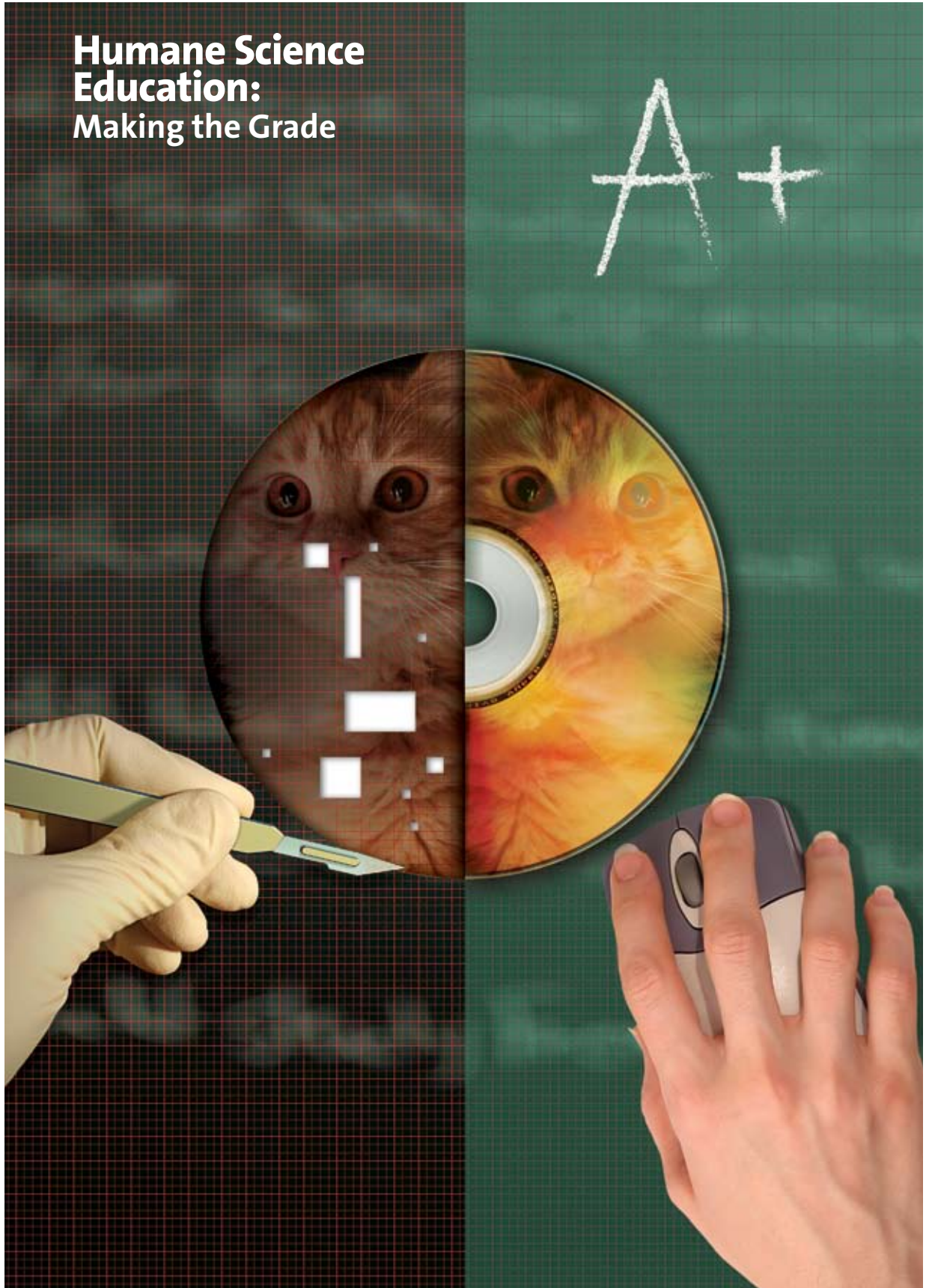


A PUBLICATION OF
THE AMERICAN
ANTI-VIVISECTION
SOCIETY

Humane Science Education: Making the Grade

A +



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GRAPHIC DESIGN/ILLUSTRATION:

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The *AV Magazine* (USPS 002-660) is published quarterly under the auspices of the American Anti-Vivisection Society, Sue Leary, President. Annual membership dues: \$25.00. Third-class postage paid at Lancaster, Pa.

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The American Anti-Vivisection Society

801 Old York Rd., #204

Jenkintown, PA 19046-1685

Organized and established in 1883.

The individual views expressed in the *AV Magazine* do not necessarily reflect the policy of the American Anti-Vivisection Society.

Printed on recycled paper.



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Who Are We?

Founded in 1883, the American Anti-Vivisection Society (AAVS) is the oldest non-profit animal advocacy and educational organization in the United States dedicated to ending experimentation on animals in research, testing, and education. AAVS also opposes and works to end other forms of cruelty to animals. We work with students, grassroots groups, individuals, teachers, the media, other national organizations, government officials, members of the scientific community, and advocates in other countries to legally and effectively end the use of animals in science through education, advocacy, and the development of alternative methods to animal use.

AAVS has two main divisions, each involved in specific activities. Animalearn is the education program of AAVS, which focuses on ending vivisection and dissection in the classroom. From elementary through college levels, Animalearn helps countless individuals make their classrooms more humane. Animalearn operates the most aggressive dissection alternatives lending library in the country, The Science Bank; it provides alternatives to using animals, from basic dissection, through psychology experiments. Animalearn also participates in national teacher conferences and hosts workshops to help teachers learn ways of educating without harming other living creatures. Animalearn's National Humane Educators Network links interested parties with speakers across the country, bringing the message of humane education to thousands.

The Outreach division of AAVS educates the general public about animal issues through one of the top-rated literature collections in the animal advocacy movement and the informative AAVS website. Our quarterly publication, *AV Magazine*, and bi-monthly newsletter, *Activate For Animals*, provide comprehensive up-to-date information on the scientific and ethical dimensions of animal experiments and alternatives. Both publications encourage AAVS members and supporters to become actively involved in our campaigns. Outreach staff also travel to speaking engagements and conferences and place advertisements in national publications to spread the AAVS message across the country.

The Alternatives Research & Development Foundation (ARDF), an affiliate of AAVS, awards grants to scientists and educators working to develop non-animal methods of investigation. ARDF's unique program provides the necessary resources for the development of alternatives to the use of animals, and it advocates the use of alternatives through the internet and by participating in conferences and seminars. Through these endeavors, ARDF works to promote scientific solutions for today with humane visions for the future.

We ask you to become a member of AAVS and help us to end the use of animals in science through education, advocacy, and the development of alternative methods. It is only through the support of members and other individuals that we are able to continue our vital and successful programs.



American Anti-Vivisection Society

FIRST WORD



A VICTORY FOR THE NEXT GENERATION

Talk about perfect timing. In January 2006, the New Jersey Student Dissection Choice Bill was signed into law, just in time for the dreaded spring season of dissection in schools and just in time to have some wonderful news to start off this issue of the *AV Magazine*.

In the AAVS office, we applauded the New Jersey bill's success as another decisive endorsement of students' rights to stand up for what they believe, following the lead by other states such as Pennsylvania, California, and Illinois. Staff from AAVS's education division, Animalearn, had provided expert testimony to the legislature in our neighboring state of New Jersey. We also provided local activists with the resources they needed to make their case, including dissection alternatives from Animalearn's lending library, The Science Bank. As The Science Bank celebrates its 10th anniversary, we are happy to report to our members and friends that our resources are proven to make a difference, not just in persuading legislators, but in helping students and educators every day.

In these pages, AAVS is offering you a remarkable range of articles on the benefits of humane science education that we hope will not only inform, but inspire. We were fortunate to enlist the writing skills of some wonderfully accomplished medical professionals and educators who have been in the forefront of improving education by steering away from the traditional uses of animals for vivisection and dissection in the classroom. They agreed to share with you their perspectives on how even advanced science and medical education can be both a better learning experience for students and better for animals when alternative methods are employed.

I only wish these innovators had been in charge when I was a university biology student in the 1970s. Instead, I had to turn away from a career in the biological sciences because there was no choice except to harm animals, and that, I would not do. I have always wondered how many students like me were lost to science because they did not succumb to pressure from instructors and peers to desensitize themselves and repress their aversion to causing pain. Today I see colorful public relations programs aimed at encouraging girls to pursue careers in science and I think, "How disingenuous!" Science professions don't deserve the smart and sincere young people they seek unless they are willing to make science education a study worthy of them, and make biology in particular a life-affirming study rather than something tainted with unnecessary cruelty and death.

