary [of Agriculture] may determine is being used…for research, testing, [and] experimentation." However, in the process of writing the regulations to implement the law, the U.S. Department of Agriculture (USDA) chose to interpret that clause as having discretion to exclude the vast majority of warm-blooded animals used in research: rats and mice.

Animal protection groups objected, and a federal judge called the exclusion "arbitrary and capricious." However, the USDA's determination remained in effect until a second judge's critical assessment prompted a lawsuit settlement in 2000, and USDA agreed to proceed with timely regulatory process.

The legislative and regulatory history of the AWA is generally one of expanding protections but, in 2002, leadership in the U.S. Senate approved an amendment to the Act that explicitly and decisively reversed the USDA's agreement.

This case study provides a qualitative analysis of relevant policy considerations, drawing on court documents, legal articles, and papers from the Alternatives Research & Development Foundation (ARDF), which initiated the lawsuit against USDA. While animal law classes in the U.S. study this protracted debate and its legal status, key details, such as the effect on the adoption of alternative methods and opinion polls showing scientist support of regulation of these species, are often overlooked. This case study also makes recommendations for continued advancement of the AWA.

KEY ISSUES

1 While animal research lobbyists claimed to represent scientists, in fact, the research community showed support for revising the AWA definition of animal to include birds, rats, and mice.

AAALAC "…conditionally supports the inclusion of mice, rats, and birds under the enforcement provisions of the AWA."[1]

AALAS "…supports the inclusion of rats, mice, and birds under the enforcement provisions of the [AWA]."[2]

CAAT "CAAT Advisory Board members issue statement in support of the inclusion of rats, mice, and birds in the Animal Welfare Act."[3]

SCAW "…supports the principle that laboratory-bred rats and mice should be included under USDA regulations."[4]

Colgate Palmolive Company "…urge you not to support a recently proposed amendment to the Farm Bill…which would deprive rats, mice, and birds legal guarantees for the same level of care required for any other animal used in research and testing."[5]

Procter & Gamble "…expresses its support for the inclusion of rats, mice, and birds under the USDA enforcement of the [AWA]."[6]

IACUC and APA survey reported by Plous and Herzog.[7]
73.3% IACUC members support AWA inclusion of rats and mice.
69% IACUC members support AWA inclusion of pigeons.
73.6% APA members support AWA inclusion of rats and mice.
74.7% APA members support AWA inclusion of pigeons.

2 AWA inclusion of birds, rats, and mice ensures meaningful consideration of the 3Rs in accordance to relevant policies, regulations, and laws.

» Amendment to AWA calls for consideration of alternatives to painful procedures, requires registered facilities to establish IACUCs, National Agriculture Library must create alternatives information service. (Dec 23, 1985)

» Federally-funded researchers instructed to consider *in vitro* methods to produce MAbs as the default method, following an agreement between NIH and ARDF. (Dec 20, 1999) Estimated this affects one million mice a year;[8] however, currently there is no way to monitor because mice are excluded from the AWA.

» Cosmetics Directive (76/768/EEC) instructs use of alternatives to painful procedures and its 7th Amendment bans the sale of cosmetics tested on animals, regardless of origin of manufacture. (Sept 11, 2004)

3 Exclusion of majority of animals, including birds, rats, and mice, from the AWA is inconsistent with other policies and laws. Examples mentioned below. This situation presents practical barriers to harmonization.

» Former Senator Bob Dole, sponsor of 1970 amendments, re-asserts Congressional intent was to include birds, rats, and mice in AWA. (Mar 19, 2001)

» NIH–OLAW, Public Health Service Policy on Humane Care and Use of Laboratory Animals. (1985)

» NIH–ILAR, Guide for the Care and Use of Laboratory Animals (1963)

» Cosmetics Directive (76/768/EEC) covers all vertebrate animals, including birds, rats, and mice, in EU animal welfare laws pertaining to research and testing. (July 27, 1976)

4 Projections showing **vast majority of animals used in U.S. research and testing and not covered by the AWA.** This includes GE mice, who have particular welfare concerns.[9] (Figures below based on assumption that similar percentages of vertebrate animals, including birds, rats, and mice, are used in EU and U.S.)

	1999	2002	2005	2008
Total number of animals in EU	9.8 million[i]	10.7 million[ii]	12.1 million[iii]	12 million[iv]
Percent of EU not covered by U.S. AWA, incl. birds, rats, mice, fish, amphibians, reptiles	91.9%[i]	92.8%[ii]	93.2%[iii]	93%[iv]
Total number AWA animals in U.S.	1,217,998[v]	1,137,580[v]	1,177,566[vi]	999,798[vii]
Estimate number of U.S. animals (vertebrates) excluded from AWA coverage.	15,037,012	15,799,722	16,139,581	13,283,030

i European Commission. COM(2003) 19 final.
ii European Commission. COM(2005) 7 final.
iii European Commission. COM(2007) 675 final.
iv European Commission. COM(2010) 511 final/2.
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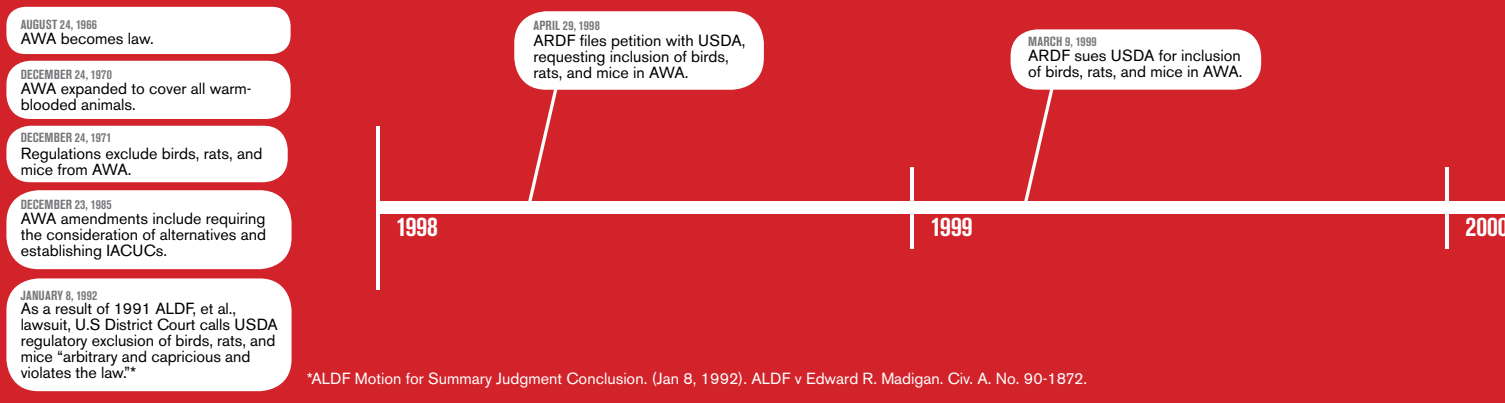


*ALDF Motion for Summary Judgment Conclusion. (Jan 8, 1992). ALDF v Edward R. Madigan. Civ. A. No. 90-1872.

SCIENCE-BASED DECISION OR POLITICS?

NABR's August 4, 2000 motion to intervene in the ARDF lawsuit against USDA claimed concerns over APHIS's financial resources for enforcement, consistency with current established standards, and administrative and economic costs for research facilities.[10]

Johns Hopkins University submitted a motion to intervene on September 22, 2000, in the ARDF lawsuit stating that "Hopkins is opposed to any USDA regulation of the use of mice, rats, and birds in research."[11]

According to an October 12, 2000 editorial in *Nature*[12] lead opponents to USDA's settlement were the Association of American Medical Colleges (AAMC), the National Association for Biomedical Research (NABR), and the Federation of American Societies for Experimental Biology (FASEB.) It reported that AAMC asked leaders from the University of Mississippi Medical Center to lobby Senator Thad Cochran (R-MS), who chaired a powerful appropriations committee. Inserting language into a spending bill, Senator Cochran deftly prohibited USDA from acting on the settlement reached with ARDF and initiating regulation of birds, rats, and mice. His amendment was approved without debate, as was the Helms amendment almost two years later.

The *Nature* editorial further noted that the American Association for Laboratory Animal Science called the exclusion of birds, rats, and mice "ethically indefensible," and so the research lobbyists were giving a false impression that "researchers are united in opposing the changes" [to cover birds, rats, and mice]. The editorial went on to caution that lobbyists' arguments "verge on the reactionary" and ultimately "research could suffer."

Just as U.S. research lobby groups opposed instituting IACUCs in the 1985 amendments to the AWA,[13] and spoke in opposition to new restrictions on use of chimpanzees in experiments in August 2011, they applied their political clout in 2000-2002 to stop regulation of birds, rats, and mice used in laboratories.