At AAVS, it has always been one of our values to work with young people who care about animals. Our "Miss B'Kind Club" flourished in the early years of the 1900s and it may sound quaint, but in fact, it was ahead of its time in encouraging children to examine and embrace positive values about animals.

If it is a cliché to say that children are the future, it is also undeniably true. They are entitled to the best we can give them, and the animals are entitled to the best we can do for them as well. AAVS will continue to make high quality humane science education a priority. As the next generation of children enjoys the opportunity to develop into caring, thoughtful citizens and enlightened scientists, it seems likely that we will all benefit, not only the animals.

Sue A. Leary

Humane Education: One Perspective from the Field



By Nicole Green,
AAVS Assistant
Director of Education

I attribute my admiration and respect for animals to the first humane educators in my life—my grandmother and my mother. My now deceased grandmother, a first grade teacher, was always kind to animals and opened my eyes to nature and all of its beauty. Every morning she fed the squirrels on her small porch. What amazed me was that the squirrels somehow knew that she was a human they could trust, because they would frequently choose to sit and munch quietly in her presence. My mother, who loves and appreciates wildlife, also regularly welcomed stray cats into our home and cared for them, which is something she continues to do to this day.

Witnessing these simple acts of kindness and compas-

sion from my family members solidified who I am today, a person who strives to end injustice towards all creatures through education as a humane educator. There is nothing more fulfilling for me than enlightening students, from elementary through college, about the many different plights of animals. In most cases, students are completely unaware that animals are still used in unnecessary experiments or cut up for dissection purposes in schools. Students need to be taught that they can be compassionate consumers, can purchase products that are not tested on animals, and can use alternatives to dissection if facing this ethical dilemma in their biology classes.

As a mother of a preschooler, I have already faced situations which involve the

school bringing in animals who are exploited in zoos and aquaria. I make sure to tell my son's teacher to take him out of these activities, and she complies with no hesitation. Before enrolling our son in preschool, my husband and I had to explain that we were vegans (strict vegetarians who do not eat, meat, dairy, eggs) and do not support animal exploitation of any kind, meaning our son would not attend zoo or aquaria visits and/or participate in activities which involve using products that are animal derived. I am happy to report that my son's teacher has been wonderful about complying with our needs and wishes.

One example of a project that the kids were to do in class was to paint eggs. I suggested to the teacher that I would be happy to provide

my son with a styrofoam or wooden egg instead of a real egg. The teacher was fine with this idea. She even suggested that if I wanted to, I could supply the entire class with styrofoam eggs. I was elated and seized this opportunity to make this activity cruelty-free for all of my son's classmates instead of utilizing eggs derived from egg laying hens who are subjected to deplorable conditions in factory farms!

The use of animals is entrenched in our society, so small victories like this one are gratifying. However, as the days, weeks, and years pass by, the more we realize that situations will arise which will force us to stand our ground and present a differing opinion or more compassionate point of view. Not all teachers will

be so accommodating to us. I know this because I speak to parents from all over the country who face teachers who are adamantly opposed to the idea of students using alternatives to dissection.

Since its inception 15 years ago, Animalearn has made significant progress for animals used in education, especially in the realm of dissection. Most recently, as technology has rapidly advanced, so has the development of humane science education products. In 1996, Animalearn launched its free alternative to dissection loan program called The Science Bank, which today includes over 250 innovative CD-ROMs,

for the animals who are being used in the classroom, since these materials are so readily available through free loan programs like The Science Bank. A highly recommended and beneficial resource for parents and students who are opposed to dissection to give to teachers is the Animalearn Resource Kit. This comprehensive Kit includes a copy of The Science Bank catalog, in addition to a plethora of dissection related materials such as a cost comparison sheet, which breaks down the cost effectiveness of alternatives compared to dissection specimens over a three-year time period. Also inside the Kit is a list of comparative



realistic animal models, charts, posters, videos, and more to assist students and educators who prefer to learn about the life sciences without killing animals in the process. Over 500 alternatives exist not only for anatomy but also for anesthesia and critical care, biochemistry and cell biology, clinical skills and surgery, embryology and developmental biology, histology, pathology, pharmacology, physiology, and psychology.

Due to the wealth of alternate methods available to help teach and learn science, Animalearn representatives advise parents and students that they have the power to make a significant difference

studies of student performance, which shows through a list of scientific studies that students trained using humane teaching methods perform at least as well as or better than those who utilize animals.

Animalearn representatives travel worldwide to showcase the alternatives available in The Science Bank and to give presentations to educators, who are interested in knowing more about the digital classroom or the viable and cutting-edge technological methods that are available to them and their students. It is rewarding when we meet a high school biology teacher like Sharon Maselli who was once skeptical of dissection alternatives and now embraces this new teaching methodology wholeheartedly. (Please see page 16.)

Students tend to have a more difficult time influencing their teachers and professors to allow them to use dissection alternatives. Animalearn receives numerous calls from students who want to know how to approach a teacher with their concerns on this sensitive topic. Fortunately, students from K-12 who live

in California, Florida, Illinois, New York, Pennsylvania, Rhode Island, Virginia, Oregon and, most recently, New Jersey have the legal right to choose a humane alternative to dissection. Louisiana, Maine, and Maryland offer informal policies, while similar legislation is pending in Massachusetts and Michigan.

Those students who live in states that do not have a legal student choice policy in place still have the right to object to dissection. In many cases, students living in states without protective policies have been successful in encouraging their teachers and/or school districts to allow them to use dissection alternatives.

Student choice policies are important in assisting those students who do not want to dissect, but in many cases students are unaware that these policies are even in place. Therefore, humane educators need to make schools and school districts aware that these policies exist and request that their students are also made aware of these options.

College and university students need to follow a different path to obtain student choice, since in most cases they do not have an overriding school code that is dictated by a state or overarching governing body. As a result, individual institutions prescribe their own guidelines on issues such as dissection and vivisection in the classroom. Fortunately, many students and student animal protection groups have successfully been able to secure student choice policies at their colleges/universities, including Harvard University, Sarah Lawrence College, the University of Illinois, and Vassar University, to name a few.

Since my start here at AAVS and Animalearn, I have had the privilege to meet a number of students who work hard to make a difference for animals used in education. Some of their inspirational writings are featured in this issue, and I urge readers to follow their lead and educate young and old about how they can make changes for the animals with whom we share our world. **AV**

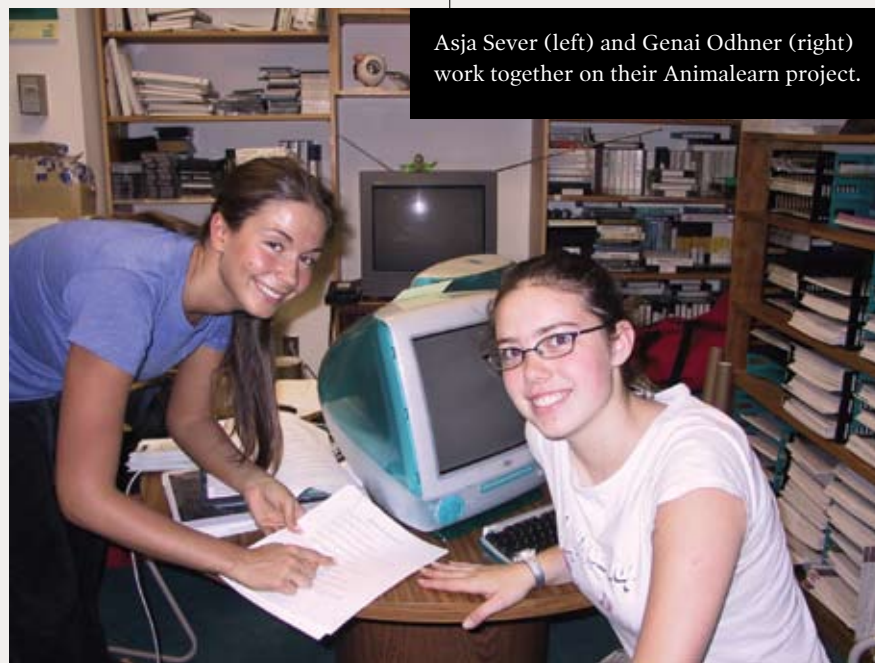
For more information about Animalearn and its humane education materials, please visit www.Animalearn.org.

The Animalearn Intern Program & Student Perspectives

For the past several years, Animalearn has had the opportunity to educate many high school and college students about the use of animals in research, testing, and education through its internship program, which is structured around each student's schedule. When a student decides to intern at Animalearn, that student is given projects such as reading animal rights literature, watching videos, giving presentations to fellow classmates, researching for possible future Animalearn projects, in addition to writing articles for our publications. Below is a collection of articles from three recent interns who have done a tremendous amount of work for Animalearn and for animals.

Hofstra University student Laura Lungarelli who interned for Animalearn in 2004 writes the first article. Laura has been working tirelessly to try and implement a student choice policy at Hofstra for the past few years, with Animalearn's help. Fortunately, she has been able to bring a lot of attention to the matter but continues to struggle to change the minds of Hofstra administrators who remain unconvinced that dissection alternatives are as valid as dissecting specimens.

Following Laura's piece is a collaborative article written by Genai Odhner and Asja Sever, high school seniors from Lower Moreland High School in Huntingdon Valley, Pennsylvania who interned at Animalearn in May and June of 2005. Both Genai and Asja were extremely dedicated to making a difference for animals, so we asked them, as one of their projects for Animalearn, to compose a letter for other student advocates that would inspire them to get active for animals. Asja Sever's follow-up article explains how she has continued to enlighten others about animal cruelty as a freshman college student.



Asja Sever (left) and Genai Odhner (right) work together on their Animalearn project.

LAURA LUNGARELLI, HOFSTRA UNIVERSITY

I disagree with using animals as part of education for many reasons. The primary reason is because I feel it is unethical. It is not ethical to use another being for any reason. I had entered my college education as a biology major, but when I learned that biology majors at my school are mandated to dissect animals, I quickly changed majors and began to work on a campaign to create a choice policy to allow students the freedom of being biology majors and not hurting animals.

I do think it is a large problem for universities to not provide alternatives to dissection to those who feel it is unethical. It represents a university's disregard for a student to maintain his or her own personal values. At Hofstra, when the University had failed to see our complaints as an ethical objection, we had the University's Christian Pastor write a letter for us, supporting our contention that the decision to not dissect is a sound and ethical objection.

Along with proving to our school that our unwillingness to dissect animals is a sound ethical decision which should be respected, we researched and proved a number of different things to faculty and administration. One point we were clear to make is that allowing alternatives does not disrupt a teacher's academic freedom; the instructor is still allowed to use whichever alternatives and teach whichever material s/he deems necessary to the course. There are a wide variety of alternatives, and it is likely that there is one to suit every academic need. We have also shown our faculty and administration proof that students learn just as well using alternatives, and we even offered to stand as subjects for our biology department to do their own research. We offered to take a class using alternatives and take all the same quizzes and tests as students using dissection. The faculty refused our offer and still blindly insists that students cannot learn using alternatives.

Our faculty explicitly emphasizes that students using alternatives would not learn the "art" of dissection. This claim is actually rather silly, because most biology majors will never go to medical or veterinary school after Hofstra. Furthermore, we learned that most

medical schools do not see dissection as necessary at the undergraduate level and assume that their students have no skills for cutting flesh. This assumption is based on the fact that undergraduate schools use animals that are treated with formaldehyde and/or other chemicals that cause their flesh to look and feel different than if they were alive.

Another point that we thought would be extremely helpful was pointing out that using alternatives, which can be reused, would, in fact, save Hofstra an amazing amount of funding each year.

I currently work with the Hofstra Student Organization for Animal Rights, trying to find a suitable choice policy for Hofstra's biology curriculum. We have done a great amount of research; we have done polls and educated the students and faculty on numerous occasions in numerous ways; we have had letters from many other schools given to our administration and faculty supporting us; we have brought alternatives to our biology department for them to try; and we continue to meet with deans, professors, and, most recently, the provost logically arguing our case.

GENAI ODHNER AND ASJA SEVER, LOWER MORELAND HIGH SCHOOL

We achieved something that even we thought almost impossible. We are Asja Sever and Genai Odhner, two seniors at Lower Moreland High School. For our senior project, we interned at Animalearn. Learning about dissection made us realize how hypocritical it would be to stand by while dissection still took place at our school. We quickly decided to go beyond our projects and try to make a difference by eliminating dissection in our school. We went on our school's website and found out when the school board meetings would be. Working furiously, we collaborated on an outline of what we wanted to say, covering all the different aspects of dissection alternatives. Then we obtained Humane Educator Packs from Animalearn, and Nicole Green, Animalearn's Assistant Director of Education, wrote a letter that we included.

It was Friday, May 13, and the board meeting was scheduled for Tuesday evening. In order to have a stronger face during our presentation to the board,

we thought it was a good idea to first meet with Mr. Doviak, our Principal. We scheduled a meeting with him for Monday. Going into the meeting, we were really nervous. What if he just dismissed what we had to say? Our doubts evaporated as the meeting went forth. His initial response was, "We still have dissection?" When we proposed getting rid of dissection in our anatomy class (the last one to still have it), he said, "I was a biology teacher, and I don't see why not."

He also told us that it was unnecessary to go to the board meeting, because it would be up to him and the Director of Curriculum, Dr. Hausman, who happened to walk in at that moment. She gave her enthusiastic support to our cause, having seen an undercover report on biological supply companies on CNN. We scheduled a second meeting for Wednesday with both of them, then basically frolicked all the way back to Jenkintown, where Animalearn's office is located.

Our second meeting was perhaps a little sobering. They challenged us to defend our proposal, point by point. Having done research, we were prepared to argue. In fact, going into our first meeting, we were ready for intense opposition, and now was our chance to really make our case.

The meeting ended on a positive note, leaving us a little shaken but optimistic. They told us they were going to speak to the anatomy teacher, then get back to us. We called the school at least five or six times. Finally, we got an answer, which turned out to be much less of an answer than we had anticipated. They wanted to take a survey of the students, and said that they would test out the alternatives. It was a reasonable step to take, although we were a little disappointed at the lack of immediate change. We were anxious to make a difference but realized that these things take time.

Mr. Doviak thanked us for "getting the wheels turning," and we felt proud but perhaps a little vulnerable. This issue that is so important to us was no longer in our hands. We had done our part and made a significant difference, but the ultimate decision would not be ours. If they cut out dissection, we celebrate, and our job is done. If not,

then we go to the school board and do not stop fighting until the end.

What's next? We are planning to talk to other schools in our area. Maybe, having made a difference in our own school, we can expand and change things for others as well. Making a difference is not always as hard as it may seem. All we had to do was ask.

ASJA SEVER, UNIVERSITY OF DELAWARE - FOLLOW UP

Last May as a senior project, I volunteered at Animalearn for a month. Little did I know how big of an impact that experience was going to have on the rest of my life. Learning about animal testing and other forms of cruelty made me realize many things that were hypocritical in my own life, and in the lives of other vegetarians. I became more conscious of what I was buying, whether it was food, clothing, or even shampoo.

Oftentimes I was in the grocery store with some friends, and they were looking at different brands of shampoo or toothpaste. I quickly rattled off which brands tested on animals and which ones did not, which affected their purchase. I would think back to my days at Animalearn, sending letters to companies who tested on animals, with my co-intern Genai Odhner, and smile, knowing that *this* is where the difference is made—in the supermarket or in the restaurant.

After meals was usually when the vegetarian questions started. "That's not healthy. People need meat" is the most common comment I received. "On the contrary," I would say as I cleared my throat and prepared them for a fifteen-minute speech filled with perfectly prepared facts and arguments, something I picked up from volunteering at Animalearn. Knowing how to support the various counter-arguments people would use came in handy at times like those.

Now that I'm in college, I face the same situations all over again—new friends and new trips to the supermarket and dinner. I have chances to influence more and more people with whom I come into contact. Recently, I have attended the Students of Holistic Living Meeting and proposed an idea to the President. I suggested to her that we have a concert with local bands to draw awareness to

the fact that the University of Delaware, which I attend, has animal tests and/or dissection in some of their programs. Although my major, international relations, does not pertain to biological science and I would never need to dissect or test on animals, I feel it is inhumane and must be stopped. April, the Students of Holistic Living President, told me that this would be a good idea, and that we will concentrate more on it when the spring comes around.

Ever since Genai and I took a stand to eliminate dissection in our high school, I feel like I could do anything. What seemed like such a monumental task was all in our minds. I learned people are reluctant to change if the change is not initiated. By taking the first step, the wheels start turning.

Recently, I have also spoken to April about getting better vegan/vegetarian food in the dining halls and in the small university-operated 'marts' around campus. I walked into my local Rodney-Mart the other day to find microwavable organic vegetarian food! It amazed me what I did by just asking. April said it was a long process, which was initiated a few months ago, and that demands from the vegetarian residents in my building have helped quicken the pace of the developments.