Any future attempt to include vertebrates in the AWA should anticipate opposition from these groups. Researchers who support a U.S. law covering all vertebrates used in experiments will need to find a way to be heard politically.

RECOMMENDATIONS

The authors recommend amending the Animal Welfare Act to include all vertebrate species, including birds, rats of the genus Rattus, and mice of genus *Mus*, bred for research under the definition of animal in the AWA.

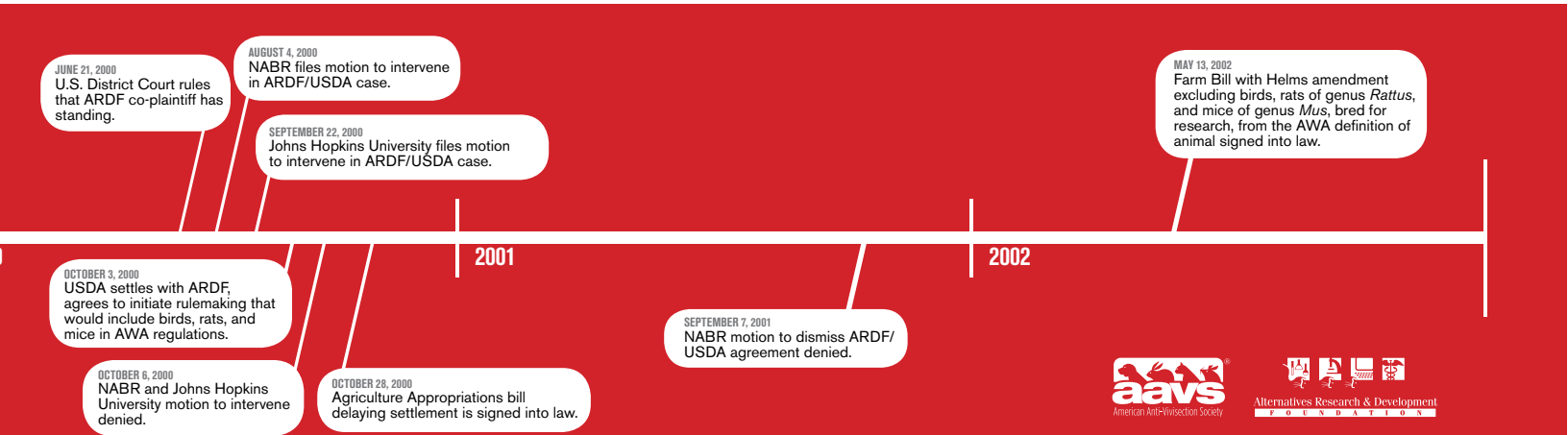
We recognize concerns regarding financial and logistical matters. However, ethical considerations, the need for public accountability, and measuring progress on the 3Rs, requires extending legal protections to these animals in the United States.

Taking such action is likely to spur the development and use of alternatives in accordance with the 3Rs, especially at smaller colleges that may only keep rats for educational demonstrations that could just as easily be achieved with alternatives. Reduction is also likely, once mouse numbers are taken seriously. It may also help to increase interest in non-animal methods at small biotech companies.

Lastly, coverage of all vertebrates under the AWA would create harmonization among U.S. agencies, domestic and international law, industry, and animal welfare groups.

Meanwhile, the authors suggest the following to facilitate scientific and political acceptance for the inclusion of all vertebrates under the AWA definition of animal:

- Voluntary submission of numbers of all vertebrate animals to USDA, utilizing existing Annual Report forms.
- Ensure adequate funding so that USDA's Animal Care can carry out its current duties.
- Convene a working group with broad representation, including experts in the 3Rs and animal welfare, to assess scientific consensus and determine phase-in strategies for aligning the U.S. with other countries by including all animals used in science in the AWA.



aavs American Anti-Vivisection Society
Alternatives Research & Development FOUNDATION

ARDF Makes the Connection


Sue Leary (L) of ARDF with Barbara Grune (R) of Germany's ZEBET at the 5th World Congress.

Since 1996, the American Anti-Vivisection Society and the Alternatives Research & Development Foundation (ARDF) have participated in every World Congress on Alternatives. In particular, ARDF, which has a mission very much aligned with the World Congress, has been a sponsor, and helped plan programs. ARDF's leadership and visibility are appreciated and important because our priority on fully replacing animals in research and testing serves as a reminder that the animals are the main reason that these meetings came into being.

The World Congresses have provided the ideal platform for some of ARDF's most important advancements. In 1999, at the 3rd World Congress in Bologna, Italy, ARDF organized and sponsored a workshop of invited experts on "Production of Monoclonal Antibodies," a hot topic at the time, as the U.S. considered a legal petition filed by ARDF to ban the prevalent, painful animal method of antibody production. (Antibodies are widely used in many fields of research and testing.)

The workshop brought together scientists who had received ARDF research grants to evaluate alternative methods and others who prepared presentations on the challenges and benefits to implementing their use. Then-director John McArdle conducted the discussion among participants on the implications of the shared findings and guided the group to draft recommendations. A convincing case was made that since practical alternatives had become widely available, there was no justification for the routine use of mice to produce monoclonal antibodies.

Following publication of the proceedings a few months later, the National Institutes of Health agreed and, in response to ARDF's petition, declared that *in vitro* methods should be the "default" method, with animal use approved only if justification could be provided. We estimate that over one million animals have been spared as a result of this advance of alternative methods.

> We estimate that over one million animals have been spared as a result of this advance of alternative methods.

Sue Leary, ARDF president, commented, "This workshop was a perfect illustration of the significance of gaining scientific consensus for alternatives. Understanding how science works, ARDF borrowed from, and built on, the findings of previous working groups, individual scientists, and science policy leaders, especially those in Europe. But we brought a fresh perspective, focused on replacing animals as widely as possible in the U.S., and that is why we achieved so much." The 3rd World Congress provided a unique environment for that workshop. Years later, participants still remark on the lasting value of the endeavor.

Last year, at the 8th World Congress, ARDF sponsored AAVS's Animalearn department and their international partner, InterNICHE, enabling them to host a three-day Multimedia Exhibition for alternatives in education and training. (see page 10)

In the years in between, ARDF has forged partnerships and influenced alternatives development, in large part because of the international cooperation found at the World Congresses, which is truly a group effort. ARDF has become a valued partner, embodying the seamless merger of ideals and pragmatism. We aim for replacement of animals and excellent science, and demonstrate how to put those beliefs into action with meaningful programs that fund innovation and collaboration. We welcome scientists who aim for replacing animals in research, testing, and education to join us at future World Congresses. **AV**

The mission of the Alternatives Research & Development Foundation is to fund and promote the development, validation, and adoption of non-animal methods in biomedical research, product testing, and education.

PHOTOS BY ROB CARDILLO

AAVS & ARDF WORLD CONGRESS HIGHLIGHTS

1996 AAVS Executive Director Tina Nelson helps introduce the newly launched Coalition for Consumer Information on Cosmetics (CCIC) to participants at the 2nd World Congress in Utrecht, Netherlands, enlisting international companies for the program, and supporting European legislation to ban animal testing on cosmetics.

1999 Chaired by Director John McArdle, ARDF sponsors the "Production of Monoclonal Antibodies" satellite workshop at the 3rd World Congress in Bologna, Italy. Proceedings were published early in 2000 with worksheets available for Institutional Animal Care and Use Committees (IACUCs); together with other resources, they are sent as a 'Compliance Kit' to all U.S. research universities and others.

2002 ARDF is an official sponsor of the 4th World Congress in New Orleans. John McArdle chairs a workshop on adoption of alternative methods for producing monoclonal antibodies, and makes a presentation on the lack of regulation of birds, rats, and mice in the U.S. AAVS's Animalearn presents on a panel regarding alternatives in education. ARDF presents the William Cave Award for achievements in alternatives to Leon Bruner, a scientist who advanced *in vitro* methods to replace the Draize rabbit eye test and other wasteful animal tests.

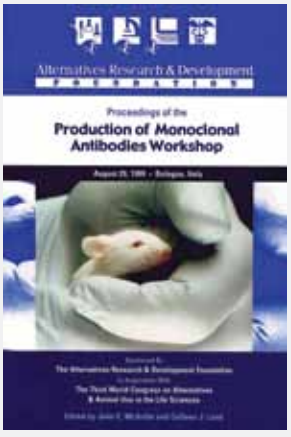
2005 ARDF is an official sponsor of the 5th World Congress in Berlin, and participates in the Animal Protection satellite meeting that issues a resolution calling for an end to primate experiments, signed by Jane Goodall.