All around, Animalearn has motivated me to be active for animals beyond my internship. I am much more aware of the things going on around me, and I have certainly wanted to show others the things I've learned. There are many more things I would like to do in college as well. Our Vegan Club here is not that well organized, and I would like to maybe get in touch with someone and help make it more active and bring those people together. Being vegetarian is an important part of my life, and I'm pretty sure if the right foods were made available to me, being vegan would be a choice for me. Also, I am involved in Amnesty International and the Civil Liberties Union, which has exposed me to people with many of the same interests as I have, and helped me build a future network for when we do have a benefit concert in spring, hopefully! AV

The Science Bank Celebrates 10 Years of Providing Education for the Future



This year, Animalearn's The Science Bank marks a milestone. After 10 years of providing humane science alternatives to students and educators of all ages and capacities, The Science Bank has reached a record number of borrowers, and has a continually growing number and range of products available free to the educational community.

A free lending program of humane science education products that allows parents, students, teachers, and administrators the ability to access the latest in science teaching tools, The Science Bank has over 250 modern non-animal alternatives available. The latest in models, CD-ROMS, manikins, charts, and videos can be accessed easily through The Science Bank. These non-animal alternatives are perfect for biology, anatomy, physiology, genetics, and psychology classes and labs. For a sampling of what is available at The Science Bank, log on to www.animalearn.org, or call (800)SAY-AAVS to request a free full-color The Science Bank catalog.

CD-ROMS

The best dissections are done with a computer mouse, not a scalpel. The Science Bank's collection of CD-ROM dissection software allows teachers to move dissection out of an expensive wet lab and onto a more modern and educationally effective computer screen, complete with anatomy lessons and in many cases, assessment tools. There are many CD-ROMS available which focus on everything ranging from human anatomy to in-classroom cardiac muscle experiments and operant conditioning to genetics lab.

Models

Life-size dissection models with impeccable detail, enlarged replica models with accompanying keys, raised-relief models, and model activity sets are all available for loan through The Science Bank. Regardless of the animal who is being studied, The Science Bank probably has a suitable model. The Science Bank also has models for human anatomy labs.

Mannikins

The Science Bank has recently added a new veterinary and pre-veterinary suite, featuring Mannikins, to its loan program. Perfect for teaching anatomy and microsurgical techniques at colleges, veterinary/medical schools, or veterinary technical schools, Mannikins are realistic and full-sized animal models with realistic representations of systemic and anatomical functioning. Mannikins feature mouth to snout resuscitation, working lungs, an artificial pulse, the ability to aspirate air and fluid from the thoracic cavity to simulate trauma, and the ability for IV draw and injections. AV

Time to learn something new...

By Siri Martinsen, Veterinarian, Director of NOAH – for Animal Rights, Norway, and Representative, InterNICHE

Being the first veterinarian in Norway to complete my studies without animal experiments, I have experienced a process that I believe is the start of a new tradition within life science education: a tradition of respect for animals.

All over the world students work hard to promote alternatives to animal experiments and to be able to learn without compromising their ethics. Representatives of these students from 32 countries gathered at the 2nd InterNICHE Conference "Alternatives in the Mainstream: Innovations in Life Science Education and Training" in Norway this year, together with teachers and researchers who shared their interest in creating a learning environment where the quality of education and ethical considerations are equally important. This conference was one of several recent events which prove that the time has come for humane education worldwide.

Alternatives create connections among cultures

The student panel at the InterNICHE Conference showed the impact that the campaign for humane education has brought about in the last five years: students and professionals from Russia, Japan, Australia, Brazil, and Iran presented their experiences of successful campaigning. Biologist Thales Trèz from Brazil reported a significant increase in student awareness about the issue, and he has made several nationwide speaking tours. Veterinary student Eriko Gotoh from Japan has co-organized speaking events at 16 veterinary universities and helped create student groups for the ethical treatment of animals in just two years. Currently, she is helping to set up

a client donation program for ethically sourced animal cadavers. In Russia, change has come about even the last few months following an InterNICHE speaking tour that addressed over 500 teachers and students, resulting in agreements at two institutes to replace harmful animal use in education across a whole department and faculty.

At the time of my own graduation last summer, resulting in the Norwegian Veterinary School implementing a student choice policy and moving towards replacement of all animal experiments, colleagues in Romania were completing their veterinary course with substantial replacement of harmful animal use. Last fall, an InterNICHE/World Society for the Protection of Animals outreach tour succeeded in training nearly 500 teachers across India, again resulting in direct replacement. And the InterNICHE Humane Education Award has supported the development and implementation of freeware alternatives, bringing replacement in Romania, India, and elsewhere.

In short, the interest in humane education is growing rapidly and is not limited to only certain parts of the world. Indeed, countries where alternatives represent a relatively new issue are seen as making big steps forward in a very short time. Countries like Egypt, Syria, and Pakistan were represented at the InterNICHE Conference and had important contributions, and recently new InterNICHE connections have been made in ex-Soviet countries.

Alternatives create connections among generations

Not only students initiate progressive change. Many teachers, who as students themselves did not complete their courses without the harmful use of animals, have started reflecting on the benefits—educational, ethical, and economic—of implementing alternatives. At the InterNICHE conference, Dr. Hans Braun from Germany described how



his initial resistance towards student demands for change was transformed into a keen interest for developing alternatives when he realized the possibilities of modern technology in this field, as well as for scientific research. Dr. Amarendhra Kumar from Tufts University in Boston, MA explained how he saw students develop more mature behaviour towards animals in the veterinary course by using cadavers from the client donation program rather than purpose-killed dogs. Dr. Marc Bekoff shared his experiences as a researcher and teacher in ethology, and made a strong case for non-invasive field studies, including their advantages for gaining new knowledge. Producers of advanced virtual reality (VR) tools for education, such as the ovary palpation simulator from Glasgow University in Scotland and the Norwegian SimSurgery model for surgery training, presented exciting new possibilities that may transform the educational experience completely.

Likewise, the book *from Guinea Pig to Computer Mouse* (InterNICHE 2003), co-sponsored by Animalearn, presents practical case studies by teachers from across the world. Humane education is a platform where generations can meet to discuss and create an ethical and effective learning environment.

Different opportunities in different parts of the world

Campaigning for humane education worldwide shows that there are always possibilities for change, even though the difficulties met may not be expected. A group of students at the Veterinary University of Copenhagen, Denmark, is currently making progress towards a student's right to object to animal experiments. However, in the neighboring country Sweden, such rights have been in existence for many years. Pharmacology student Sepher Shafiezadeh, from Iran, has also recently managed to convince his teachers to use several alternatives, the same alternatives that my physiology teachers in Norway were reluctant to even review. Resistance from the establishment can sometimes be harder in western countries, which we imagine might be more open-minded to the

animal use to humane education is often dependent on the availability of resources. Bearing this in mind, InterNICHE has put substantial effort into creating new and often multi-language resources. The Humane Education Award has also targeted areas where language is an obstacle to implementing alternatives, and supported projects that make translated or locally developed alternatives available.

The concept of "reusable learning objects," as presented by Dr. David Dewhurst at the 5th World Congress on Animal Use and Alternatives last year, is another way to support the development of alternatives by sharing elements of computer programs. The distribution of secondhand computers may also support rapid implementation, supported by global databases on alternatives for effective information retrieval.

example of change comprising approach rather than technological tool is the teaching of Dr. M. A. Akbarsha in India, who also presented at the InterNICHE Conference. Dr. Akbarsha emphasized the importance of modernizing biology, creating more focus on cell biology, genetics, and conservation biology and, thereby, making dissections irrelevant.

Different interests, same goal

The campaign for humane education is an area of intersection among a range of different interests. Perhaps this is one explanation for the success this campaign has had in different countries and cultures. Humane education is about modernizing education by optimizing learning tools and keeping education on the cutting-edge of technological development. This attracts teachers interested in technology, computer

A world united for a common cause: the creation of a generation of biologists, veterinarians, and doctors worldwide who are devoted to their profession and grounded on a basis of respect for living beings, human and animals alike.

critical thinking of their students, than in countries where the virtue of free speech is not thoroughly established.

Western students may have the right to protest and, indeed, some have taken their university to court, for example in the U.S. and Germany. Students in Eastern European and ex-Soviet countries, however, may have the advantage of presenting the alternatives as the technological innovations and tools of modernisation that they actually are. Teachers in some western countries may, according to my own experience, be less willing to change their habits and approach modern learning tools with the interest seen in countries with fewer financial means. Availability of cost-price alternatives such as the InterNICHE supported freeware may be enough to bring about replacement, as Dr. Ramasamy Raveendran from India explains concerning the ongoing replacement in his country: "If you give an alternative to a university, they will use it."

Resources make change possible

Worldwide change from harmful

libraries of alternatives, or 'loan systems,' also play a major role, as they enable small student groups and animal welfare groups to present directly to students and teachers a range of alternatives that they could otherwise not afford. The InterNICHE Loan System, for example, enables items to be used in Japan one week, and the U.S. the next; and after lending Critical Care Jerry mannikin to the University of Florida, the veterinary college bought five.