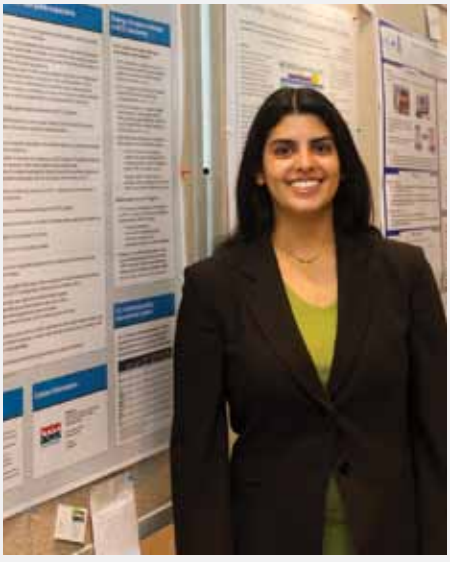
2007 ARDF sits on the Planning Committee of the 6th World Congress, held in Tokyo, and provides major sponsorship in order to boost much-needed alternatives efforts in East Asia, which was experiencing a surge in animal research labs. Animalearn presents a poster on successful strategies to achieve student choice policies.

2009 ARDF is a sponsor of the 7th World Congress in Rome, with a timely focus on alternatives to cosmetics testing and achieving unity among European animal advocates. Animalearn presents a poster on its landmark "Dying to Learn" report, exposing the supply and use of dog and cats in higher education, which is later published in the journal *ALTEX*.

2011 ARDF is a sponsor of the 8th World Congress in Montreal. Animalearn is a co-organizer of the Multimedia Exhibition and Director Laura Ducceschi is co-chair of a workshop on introducing multimedia in classrooms. ARDF, AAVS, and Animalearn present posters on education and policy themes. ARDF provides funding for 2010 ARDF Alternatives Research Grant recipients from Arizona, Colorado, and California so they can present their work.

2014 ARDF will be a sponsor of the 9th World Congress, to be held in Prague, Czech Republic, bringing a boost to alternatives development in central and eastern Europe, where research institutes and testing labs have become a significant part of economic development.





(L) Laura Ducceschi and Animalearn's "Dying to Learn" poster. (C) Publication of ARDF's workshop proceedings from the 3rd World Congress. (R) AAVS's Nina Mak with her poster on animal committees. **(see page 12)**

Public Opinion on Animal Testing

By Justin Goodman

One of the themes of the 8th World Congress was "Policy/Law on Animal Use, Public Engagement, and Ethics Review." The top prize for posters in that theme went to Justin Goodman, and co-authors Casey A. Borch and Elizabeth Cherry for "Americans' Attitudes Toward Animal Testing: 2001-11," their examination of a decades' worth of public opinion polling and analysis. Some of the highlights of the poster presentation are featured in this article, followed by a commentary on why we might be seeing these changes.

Animal rights activists and animal experimenters don't agree about most things, but one area of consensus is that the public's aversion to animal testing is on the rise.

Conflicting views about the propriety of experimenting on animals date back nearly two millennia, and the issue has been one of particular interest in the U.S. since the 19th century. The first national poll on peoples' attitudes about the controversial practice in 1948 reported that an overwhelming 84 percent of Americans supported animal testing and only eight percent opposed it.[1]

However, independent surveys and animal-testing-industry polls have uniformly shown a consistent and substantial drop in public support for animal testing.

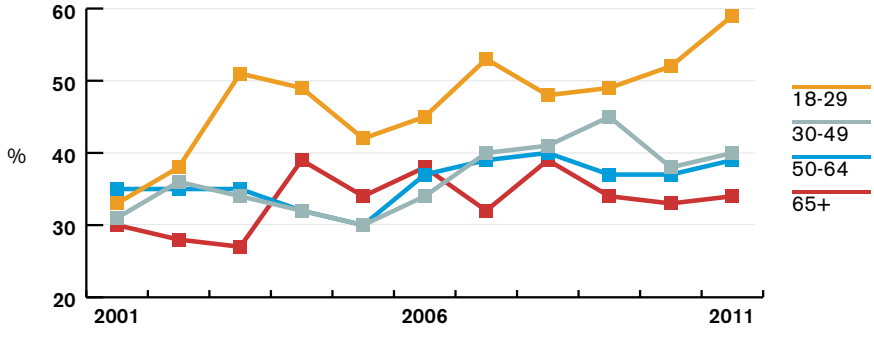
In 2001, the independent polling organization Gallup began conducting its annual Values and Beliefs survey, which asks American adults their opinion on "medical testing on animals." Since then, the number of people overall responding that it is "morally wrong" (versus "morally acceptable") has increased from 33 to 43 percent.[2]

The greatest shift in attitudes about animal testing during this period can be seen among young adults (ages18-29), whose opposition rose 25 points to where it stands now at 59 percent. Even though opposition increased modestly in other age groups as well, according to the survey data, support for medical testing on animals remains highest among older people (65+), where only 34 percent oppose it. These trends appear to indicate a widening gap of generational difference of opinion about this issue. (See Figure 1)

Like young adults, a majority of women (52 percent) also find medical testing on animals morally wrong, an increase of 12 percent since 2001. (See Figure 2) Women are now more than twice as likely as men to oppose the practice, a difference which has been attributed to women's greater care and concern for animals more generally.[3]

An area that is not well understood

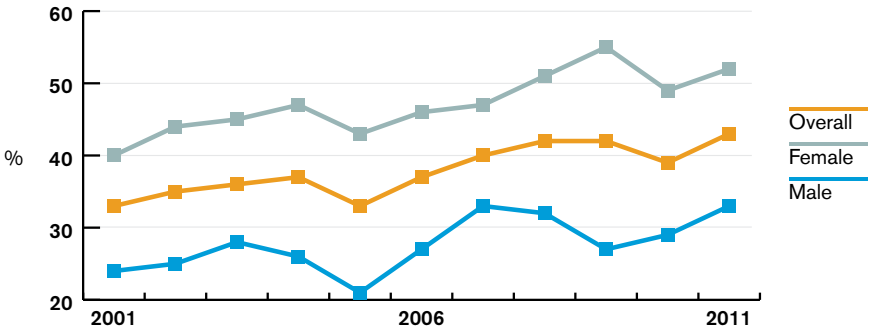
FIGURE 1: OPPOSITION BY AGE GROUP



Source: Gallup "Values and Beliefs" Poll 2001-11

PHOTO BY ISTOCKPHOTO

FIGURE 2: AMERICANS' OPPOSITION TO MEDICAL TESTING ON ANIMALS



Source: Gallup "Values and Beliefs" Poll 2001-11

is the correlation between the education of participants and their opinion on whether animal testing was morally wrong. The more formal education survey participants had, the more likely they were to approve of animal testing. In fact, 65 percent of those with less than a high school level of education opposed medical testing on animals.

Political affiliations, identified as conservative, moderate and liberal, also correlated with attitudes. Moderates surpassed the others with 50 percent opposing medical testing on animals.

Overall, opposition to medical testing on animals—which historically has been the most widely supported of all forms of animal experimentation—rose from 2001-2011 in all but one of the demographic categories measured by Gallup. Opposition to cosmetics testing on animals is considerably higher; 72 percent according to one recent poll.[4]

By all accounts, people are growing increasingly intolerant of animal testing. Further studies may help identify the causes of the trends reported. But in any case, because the practice is largely funded by consumer and tax dollars and allegedly conducted on the public's behalf, these shifts in opinion should be prompting a paradigm shift in the way science is conducted—away from animal use.

WHY THE CHANGE?

Proponents of animal experimentation see these statistics as cause for alarm and attribute this transformation to what they claim is people's ignorance about the alleged "benefits" of animal testing.[5] But in my view, this explanation is off-the-mark. American culture still, unfortunately, paints animal testing in a positive and uncritical light, and people are constantly exposed to this messaging via the media, medical and scientific communities, teachers, and textbooks.

Opposition to animal testing isn't on the rise because people don't know the pro-animal-testing position, it's because they know better.

Since the first poll on animal testing was conducted in 1948, and certainly in the last several decades, the general public's awareness about the pain and suffering that animals endure in laboratories has increased. Most recently this is due in large part to animal protection organizations' effective harnessing of the internet's potential as an advocacy tool[6] to dispel the white-washing and scare-mongering that vivisectors rely on to defend their cruel trade.

Since 2001 when the Gallup poll discussed was first administered, there has been a large increase in internet usage among adults.[7] The corresponding rise in opposition to animal testing is unlikely coincidental. Animal protection groups have considerably outperformed pro-vivisection groups at creating and growing communities of online supporters. For example, People for the Ethical Treatment of Animals (PETA) has more than 1.8 million followers on its two main Facebook pages, while the two largest pro-animal testing groups have less than 26,000 combined.

The importance of these developments for animals cannot be overstated. Historic exposés that catapulted the issue of animal testing into the public consciousness and literally transformed public policy—like the landmark 1960s *Sports Illustrated* and *Life* magazine features that revealed the horrendous trafficking of stray dogs for experimentation and PETA's disturbing 1981 Silver Spring monkeys undercover investigation—speak to the power that images of animal suffering in laboratories wield when brought to the masses.

Today, with the advent of the internet and its widespread adoption, individuals and organizations are able to immediately transmit these images, along with information and calls for action, to tens of millions of people, who can access them for free, from anywhere in the world and at any time they please.

People now have no shortage of easy ways to publicly air their grievances, alert their friends and family, and hold recalcitrant government agencies, consumer products companies, and universities accountable for continuing to mutilate, poison, and kill animals in laboratories. **AV**

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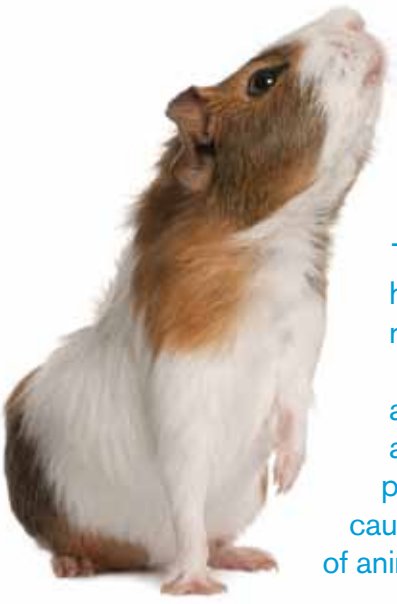
Reducing EPA's Animal Testing

By Catherine Willett, Patricia Bishop, and Kristie Sullivan



In the 1990s, environmentalists sounded alarms that chemicals, particularly those in pesticides that seek to disrupt the reproductive cycle of 'pest' insects, may be causing damaging effects on the endocrine systems of humans and wildlife. The endocrine system coordinates the body's hormonal activities, including those affecting reproduction and metabolism.

This article is based on information the authors presented at the 8th World Congress and critically examines the U.S. government's plans for a massive testing program that will cause the suffering and death of literally millions of animals, unless alternatives are put in place.

The potential health effects of environmental exposure to chemicals with endocrine activity have been a topic of much concern in the media in recent years. Proving a causal relationship between exposure and effects at either the individual or population level is exceedingly difficult. Nonetheless, Congress instructed the Environmental Protection Agency (EPA) to test chemicals for endocrine activity, and the agency focused on the possible effects of the reproductive and thyroid systems in humans and wildlife. More than 10 years later, EPA launched its Endocrine Disruptor Screening Program (EDSP) in 2009.[1]

The current EDSP design is organized into two stages, or 'tiers,' of tests. Tier 1 consists of six animal (*in vivo*) tests and five non-animal (*in vitro*) tests that are intended to screen chemicals for the *potential* to interact with the endocrine system.[2] Tier 2 has not been finalized, but is likely to consist of developmental and reproductive toxicity tests using several animal species to observe potential adverse effects that might result from the activity identified in Tier 1. Conducting all eleven EDSP Tier 1 tests would require a minimum of 520 animals and cost between $335,100-$964,250 *per chemical*.[3,4] It is not yet possible to estimate the cost of Tier 2 testing; however, the typical reproductive toxicity test in mice or rats kills 2,600 animals and costs about half a million dollars.

GETTING STARTED

The first chemicals to be tested in the EDSP include 58 pesticide active ingredients and nine common chemicals used as pesticide ingredients. If all of the Tier 1 tests were performed for all 67 chemicals, more than 35,000 animals would be consumed and testing would cost more than 36 million dollars. (See page 23) Yet, this is only the screening phase, designed to identify substances that have the potential to interact with the reproductive or thyroid hormonal systems. In the short-term, EPA plans to evaluate all pesticides and chemicals found in potential sources of drinking water, somewhere between 6,000-10,000 chemicals. Eventually, EPA and other regulatory programs would like to test all marketed chemicals; estimates of this number vary from 30,000-80,000. Clearly, considering the high cost of the Tier 1 testing, in terms of money and animal lives, this approach should be reconsidered.

A DIFFERENT APPROACH

The efficiency of screening and testing chemicals for endocrine activity can be significantly improved by taking a more integrated approach based on the properties of the chemical.[5] Starting with a full evaluation of existing data, including physical and chemical properties, information about biological activity and known exposures, chemicals of greatest concern can be prioritized for further evaluation.

Of course, some might argue that cost, especially in dollar terms, and perhaps even in terms of animals killed, is of minor consideration if it effectively protects humans and the environment from harmful chemicals. However, the fact is that data obtained from animal testing is of questionable protective value: the results are highly variable, difficult to repeat, and hard to use for making decisions about chemical safety.[6] Better approaches are being developed that not only save animals, but provide information that would be much more useful in achieving human environmental safety.

Several evaluation methods that do not involve animal testing currently exist that can be used to gain more information about a chemical. For example, there are a number of computer models that can predict a chemical's biological activity based on its structure, and EPA is developing a large array of *in vitro* tests that can be used to prioritize chemicals according to potential endocrine activity.[7] Only after these assessments are

PHOTO BY BIGSTOCK

performed would any animal testing be considered, which would greatly reduce the number of animals used in evaluating the endocrine effect of chemicals. Using the pesticide atrazine as an example, we showed that 77 percent of the animals killed in the EDSP Tier 1 assays could have been saved if such an integrated approach had been followed.[8]

FUTURE DIRECTION

EPA has begun the process of revising its approach to the screening of chemicals for potential endocrine activity. As a result of instructions from the Office of Management and Budget (OMB),[9] the U.S. House of Representatives Appropriations Committee for the Interior and Environment,[10] and the EPA's own Office of the Inspector General,[11]—all of which directed the agency to improve its methods of evaluation—EPA has issued a work plan for incorporating *in vitro* assessment tools into the EDSP.[12] This will help EPA prioritize the list of chemicals to evaluate, with the eventual goal being the replacement of the current Tier 1 testing with a completely *in vitro* screening approach. EPA has also issued a document describing how it will evaluate all available information in a more comprehensive way,[13] and while this document is somewhat vague in the details, it heads in the direction of a more thoughtful evaluation. Although falling short of a true integrated strategy as outlined here, EPA's new plan for the EDSP does describe a more efficient approach than it is currently taking and, as a result, is likely to lead to decreased reliance on animal testing.

OUR ROLE

As a final note, much of the progress described here was influenced by animal protection groups. We met with the Office of Management and Budget, which provides oversight of federal agencies, and with members of Congress to argue the high cost versus low benefit of the program. We also submitted numerous comments to and met with EPA to discuss problems with and solutions to the existing EDSP organization, and made several public presentations discussing potential solutions. And as the program continues, we will continue with our partners to push for progressive improvements to reduce the use of animals. **AV**

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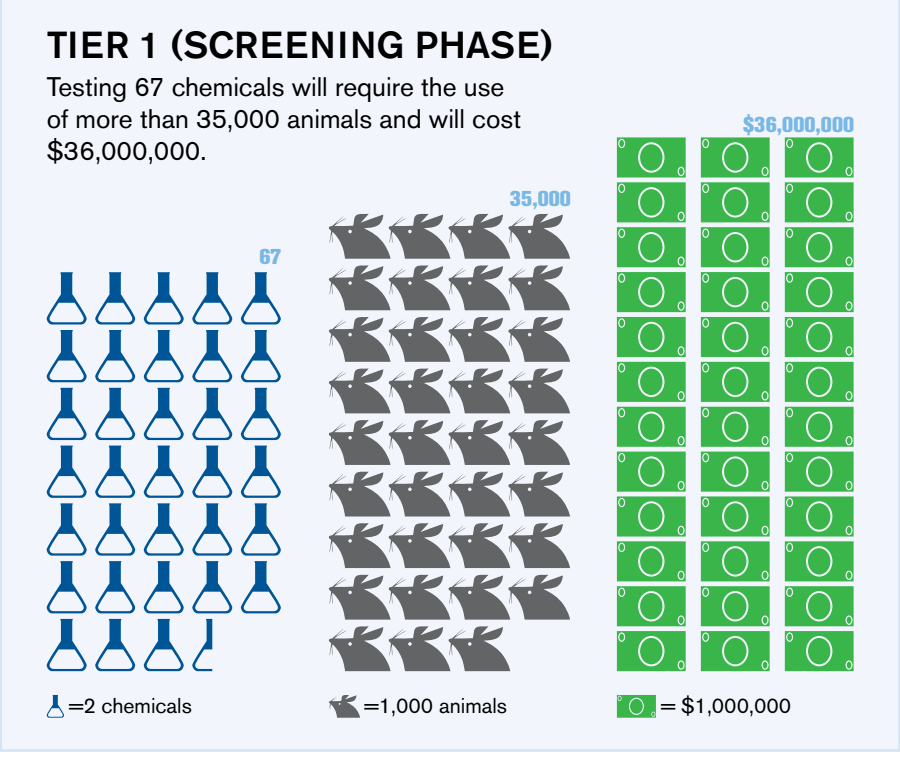

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PROFILE

Alan Goldberg

Founding Director, Center for Alternatives to Animal Testing

Toxicology Professor Alan Goldberg, Ph.D., established the Center for Alternatives to Animal Testing (CAAT) at Johns Hopkins University's Bloomberg School of Public Health. He has had a long-standing interest in alternatives and humane science, including how they relate to regulation and policy. A pioneer in the modern alternatives era, Dr. Goldberg and CAAT hosted the first World Congress. His unique perspective helped to nurture an environment for inclusivity, information sharing, and finding common ground—all traits that make the World Congress so special. Here Dr. Goldberg shares some of his thoughts on the role of the World Congress, CAAT, and what lies ahead in the field of alternatives.