Replacement, not only technology

Even if technology-based alternatives have certainly helped bring about change, it is also important to realize that sometimes just a different approach is needed to create a fully humane learning environment. Dr. Garry Scroop from Australia brought about change in his physiology classes simply by emphasizing critical thinking and problem-solving. This made him create animal-free physiology classes where the students used themselves as the experimental tool, a method identified as a best teaching practice by the Higher Education Council of Australia. Another

specialists, and others to the issue. Humane education is also about creating an environment where students can focus on the learning rather than fighting for their beliefs, and so it attracts teachers who are committed to their role as educators. Of course humane education is also about human rights, or the right to freedom of conscience. Finally, humane education is about respecting animals' lives, an issue that is becoming important to an increasing number of professionals, as well as the general public. It also binds together a wide variety of different people with different backgrounds and cultures, and the quality of this campaign was very much reflected in the InterNICHE Conference through the philosophers, computer scientists, animal rights activists, students, teachers, and producers of alternatives from all parts of the world who were united for a common cause: the creation of a generation of biologists, veterinarians, and doctors worldwide who are devoted to their profession and grounded on a basis of respect for living beings, human and animals alike. **AV**

INTERNICHE IN GLOBAL EXCHANGE

BY NICK JUKES, COORDINATOR, INTERNICHE

Work to replace harmful animal use and to implement alternatives has been gaining momentum across the world through the commitment of many volunteers from the International Network for Humane Education (InterNICHE) and its collaborators such as Animalearn. Working closely with teachers interested in modernising university life science practical classes and supporting students who conscientiously object to dissections and animal experiments, campaigners have an increasing number of success stories on which to report.

The availability of so much excellent software and other alternative learning tools, mostly

developed by teachers themselves, has been complemented by the availability of resources to facilitate this replacement. Information resources, libraries of alternatives, and outreach and training are all playing a role; and teachers are increasingly willing to share their positive experiences of implementing alternatives.

One example of this progress is the InterNICHE outreach in Russia and Ukraine held during October 2005. With presentations and training in alternatives to over 500 teachers and students, it culminated in guaranteed replacement of animal experiments at a number of departments and huge media coverage across the whole of the former Soviet Union.

In St. Petersburg, the State Academy of Veterinary Medicine is introducing alternatives for economic as well as pedagogical and ethical reasons. The Department of Pharmacology has halved animal use in recent years through audio-visual aids and clinical learning opportunities. And in exchange for donations of computers from InterNICHE and the International Association

Against Painful Experiments on Animals, the department agreed not to use any animals at all for students or postgraduates. With 1,000 animals originally used in education every year, the total has now been successfully reduced to zero.

The second institute to replace 100 percent of experiments and to implement donated alternatives as part of a broader process of reform and modernisation is the Agricultural Academy at Velikie Luki. The whole Faculty of Animal Production Technology agreed to drop animal experiments from its courses.

These successes are rooted in the InterNICHE-Russia library of alternatives that allows free borrowing of items by teachers and the availability of freeware alternatives that can be distributed at cost price. Together they illustrate how much can be done with seed funding to support small-scale but highly effective and sustainable projects that are designed to facilitate real replacement. They also remind us that despite the huge challenges facing campaigners for an ethical science, there are in fact many open doors. **AV**

VIVISECTION NOT!

Alternatives, The Best of Animals & Science By Vets Care Organization, Pakistan



Pakistan is a country where one veterinary university and 3 veterinary faculties are awarding graduate degrees to 500-600 students every year. Hundreds of animals have been killed behind the closed doors of laboratories. Similarly, all over Pakistan thousands of animals are killed by harmful methods in the name of education and research without admiring the death and life of those animals. The researchers haven't any awareness about the harms of vivisection and no idea about alternatives because there is no interest. In this critical situation, Vets Care Organization (VCO) took the initiative to make noise in favor of laboratory animals for the first time in Pakistan.

"Vivisection Not! Alternatives, the Best of Animals & Science" was conducted by Vets Care Organization in the auditorium hall of UVAS on October 4, 2005. The chief organizer of the seminar was Rana Shaukat Hussain (General Secretary),

and the chief guest of the event was Professor Dr. Khalid Pervaiz (Dean, Faculty of Veterinary Sciences, UVAS Lahore). Three lectures were delivered in the 1st session: 1) "Idea of Vivisection, What are Alternatives and their Use in Education," presented by Professor Dr. Zafar Iqbal (Chairman, Department of Pathology and Director, ICE&E UVAS Lahore); 2) "Use of Animal Alternatives in Microbiological Research," presented by Dr. Irshad Hussain (Associate Professor, Department of Microbiology, UVAS Lahore); and 3) "Concept of Animal Welfare in Pakistan," presented by Dr. Noor-ul-Zaman Rafique (Veterinary Officer, SPCA). The two alternatives, Physiology Simulator and Prodissection of Frog, were demonstrated in the 2nd session.

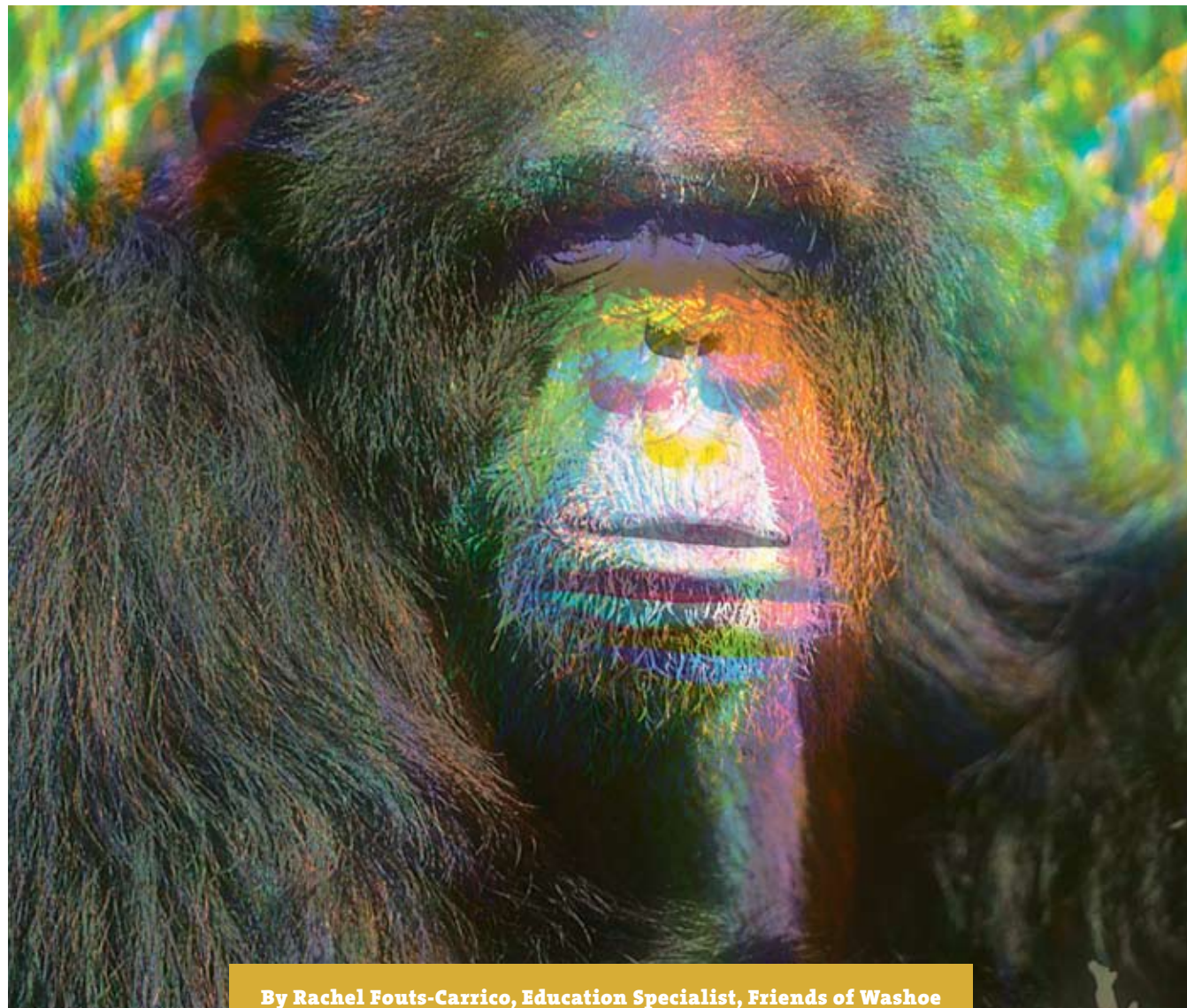
The exhibition of alternatives was also arranged after the first session, and a number of alternatives, including CD-ROMs, videos, mannikins, and models, were exhibited. The guests were served with tea and snacks. The American Anti-Vivisection Society (AAVS) and the New England Anti-Vivisection Society (NEAVS) sent literature for distribution, and alternatives were sent by the International Network for Humane Education (InterNICHE) for exhibition. The seminar was sponsored by the International Association against Painful Experiments on Animals (IAAPEA). At the conclusion of the seminar, shields were presented to all the speakers by Vets Care Organization.