AAVS: The first World Congress was in 1993. Why was there a need for such an endeavor?

DR. GOLDBERG: The field of alternatives is generally dated to 1959, with the publication of *The Principles of Humane Experimental Technique* by Bill Russell and Rex Burch. FRAME [Fund for the Replacement of Animals in Medical Experiments] was registered in the UK in 1969; CAAT was founded in 1981; and in the following decade, many countries established centers dealing with alternatives and the 3Rs (refinement, reduction, and replacement). This seemed the right time to bring all of the programs together to share science, information, and approaches, and to really learn about each other.

What's been the Congress's role in alternatives development?

Each Congress has been instrumental in furthering the development of the 3Rs. There have been significant advances in both refinement and replacement; however, reduction is an important area that seems to attract less scientific attention.

What about practical information or training?

A very important aspect of the Congresses is the sessions on databases and search engines related to alternatives. There have been sessions devoted to software and training videos, some hands-on, which have clearly added to the educational, informational, and scientific programs.

How does the Congress find funding?

The major funding comes from industry, with other support derived from nongovernmental organizations [NGOs], governmental agencies, and some of the alternatives centers themselves.

What do you think motivates industry to be involved and help fund the Congress?

There are several reasons. Number one, industry is smart and wants to be responsive to its customers. Two, it's clear that animal testing for toxicology has many shortcomings. So if industry can get better methodology that gives them a better level of comfort, clearly they're going to do that. And I think the third thing is economics. *In vitro*, once established, is clearly much less expensive than animals. It's better science, it's more humane, and it addresses issues that animal studies just do not.

It's a win-win for everyone.

Yes, and another aspect of industry participation is that there is now an *in vitro* industry. This group includes developers of methods, suppliers for the industry, and *in vitro* contract research organizations.

PHOTO COURTESY OF CAAT (THIS PAGE) AND BY ISTOCKPHOTO (OPPOSITE)

Interesting that a whole new industry was born out of this movement. What about regulators, what's their role?
In some cases, the regulatory community is beginning to take the lead on how to get some of this implemented. When it first started, they had been charged to protect human health, so they had to be convinced that [alternatives] were better. But it was the Environmental Protection Agency [EPA] that commissioned the study on what toxicology would look like in the twenty-first century.* So here EPA is taking the lead.

In your view, what's been the role of animal advocacy groups in spurring alternatives development?
The animal protection community has played a very important role in awakening awareness. In some cases, they have been instrumental in getting industry scientists, government scientists, regulators, and academic scientists to look seriously at what's possible.

How does a diverse group of stakeholders come together to move forward?
In its earliest days, CAAT tried to bring the regulatory community, industry, and the academic community together with its symposia. Industry had pressure from people like Henry Spira, and the regulatory community at the time started to look at how they could do better eye irritation testing; were there *in vitro* approaches they could use? So the dialogue began. From the very first Congress, we had all stakeholder groups involved, including the academic, industrial, governmental, and NGO communities. This mix of individuals has continued at each Congress with the animal protection community becoming more involved and clearly reaching co-equal status.

In the planning stages of the first World Congress, could you have ever imagined the innovation of some of our present day alternatives?
It is a simple yes. At the time, tissue culture was just becoming a standard laboratory technique. I had published a paper on the use of tissue culture in trying to look at a mechanism of toxicity. So I had already begun to think about [its] use as a way to get better toxicologic information. And the reason we went to tissue culture was, when we tried to do animal studies to look at the mechanism we were interested in, we could not do it. So there were scientific reasons we went to tissue culture, and that helped us work out that problem.

How did it become so widely accepted?
When industry came to me, it was very clear that the science was not there yet. So instead of CAAT setting up a lab, we decided to make the field, and try to get people to understand the issues. The grant I had was $350,000 a year. We used those funds to fund researchers all over to look at how to do tissue culture better and how to make it apply to toxicology. Our initial funds went for studies that helped grow human cells in culture. We went to the best laboratories to try to get people to grow human cells in a standardized way so that everybody could use them for evaluation.

So the foundation was established.
Yes, and from 1981 to the World Congress in '93, I had about 12 years of thinking this through with the CAAT Board, which had a number of brilliant thinkers on it. But by the time of the first World Congress, it was clear that I had a vision of how we were going, and I think that when the Tox21 study got done, much of those initial questions were based on things that CAAT had done.

CAAT has been influential.
Yes. I think over 60 percent of [the Tox21 authors] either were a member of the CAAT Board at one time or received a CAAT grant at some point, so our influence was as we hoped it to be: widespread and independent.

What do you see in the future?
We actually will be looking at just the opposite of what we're looking at now. We're going to know which pathways are necessary to be activated for a toxic response to occur. In the case of certain tumors, we know that 12 or more gene pathways have to be activated for that tumor type to grow. If none of those pathways are activated, you cannot get a cancer of that type. And this is the same thing that's going to happen in toxicology. We'll be able to study agents against these combinations of pathways, and be able to say with certainty that this compound is not capable of producing that toxicity.

Seems like alternatives development has been moving at a rapid pace.
It's faster than the development of most scientific areas. In the 50 years since the publication of the Russell and Burch book, we already have scientifically valid methodology that the cosmetic and household goods companies use to make decisions, and these companies are on the verge of completely eliminating animal use in product development and safety testing. One could think of this as "From Science to Regulation" at the speed of light.

Do you see an end to animal testing?
I believe as the promise of these new methods and concepts become implemented we will see the complete end to animal testing in toxicology. My time frame is the near future. **AV**

* Released in 2007 and entitled "Toxicity Testing in the 21st Century: A Vision and a Strategy." Also called Tox21.

Alan Goldberg, PhD., is a Professor of Environmental Health Sciences and Chairman of the Board of the Center for Alternatives to Animal Testing, at John Hopkins Bloomberg School of Public Health in Baltimore, MD.

Full Replacement: Anti-Vivisectionists' Hope, Researchers' Forecast

By Martin Stephens

The World Congress arranges several plenary sessions throughout the week at times when no other activities are scheduled, allowing everyone to attend. The following article is based on the author's plenary presentation, entitled "Pursuing Medawar's Challenge for Full Replacement."

A remarkable convergence is occurring in the long-term thinking of anti-vivisectionists and animal researchers alike. The former are calling for the day when animal experimentation becomes a thing of the past. Scientists are increasingly forecasting that this day will come. This alignment of views is not widely known or appreciated. In fact, some defenders of animal experimentation have a hard time accepting the likelihood or desirability of what might be termed "full replacement." However, recognizing and capitalizing on this common ground is pivotal to speeding up the process of phasing out animal experimentation.

Of course, for anti-vivisectionists and researchers, the means and motivation for ending animal experimentation overlap but are not the same. For researchers, the primary driver to reducing animal numbers is new technology, as when the rabbit-based pregnancy test was replaced by a new test. Anti-vivisectionists pursue more diverse strategies, including lobbying for legislative restrictions on certain forms of animal experimentation. However, there is no denying the potential for scientific innovation to replace particular uses of animals. It is not surprising, then, that animal protection organizations have embraced the search for alternative methods.

Sir Peter Medawar, a British scientist who went on to win a Nobel Prize, apparently was the first person to predict (in 1969) the full replacement of animal use in laboratories.[1] In fact, Medawar correctly predicted the leveling off and subsequent decline in animal use in the last quarter of the 20th century. Medawar was the guiding force behind the pioneering work of William Russell and Rex Burch on the "3Rs" framework of Replacing, Reducing, and Refining animal use in research.[2]

In the 1990s and 2000s, other scientists have forecast full replacement. Some are unexpected, better known as defenders of animal experimentation, such as Colin Blakemore in the United Kingdom and John D. Young in the United States.

> "Eventually we're going to get to a point where we don't need to use any animals in research..." **David Anderson**

A recent example, from David Anderson of the Washington National Primate Research Center, is typical: "Eventually we're going to get to a point where we don't need to use any animals in research, and that's going to be a great day…."[3]

These are bold predictions. A recent estimate for the total number of animals used worldwide annually in experiments was 58 million.[4] Yet the goal of full replacement no longer seems like such a distant dream, considering the current state and future promise of science and technology, which now includes high-speed, robot-assisted testing. A 2007 report by the U.S. National Academy of Sciences, "Toxicity Testing in the 21st Century," proposed a strategy that is likely to replace all routine animal testing in toxicology with innovative methods within one to two decades.[5] Replacing animals in the broader field of biomedical research will be more challenging, given its diverse nature and larger scale of animal use. Yet even here one can see the beginnings of major advances leading in the direction of full replacement. For example, the current National Institutes of Health director is seeking to translate the power of modern biomedical approaches into advances against human disease. He wrote recently of ways by which it may be justifiable in drug screening "… to skip the animal model assessment of efficacy altogether."[6]

The strategy of pursuing full replacement through scientific innovation has obvious appeal from the perspective of both animal welfare and scientific advancement. It takes into consideration important elements of the anti-vivisectionist's critique, such as the limitations of "animal models" of the human condition and the importance of implementing non-animal methods. Increasingly sophisticated tools

PHOTO BY ISTOCKPHOTO

and approaches have made news in recent years, including high throughput screening, high content screening (e.g., 'omics), systems biology, organ on a chip, imaging, and virtual organs or virtual whole organisms. Animal protectionists may be surprised to discover that another group, lab workers, may also be conflicted about animal use. They are asked to personally cause harm to animals—a practice not normally sanctioned socially—for the sake of a perceived larger societal good. An article in a science magazine referred to the "deep emotional trauma" of working in an animal lab.[7]

Efforts to replace animals in specific procedures bring us incrementally closer to full replacement even though they are not necessarily undertaken in pursuit of the larger goal of full replacement. Many private organizations and some national governments provide direct funding for research and development of replacement methods (though this funding is small compared to total funding for biomedical research). Some governments have also enacted laws, regulations, and guidelines supportive of the 3Rs. The European Union goes so far as to characterize its newly revised legislation on the protection of animals used in scientific purposes (Directive 2010/63/EU) as "an important step towards achieving the final goal of full replacement of procedures on live animals for scientific…purposes…."[8]

A recent conference on "Models of dementia: the good, the bad, and the future"[9] took stock of the 'animal models' used in dementia research to assess their strengths and limitations, with an eye toward identifying fresh approaches and reducing animal use. The event was hosted not by external critics of the status quo in this field but by the Biochemical Society, with support from Alzheimer's-related charities. Such critical appraisals and forward thinking should become more frequent.

A recent workshop organized by the Transatlantic Think Tank for Toxicology explored opportunities to replace animal use in repeat dose toxicity testing in response to European Union legislation calling for a phase out of animal testing of cosmetic products.[10] The workshop participants reached a consensus on ways to apply new approaches to replace animal use in testing for carcinogenicity, reproductive toxicity, and other forms of systemic testing. Again, such forward thinking should become more frequent.

Much of the replacement effort marshaled to date has been aimed at toxicity testing. However, many more animals are used in biomedical research, and these animals are used in a staggering array of fields and subfields, which can be thought of as separate targets for replacement. Consequently, biomedical research presents a much bigger challenge for full replacement. This and other challenges to replacing animals in labs, either incrementally or fully,[11] explain why the current pace of progress seems frustratingly slow to critics.

It is time for a broad alliance to explicitly adopt full replacement as its ultimate goal, and then to plan and act accordingly. We should no longer be content to simply chip away at individual animal procedures with a 3Rs approach or to wait for game-changing opportunities like the National Academy of Sciences "Toxicity Testing in the 21st Century" report to fall into our laps. We should complement our current activities by pursuing more far-reaching efforts that will ultimately allow us to say "mission accomplished."

Full replacement is likely to take decades to achieve, but that's all the more reason to start thinking strategically now about how best to accomplish this goal. And we should go about these efforts constructively and with good will, driven by a twin desire to advance science as well as animal welfare. We need to think big, gather information, make plans, set milestones, and marshal the resources to make full replacement a reality. Working together, this may be possible to accomplish by 2050. **AV**

At the time of this presentation, Martin Stephens, Ph.D., was on the staff of The Humane Society of the United States, and is now with the Johns Hopkins Center for Alternatives to Animal Testing. *A longer version of this article will appear in the proceedings of the 8th World Congress, to be published in the journal* Altex. *He wishes to thank Andrew Rowan and Sue Leary for helpful conversations about the subject matter.*

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AAVS Action

MAKING A DIFFERENCE FOR ANIMALS

AAVS and ARDF Comment on Use of Chimps in Research

In response to the persistent urging of animal advocates, primatologists, and Congress to end the use of chimpanzees in experiments, the National Institutes of Health (NIH) commissioned the Institute of Medicine (IOM) to investigate this issue and evaluate the 'need' for using these animals in research. At the end of 2011, the IOM released its report, which concluded that chimpanzees are entitled to special ethical regard and outlined stringent criteria that would limit the use of chimpanzees in research. NIH quickly announced that it would adopt the IOM's recommendations, including the creation of a working group to evaluate currently funded projects using chimpanzees against the new, strict criteria.

In April, AAVS and ARDF submitted comments to provide input on important issues for the working group to consider. This was an opportunity for us to reinforce our position that chimpanzees are not needed in research and that there are serious ethical concerns surrounding this issue.

Specifically, our comments were that, although we support NIH's immediate implementation of the various IOM recommendations, the agency should prioritize permanently retiring chimpanzees from research into qualified sanctuaries. The animals should be the primary concern, and their care entrusted to those whose missions put the animals' welfare first. That would mean qualified, accredited sanctuaries, which adhere to model standards that achieve what the IOM refers to as "ethologically appropriate physical and social environments." NIH should provide full government funding to support the chimpanzees' retirement, which will provide long term cost savings for the agency compared to costs of lab housing.

Furthermore, the moratorium on new chimpanzee experimentation proposals should be made permanent. The IOM committee cautioned that it could not predict the future and had to consider the possibility that there could be a human health emergency in the future that could only be addressed by the use of chimpanzees in research studies. Some are therefore advocating that NIH keep a breeding group in 'reserve' for research. AAVS and ARDF object to that approach, emphasizing that diverting resources away from retirement to accommodate this hypothetical situation is misguided. Presumably, if and when such a disaster should strike, alternatives to using chimpanzees could be found.

Finally, NIH needs to vigorously support development of, and promote the use of, alternative methods as a core part of its program activity. Recent NIH leadership has recognized, and the IOM committee's work has highlighted, the benefits of innovation applied to methods development. Many scientists are poised to move forward with alternative methods development if investment became available from important funding sources like NIH. Alternatives need to be a priority for both improved outcomes and for ethical reasons. Only then will the chimpanzees and other animals be safe from research.

Leaping Bunny & Labeling on the News

For the past few months, a syndicated TV news feature discussing cruelty-free labeling and highlighting the Leaping Bunny Program has been running in various media outlets across the country. Although Americans overwhelmingly oppose cosmetic testing on animals and check for labels saying products are cruelty-free, those labels may not be reliable. Leaping Bunny's Administrator Vicki Katrinak is featured in the news piece and discusses this complicated issue.

The Food and Drug Administration, which regulates cosmetics and personal care products, has no legal definition of cruelty-free. "Therefore, companies have free will to say whatever they want, make their own 'no animal testing' claims, and have no data to back it up, " said Vicki Katrink. This creates a lot of confusion for consumers; does cruelty-free refer to the finished product or to both the finished product and its ingredients?

Katrinak further states that even if a product has a symbol on its packaging claiming it is cruelty-free, "…it could still be tested on animals, the component ingredients could definitely be tested on animals."

However, there is one way to know the products you are purchasing are cruelty-free. Look for the Leaping Bunny Logo! It's the cruelty-free logo you can trust, and it is also the only cruelty-free label that actually requires companies to not only meet high standards, but also to be open to independent audits.

Visit www.leapingbunny.org, to learn more about the Leaping Bunny Program.

PHOTO BY BIGSTOCK (THIS PAGE) AND AAVS (OPPOSITE)

ANIMALEARN ENLIGHTENS STUDENTS, SHOWCASES INNOVATIVE ALTERNATIVES


A student "dissects" a frog using the iPad Frog App.

Recently, Animalearn was invited to participate in STEAM (Science, Technology, Engineering, Art, and Math) Day at Arcola Intermediate in Eagleville, Pennsylvania. The invitation was extended after an Arcola teacher discovered Animalearn at a regional science teacher conference. During this daylong event, Animalearn's Nicole Green and Laura Ducceschi educated both students and teachers about humane science by giving them the opportunity to try out a selection of dissection alternatives.

Students had fun honing their science skills using the new iPad Frog and Rat Dissection Apps and also explored software programs like Digital Frog and Biolab Cat. They were also fascinated with the assortment of realistic animal models that Animalearn brought for them to touch and feel. The Arcola library was filled with energy and excitement!