More than 150 people including microbiologists, zoologists, veterinarians, researchers, and the students of the concerned fields attended the seminar. The Dean, Faculty of Biosciences, and a number of UVAS teachers also attended

the seminar. In organizing the team, Dr. Fariha Akhter, Shahid Mehmood, Sabira Nazir, Waqas Tahir, Shoaib Karim, Tanveer Ahmed, Waseem Abbas, Kamran Latif, Shaista Gul Bukhari, Bushra Ijaz, Irum Ayesha, Mirza Usman Baig, Waqas Azeem, M. Asad, Asif Awan, Waseem Shaukat, and Rohaib Aslam performed their duties at their best level with a number of volunteers.

In the seminar, the president VCO, Dr. Mohsin Ali Bhatti came especially from Islamabad after postponing his tour to Sindh province. The honorable guest shared his views about alternatives and emphasized the issue of their practical use in Pakistan. The Souvenir was also presented to the Chief Guest. After the Chief Guest's speech, Professor Dr. H. A. Hashmi (Patron VCO) presented a vote of thanks and praised the work of the young team on organizing such a wonderful seminar for the first time. He also admired the practical work of Vets Care Club in the UVAS, working under the umbrella of Vets Care Organization. At the end of the seminar, gift hampers were distributed among the audience.

VCO also thanks all the volunteers who participated in organizing the event, and also announces the appreciation certificates which will be distributed in the next activity. **AV**



By Rachel Fouts-Carrico, Education Specialist, Friends of Washoe

CREATING CARING: A COMPASSIONATE CURRICULUM

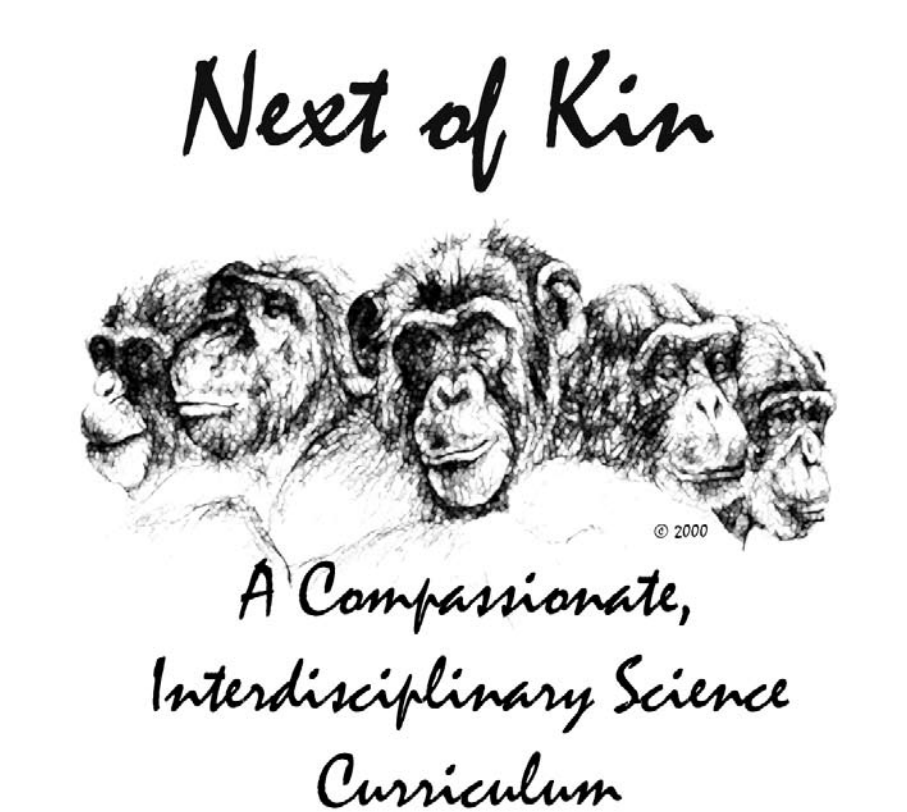
As a child, I had a second family. They were the chimpanzees we cared for at the Chimpanzee and Human Communication Institute (CHCI) (www.cwu.edu/~cwuchci), a sanctuary housed on the campus of Central Washington University. When I was in grade school, I would walk up to the sanctuary after school and spend a few hours with my parents and the chimpanzees until it was time for them to go to bed and for us to go home. I would play chase games with Loulis, the youngest chimpanzee. His adopted mother Washoe preferred to sign to me and inquire about what I might have in my pockets. Our human family's dinner conversations would include stories of my day at school and of the chimpanzees' day.

For those who have read *Next of Kin* by Roger Fouts and Stephen Tukul Mills, this story may sound familiar. The book chronicles 30 years of my family's life with Washoe and her family. It introduces the reader to the cross-fostering project where Washoe, and then later Moja, Tatu, and Dar, were immersed in sign language and, as a result, acquired this human language. It describes how Washoe adopted Loulis and how he acquired his signs from her. The book also enlightens the reader to many issues surrounding captive chimpanzees.

The chimpanzees at the CHCI influenced many of my life decisions, for example, what my career was to be and what grade level I wanted to teach. Washoe, Loulis, Tatu, Dar, and Moja greatly influenced how I viewed life in and out of my classroom. As a middle school teacher, I found what my parents taught me to be very helpful: "to know and to take each individual on their own terms." Middle school students are in a class of their own. To be successful with them, you have to understand and embrace their unique way of being. I grew up watching my parents live this philosophy as they worked with the chimpanzees. They would take each chimpanzee on his or her own terms and build a relationship. As a teacher, I tried to do the same. I would try to get to know my students and use what I learned to help make the classroom a safe, positive, and successful learning environment for them.

My family upbringing was definitely unique, and as I dialogued with my students and later experienced student visits to the CHCI for its Chimposiums, an educational program available to the public, I became increasingly aware just how different it had been. I started talking with people at the CHCI about ideas to meet the needs of school-age visitors, and to help prepare students before they came for a Chimposium. Many students who have attended Chimposiums at the CHCI often come expecting to be entertained instead of gaining a greater understanding of chimpanzees and the concerns surrounding them. Many are unaware of the dire issues that face captive and free-living chimpanzees. These discussions formulated the idea of developing a curriculum to meet these needs as well as help students understand more about chimpanzees in general and the issues that threaten the well-being of free-living and captive chimpanzees.

Thanks to the generous support of the New England Anti-Vivisection Society (NEAVS) and the Ethical Science and Education Coalition (ESEC), a 110-year-old Boston-based animal advocacy organization also interested in developing a humane science curriculum for grades K-12, I was given the opportunity to apply my skills as a teacher and my belief in the



humanity of all species to develop a one-of-a-kind humane science curriculum. With synchronicity on our side, a collaborative project with the CHCI and NEAVS/ESEC began. By December 1999, I was beginning to develop a unique and comprehensive science curriculum.

Next of Kin, A Compassionate Interdisciplinary Science Curriculum

The *Next of Kin* curriculum, which can be ordered at www.cwu.edu/~cwuchci or www.neavs.org and is also available for free to teachers from Animalearn (www.Animalearn.org), is for middle level students (grades 6-9) and elementary students (grades 2-6). (The overlap of the two curricula is to facilitate the different organization of schools: for example, middle schools vs. junior high schools).

These two curricula consist of two sections. The first section deals with free-living and captive chimpanzees. The unit titles from the middle level curricula are:

- **Our Fellow Animals**
Discusses scientific classification, the genetic relationship between species, and the similarities and differences between humans and chimpanzees;

- **Free-Living Chimpanzees**
Explores the different cultures of chimpanzee groups in Africa, and discusses issues that are affecting their populations;
- **Captive Chimpanzees**
Examines the use of chimpanzees in biomedical research, zoos, and the importance of permanent-retirement sanctuaries; and
- **CHCI**
Introduces students to the history behind chimpanzee sign language and the chimpanzees at CHCI.

The first section of the elementary curriculum follows the same issues. The restructured units include:

- **General Chimpanzee Information**
- **Chimpanzee Issues**
- **Chimpanzees and Language**
- **Animal Issues**

The second section and final unit of both curricula:

- **A Humane Community**
Expands the students' awareness to all our fellow animals by focusing on the ethical problems surrounding vivisection (the use of animals in experiments, testing, and surgical training and other education) and the importance of having respect for all living creatures.