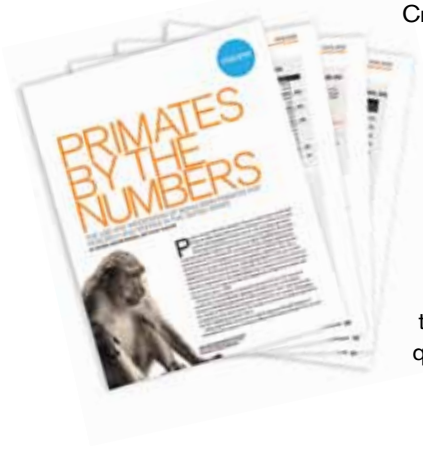
"We were happy to be a part of STEAM Day at Arcola. It was very rewarding to see how responsive the students were to the alternatives that we provided. It was obvious that they saw the true value in these humane educational resources," said Nicole Green.

Animalearn operates the largest lending library of humane science products in the United States called The Science Bank, with over 500 CD-ROMs, realistic models, and manikins, all available for free, and for all education levels, including K-12, university, and veterinary and medical training. Learn more about humane science education at www.animalearn.org.

AAVS Report Cited in Primate Debate

The March 22 issue of the journal *Nature* ran a news article and editorial focusing on issues surrounding the importation of nonhuman primates into North America and Europe for use in biomedical research. The *Nature* pieces focused on the commercial airlines that transport nonhuman primates, and their reaction to the protests of animal advocates who are demanding that they end this practice.

The alarmist editorial claimed that limits on the importation of nonhuman primates for experimentation could lead to "lost access to research animals." In her letter to the editor, AAVS's Crystal Miller-Spiegel countered this misleading assertion.



Miller-Spiegel cited her AAVS report entitled "Primates by the Numbers: the use and importation of nonhuman primates for research and testing in the United States," which reveals that "imports of monkeys born to wild-caught parents have quadrupled in 1998-2008. Conservationists are concerned about the global trade in crab-eating macaques…the import of which has doubled in recent years."

She added, "monkeys destined for U.S. labs typically endure long, grueling air and land transportation; entire groups have been killed after quarantine on testing positive for tuberculosis; many die from transport injuries or stress in quarantine; and survivors show negative physiological and behavioral effects for several months after the journey."

The *Nature* pieces, timed to coincide with a conference of animal transport companies, indicate that the actions of animal advocates are making a difference. Paul Root Wolpe, Director of the Center for Ethics at Emory University in Atlanta, Georgia, was quoted in the news article as saying, "The public tide is turning against the use of nonhuman primates in general…." He said scientists need to persuade the public of their case, or "…more companies–not only in transportation–will choose the side of animal rights advocates."

Miller-Spiegel, whose letter was published in the April 22 issue of *Nature*, concurred, saying, "Inaction will lead to more public protest, with more airlines backing away from a dirty job that they are ill-equipped to do properly."

Giving
SUPPORT THE AAVS MISSION

INVEST IN ALTERNATIVES

THANKS TO YOU, AAVS has been a leader in funding alternatives research since 1981, when members supported work on one of the first replacements for the Draize rabbit eye test. To build on such early achievements, we established the Alternatives Research & Development Foundation (ARDF) in 1994 to carry this work forward.

ARDF is currently conducting its 18th annual Alternatives Research Grant Program. As of April 30th, we received numerous proposals for alternatives research projects that could potentially save thousands or even millions of animals. With research funding from traditional sources drying up due to the economy, scientists are turning to new ideas. Wouldn't it be wonderful if we could redirect their energies toward working with alternatives instead of animals? This year, with your help, ARDF is looking to fund more projects than ever before, and work more closely with scientists to determine what will ensure rapid adoption of new, non-animal methods.

Please consider making a special gift today to support the development and promotion of alternatives. You may designate your gift using the enclosed envelope, or donate securely online at www.aavs.org/Alternatives. Thank you for joining this movement for humane science that helps animals instead of hurting them.

Review AAVS On GuideStar

Tell the world how you feel about us! AAVS is very proud to earn the GuideStar Exchange Seal, which demonstrates a commitment to transparency in business practices and financial reporting. In conjunction with GreatNonprofits, GuideStar encourages visitors to review charities with which they are associated for the benefit of prospective supporters. We would greatly appreciate you taking a few minutes to write positive comments about your experience as an AAVS member. Go to www.GuideStar.org and search for AAVS, then click the 'Write A Review' link. Also consider posting your review to Facebook, or send a tweet or e-mail to friends and followers.

For information on planned giving, leadership gifts, recurring gifts, or other support, contact Chris Derer, Director of Development & Member Services, at cderer@aavs.org or 800-SAY-AAVS. When including AAVS in your estate plans or sending a donation, please use our legal title and office address: American Anti-Vivisection Society, 801 Old York Road, Suite 204, Jenkintown, PA 19046-1611. EIN: 23-0341990. AAVS is a not-for-profit 501(c)(3) organization to which contributions are 100% tax deductible under federal and state law.

TRIBUTES
HONORING LOVED ONES

In memory of Bridget, our brown-eyed beauty who brought us so much joy, love, and friendship. We dearly miss you, Velvet Ears. Our world is not the same without you.
Monika Nill and Greg Hochmuht
Marblemount, WA

In loving memory of my darling Miss Kitty. When life became a burden here, your love meant everything. I'm sorry you became ill, and I had to let you go. And now, without your love, what do I do with the burden of your loss? I'll remember you fondly, 'til I draw my last breath.
Raymond Nash
Westminster, MD

In Memory of Bishop. An extraordinary dog, he loved much and was much loved. Condolences to Audrey, Jodi, and Patrick. We'll always remember "the boy."
Sue Leary and Rob Cardillo
Ambler, PA

In loving memory of Bidsey Rabbit, forever loved, forever missed, forever remembered.
Emily Stuparyk
Winnipeg MB, Canada

In memory of Hildy Gutzmann Stephans, a kind-hearted woman.
Marjorie Landis
Centreville, VA

In honor of Mary Lou Hendrick. You are special in every way, especially for championing the bunnies.
Catherine Haedrich
Eliot, ME

In honor of my sisters, Victoria and Jody. Luckily, I have two wonderful sisters who feel as strongly about animal suffering as I do. We need to speak up for the speechless!
Michelle Weirich
Glen Mills, PA

PHOTO BY VEER

In appreciation of Heather Wireman and her compassionate choices.
Carlos Azora
Seattle, WA

In Honor of Maximus, born a dog but died a gentleman.
Sal Dolcimascolo
Lighthouse Point, FL

In memory of Colette Ann Currie.
Susan Nicola
Shorewood, WI

In memory of Ruth Skudrna, loving protector of all creatures.
Clarice Prange
Forest Park, IL

In honor of Nancy and Joe Harrison, two animal lovers whose big hearts were made even bigger when they opened their lives and home to give unwanted four-legged children better and wonderful lives.
Christy Lindsay
Arlington, TX

In memory of Kody. I treasure the two years we had together. You were a GREAT Pyrenees.
Gwenn Gröndal
Carlsbad, CA

To the memory of Chipper, Cyman, and Abby, three companions who made our lives so much better, and manifested daily the gifts of loyalty and enjoyment of the moment.
Patricia Gamache
Mashpee, MA

In honor of Margaret Marsh, who loves all God's creatures, especially kitties.
Maryellen Alviti
Flourtown, PA

Twenty years ago, someone abandoned a gorgeous mama kitty and her kittens. I found homes for the kittens, but kept the mama whom I named Girl. After many years of my dearly loving her, she passed away. I miss you so much my precious hunny bunny. Mommy will see you in Heaven, baby.
Jacqueline Schmidt
Coloma, MI

In memory of Duffy. Your passing has left a hole in my heart.
A.J. Chepdelaine, Jr.
Silver Spring. MD

In memory of Snow Flake.
Catherine Wray
Trainer, PA

In memory of Dudley. Always in our thoughts.
George Vagelakos
East Stroudsburg, PA

In memory of our companions. We were blessed to have the gift of many dogs and cats. Our last dog has gone and our house feels empty now. We will always love and remember Tippy, Skippy, Hushpuppy, Cecil, Boris, Emma, Natasha, Sebastian, and Smokey.
Melody and Irv Boime
Saint Louis, MO

In memory of Maxx, Greta, Blackie, Gizmo, JD, and Tootsie. To my beloved furpaws who crossed the rainbow bridge from 2010 to 2011. Love you all so much.
Virginia Hannah
Cleveland, OH

In memory of Sasha the dog. We miss you, girl.
Linda Bergstrom
Westminster, CO

In memory of Pepper. We adopted our little dog Pepper when she was 10 years old. She gave us much love and loyalty for 11½ years.
Linda Price
Napa, CA

In memory of Rita B. Falchek.
Stephen J. Falchek
Wynnewood, PA

In memory of Max and Bernard, my good friends who will live forever in my heart and memories.
Frank Homburger
Alexandria, VA

In memory of Carmen. She was loyal, brave, and always did what she thought would please me. I miss her so much.
Emily Woodall
New Caney, TX

In memory of Khan.
Adra Hooks
Houston, TX

In honor of Bart, my collie dog. Bart was my constant companion and loving support during my years growing up in a totally dysfunctional family. His loyalty and love kept me sane.
E. Boyd Steele
Grand Junction, CO

In memory of Joy Joy, a loving playful companion lost too young to cancer. And in honor of the foster rescues and senior cats I house at Helen Marie Lee Sanctuary now.
Helen Lee
Belleair Bluffs, FL

In honor of Ubee, a macaque I never met, but whose life story touched me dearly.
Anonymous

In memory of Claire Jacobi.
June Gillin
North Palm Beach, FL

In memory of my late husband, Oscar E. Collins, Jr., and my cats Spanky and Jesse James.
Ann B. Collins
Bowie, MD

In memory of our beloved Dottie, the best Dalmation. She is now a light in heaven. We miss you so much.
Steve and Nina Waite
Los Altos, CA

In memory of Carol D. Cooper, my beloved friend and fellow animal lover. Your kind and loving ways towards all our fellow creatures will never be forgotten.
Diana Graves
Ocala, FL

In memory of Spot, a precious soul who left his paw prints on our hearts.
Jeanine Figur
Longmont, CO

In memory of Jennie Haydel.
Leslie Haydel
Berkeley, CA

In memory of Dandy, the best show pony ever!
David Wagner
New York, NY

You can honor or memorialize a companion animal or animal lover by making a donation in his or her name. Gifts of any amount are greatly appreciated. A tribute accompanied by a gift of $50.00 or more will be published in the *AV Magazine*. At your request, we will also notify the family of the individual you have remembered. All donations are used to continue AAVS's mission of ending the use of animals in biomedical research, product testing, and education.

Members' Corner


Chris with AAVS President Sue Leary.

WHEN I FIRST STARTED AT AAVS, it didn't take me long to notice that our organization's President, Sue Leary, is very passionate about two things: (1) AAVS members ("my kind of people!"), and (2) alternatives to animal testing. When not running the show here at AAVS, Sue manages the Alternatives Research & Development Foundation, which provides funding for the development and promotion of non-animal testing models for use in the scientific and biomedical industries.

Sue regularly attends conferences and meetings, nationally and internationally, regarding the use of animals in laboratories, and progress is being made towards their replacement with technologically advanced alternatives that yield superior data. She has told me that she learns as much from casual conversations with colleagues as she does from the formal presentations at the functions she attends. It's very exciting to be on the inside and learn about what's in the pipeline that has the potential to spare thousands or more animals from being test subjects.

Our leader can be quite the workaholic, burning the midnight oil on a far too frequent basis. But while recharging her batteries, Sue enjoys sharing stories with the staff. We are regularly regaled with amusing anecdotes from Sue's life experiences, but there's always a lesson in there somewhere. And Sue has fascinating reflections on the burgeoning, modern animal protection movement that she has been a part of for 35 years.

However, Sue really lights up when discussing the momentum being made in the development and implementation of alternatives. I distinctly remember her speaking very positively about this topic during my second AAVS job interview over five years ago—Sue's enthusiasm made an indelible impression. As optimistic as I am about seeing an end to animal testing during my lifetime, I'm frustrated on a daily, if not hourly basis by the continued abuses of animals. However, hearing about the advancements in alternatives reinvigorates me.

As a personal aside, before I started working at AAVS, the term 'alternative' held a decidedly different meaning for me. It reminds me of my college days in the late 1980s, when the term was a buzzword to describe art, cinema, literature, and music that was not popular within the mainstream. So while digging the 'alternative' scene and not being part of the pack was hip back in the day, making scientific alternatives part of the mainstream and widely accepted in research circles now is the new cool. Working together, we will achieve this goal.

Chris Derer
Director of Development & Member Services

CHRIS'S FAVORITE ALTERNATIVES

EPISKIN

Developed by inventive researchers, this artificial skin is grown from real dermis cells and can be manipulated based on testing requirements.

ALMOND MILK

No cholesterol, low in calories and fat, great for cooking, available in different flavors—I'm nuts about it!

SOLAR POWER

Fossil fuels are detrimental to the environment and finite in their resources. But that big ball of gas we call the sun is going to shine for a long time.

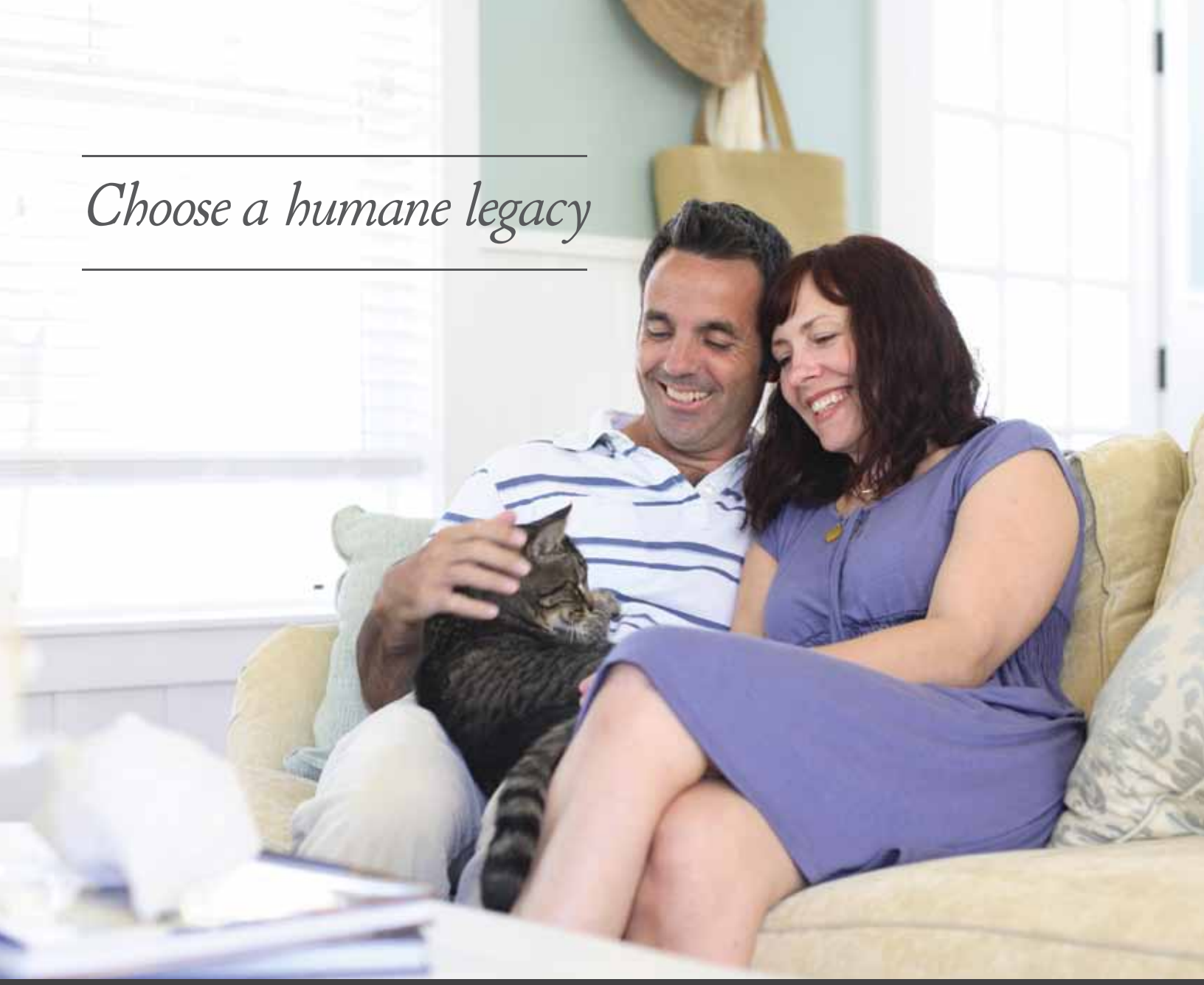
BICYCLE

Back in high school and college, I preferred to ride my bike over driving. It's not always the most practical form of transportation, but it's the healthiest for you and the Earth.

MORRISSEY

The former lead singer of the indie rock group The Smiths, Morrissey has a legion of fervent fans worldwide. I love his music, and I'm also glad that Moz, a longtime vegan, cares about animals.

PHOTO BY JIM ROESE



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When you provide for AAVS in your estate plans, you receive the satisfaction of knowing that our mission will be sustained into the future. You'll also be honored as a member of the Caroline Earle White Society, named for AAVS's pioneering founder. Make her legacy yours.

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For a free brochure with information on estate planning, contact Chris Derer at cderer@aavs.org or 800-729-2287.

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