Both curricula have teacher introduction sections, lessons appropriate for the unit, a glossary, a bibliography, and a unit assessment.

Like all curricula, the *Next of Kin* curriculum has an agenda. For example, environmental curricula focus on saving the environment, and curricula from groups like the Massachusetts Society for Medical Research's "People and Animals United for Health" supports the use of animals in research. The *Next of Kin* curriculum's agenda is one that is new. It is to allow teachers to give their students information on chimpanzees and animal research that they have not previously received, and to educate students on the ethical issues surrounding captive and free-living chimpanzees and those animals used in experimentation. *Next of Kin* offers insight that will help students understand some of the reasons why replacing exploitation with compassion can benefit all of life. It is extremely important that both sides of this ethically, scientifically, economically important social issue be offered so that informed decisions can be made. The goal of developing the *Next of Kin* curricula was to open students' eyes to new information that will enable them to make compassion-based decisions now and throughout life.

Educational Environment

Teachers find the flexibility of the curriculum refreshing. If a teacher wants to use it as a theme for the year, the curriculum has that capacity. If a teacher wishes to use it as a supplement or for those spontaneous teachable moments, it works for that as well! Moreover, many teachers who use the curriculum find that the subject is one that truly captures the students' interests.

Much thought was given to the expectations and teaching standards found in education. The *Next of Kin* curriculum aligned to the Washington State Essential Academic Learning Requirements is available at the CHCI website www.cwu.edu/~cwuchci/curriculum_ealrs.html. This alignment information is a resource for teachers across the United States as they take the curriculum into their classroom. **AV**

Next of Kin Teacher Feedback:

I have taught for over 20 years. When it comes to the life sciences and topics such as habitat destruction and ethical issues that naturally emerge from studying a sanctuary such as the CHCI, I have not run across a curriculum that helps explain the subject as well as the *Next of Kin* curriculum. It is balanced yet honest. It doesn't preach.

The most important message embedded in the curriculum is respect for life. Nurturing life and developing respect for the incredible variety of living things is one of the highest human values we hope to instill in our students and the *Next of Kin* does just that.

I would be very happy to carry on and on with more specifics if you would like me to! Thanks for contributing toward helping our children become more aware of what effect their actions can make on the world.

Julie Blystad, 4th grade teacher at Seattle's Bertschi School

Very easy to use & interesting. Teacher friendly. The kids loved it.

Sarah Ard, 7th/8th grade teacher

Very informative, enough background for teachers with little previous background on the issues to use effectively. Very thorough treatment of the issues and interesting/motivating for students. Insightful, inspirational, well thought out.

Richard Grant, 6th-8th grade teacher

I've come away with more than just [a] curriculum for my students but much to contemplate for my own self [and] of animals and research.

Anonymous middle level teacher

Colleges/Universities with Dissection Choice Policies

Dedicated college/university students around the United States are continually making a difference for animals used in their educational institutions. Due to their efforts, several individual students and student animal protection groups have been able to urge their schools to enact student choice policies on their campuses. The following are a list of those colleges/universities that have created policies allowing a college student to pursue a degree humanely.

- Barry University, Florida
- Brigham Young University, Utah
- Bryn Mawr College, Pennsylvania
- California State University, Bakersfield, California
- The College of William and Mary, Virginia
- Cornell University, New York
- Georgia Military College, Georgia (Eliminated all animal dissections in its anatomy and physiology courses)
- Lehigh University, Pennsylvania
- Loyola Marymount University, California
- Marist College, New York
- Oberlin College, Ohio
- Oregon State University, Oregon
- Penn State, Pennsylvania
- Portland Community College, Oregon
- Quinnipiac College, Connecticut
- Radford University, Virginia
- Rice University, Texas
- Sarah Lawrence College, New York
- State University of NY, Albany, New York
- Texas Woman's University, Texas
- The University of Texas-Health Science Center at Houston, Texas
- University of California, Berkeley, California
- University of Houston, Texas
- University of Illinois, Urbana-Champaign, Illinois (Created their own website www.dissectionchoice.org)
- University of New Mexico, New Mexico
- University of Pennsylvania, Pennsylvania
- Virginia Commonwealth University, Virginia
- Virginia Tech, Virginia
- Wright State University, Ohio

Several additional college/university students and professors have used alternatives to animal dissection. However, they do not have specific written policies in place. Fortunately, a growing number of students and student groups are working to implement student choice policies at their institutions.

If you are interested in spearheading a campaign to implement student choice on your campus, please contact Animalearn for assistance via e-mail at info@animalearn.org or by phone at (800)729-2287! **AV**



Virtual Frog Guts

By David Hughs, Froguts

Froguts Inc. is a unique developer of biology simulation software. We are proud that our passion to provide alternatives to dissection and our software now reaches an expanding international community. Over the years, we have evolved into a one-stop supplier to many schools, districts, and institutions for their standalone and supplemental biology software.

Why are we unique? Froguts employs a one of a kind, immersive, and comprehensive pedagogical approach to engage students and enhance their content retention. We accomplish this with virtual tools such as microscopes, CT machines, standard dissection tools, assessments, and amazing 3-D engines. Froguts software integrates accessibility and ease of use with its intuitive interface. Our modules follow a systems based approach in a simulation that is virtually indistinguishable from the actual experience. We do of course use animation and graphics where appropriate but not as a substitute.

There is so much to say about our software, but we think the best way to experience it is by viewing a demo on our website, www.froguts.com, or subscribing to our service. We have been fortunate this year to be honored with the inclusion of our software in ISTE's (International Society of Education and Technology) Science Units for Grades 9-12 (National Educational Technology Standards for Students Curriculum Series). Additionally, we have enjoyed wonderful press coverage like our October 2005 *New York Times* article, and awards such as last year's *Technology and Learning Magazine's* Award of Excellence.

We look forward to your review of our software and hope you will share with us the excitement that our virtual simulations bring to evolving biology classrooms. **AV**

By Laura Ducceschi,
AAVS Education Director

Virtual Dissection

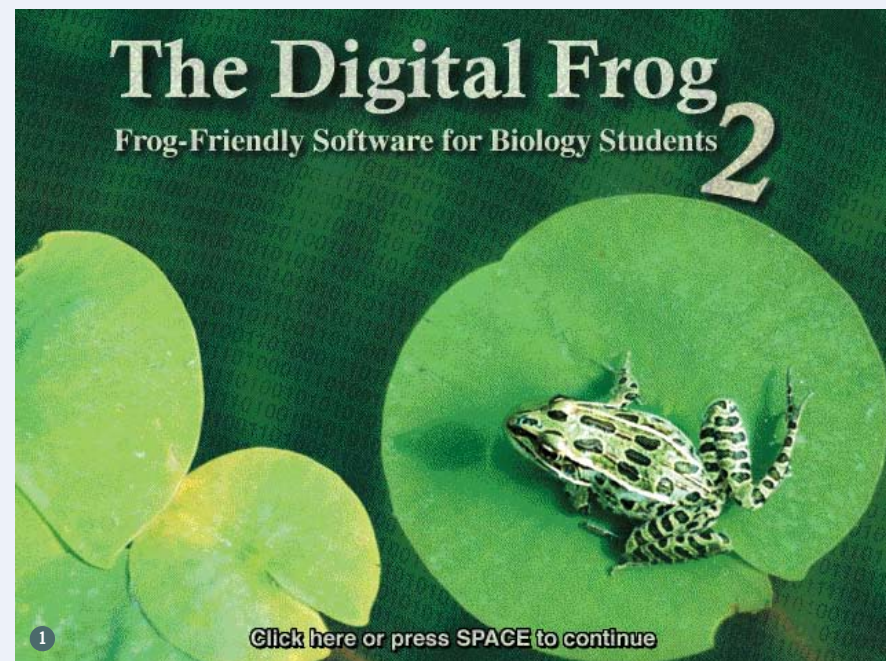
A Step-by-Step Tutorial

Given the number of students who ethically object to dissection, and the growing number of educators who are switching from wet labs to dissection alternatives because of the educational effectiveness they offer, CD-ROM dissection programs have become quite popular. There are hundreds of choices that educators and/or students have when selecting the right dissection alternative for their classrooms, and Animalearn's The Science Bank free loan program has over 250 of these alternatives available.

Changing your classroom from one where students dissect with a scalpel to one where students dissect with a computer mouse requires nothing more than an available computer, a CD-ROM, and, of course, the computer mouse itself. What it offers, however, is the promise of an exciting, innovative, and stimulating educational experience.

It doesn't take long for both students and educators who try CD-ROM dissection software to swear that they will never return to the old-fashioned out-of-date wet labs again. Once they familiarize themselves with how computerized dissection works, they feel very comfortable using the software, and are very satisfied with the educational results.

What follows is a tutorial for Digital Frog II, one of our most popular loan requests through The Science Bank. Digital Frog II is used in classrooms at the middle school, high school, and college level, and offers a computerized dissection of the frog. The CD-ROM offers more in terms of education than dissection ever could.



The Frog in Digital

The Digital Frog II, a product of Digital Frog International, is a software program that combines full-color photography, videos, three-dimensional animations, and text to teach frog dissection, anatomy, and ecology. (see image 1) Inside the program is a workbook, including assessment materials. This program is a great way to learn about frogs without the health hazards associated with formaldehyde.

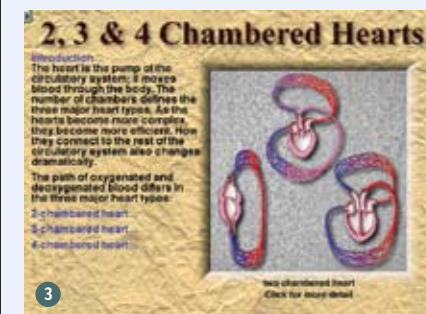
Digital Frog II is suitable for both Windows and Macintosh platforms. The opening screen leads to the main menu, which allows you to choose Quick Tour, a description of how to navigate the program, Dissection, Anatomy, or Ecology. (see image 2)



The Dissection component contains both full-screen color photographs and video clips to lead students through a traditional frog dissection, including the body cavity organs, head structures, and leg muscles. There are instructions that inform you which cuts to make, and then you identify the organs themselves.

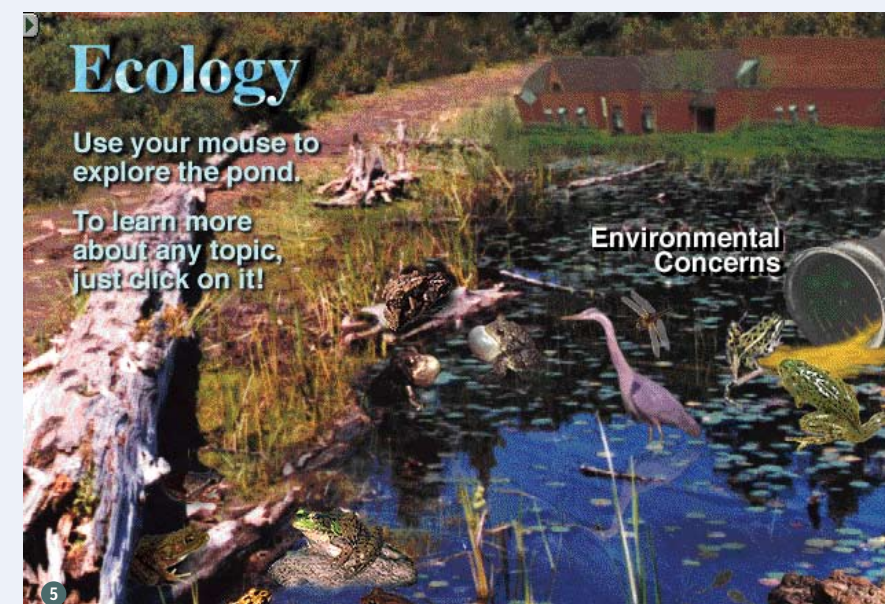
While you are performing the dissection, there are full color videos showing the cut and stages of a dissection.

The Anatomy component provides a complete reference to all of the major body systems of the frog, using both text diagrams and animation. The major systems can be studied first at a system level and then on an organ-by-organ basis. This section includes the Respiratory system, where the diffusion of oxygen and carbon dioxide across the respiratory membrane can be viewed; Musculoskeletal system, where joints can be manipulated; Circulatory system, where the path of oxygenated and non-oxygenated blood through a three-chambered heart is followed and compared with two and four chambered



hearts; and Cellular division with meiosis and mitosis animations. (see image 3) In the section titled Interacting Systems, you can study each system's role in basic body functions. The Compare to Human section highlights the differences between frog and human anatomy.

The Ecology component looks at the life cycle of frogs, their behavior, and their biodiversity, with information on 18 frogs native to North and South America. (see image 4) Information about the plight of declining frog populations and why this is happening is discussed. This section also includes common behaviors and external pressures and environmental concerns relating to frog populations. (see image 5)



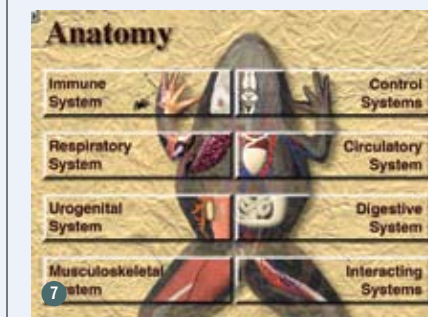
By choosing the Dissection Module, you will be asked to identify the parts of the frog. This is done by using your computer mouse to point to each of the frog's external features, which highlights each in red with a flashing checkmark. Moving the mouse over the video window allows you to rotate the frog to see external features from all angles.

First, select a part of the frog to dissect. To begin the dissection, point to one of the white dots, which changes the cursor into a scalpel, allowing you to make the first cut. If the incisions are not made correctly, the program does not register the cuts until they are correctly performed. On the left hand side of the screen, there is a video that demonstrates the incisions. (see image 6)

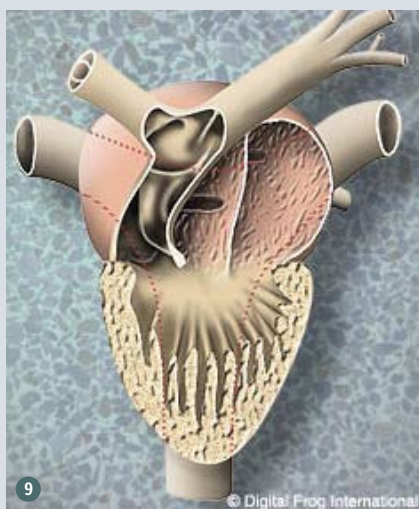
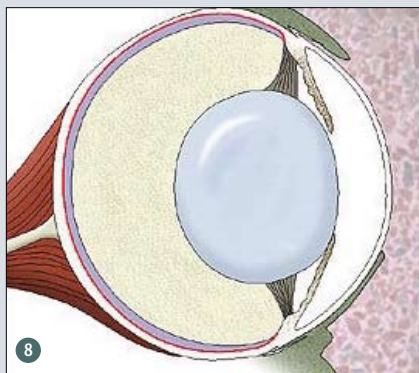
Continue the dissection by cutting through the layer of muscle on the frog's abdomen, which takes you to a full-screen picture of the frog's internal organs. To simulate an actual dissection, you must dissect in the correct order. If you click on the wrong organ, such as the stomach, there will be a message which directs you to dissect the overlaying organs. Similar to the first step in the dissection, you need to identify each of the visible structures and then make the appropriate cuts. Then, a video will play, showing the removal of the particular organ. Following the video, you can view a close-up of the organ and identify the internal structures or a function, which takes you to a corresponding anatomy screen.



The Anatomy screen allows you to learn more about the function of the frog's organ and body systems, showing things you would not be able to see in an actual dissection. (see image 7)



The buttons on each of the anatomy screens link to related screens, showing how one organ works in relation to the system as a whole or giving more detailed information on important aspects of an organ. (see images 8 and 9, next page)



A Happy Convert: Introducing Alternatives into My Classroom

By Sharon Maselli, Biology Teacher, Westerly Learning Center, New Jersey

This past year I taught an Honors High School Biology class to home taught students at Westerly Learning Center, a resource center located in Princeton, New Jersey. After dissecting a worm and a crayfish, I had two students who stated they could no longer continue dissecting specimens. Given that the lab was mandatory and represented 25 percent of the students' grade, I had to find alternatives. A friend forwarded Animalearn's website to me, and my problems were solved.

Animalearn's Nicole Green was very supportive and helpful in

supplying the materials I needed to ensure my students fulfilled their requirements. The drylabs on CDs came quickly and were easily returned in the provided mailing envelopes. Our dissections included the worm, crayfish, frog, perch, fetal pig, and cat. I previewed the drylabs before class each week, finding them very impressive and helpful to my lab planning. At times, I had the whole class join in on the drylab before dissecting specimens. Everyone, including me, laughed over the sound of the cutting scissors and enjoyed 'cutting' the specimen. I was particularly grateful for the drylabs when dissecting the cat, since a few more students chose not to participate in that dissection.

I began the school year stressing the usefulness of dissection and requiring all of my students to complete all the dissections. However, after trying alternatives, I have changed my mind. I found the drylab to be an acceptable option, finding the drylab students did as well as the other students. On several occasions, the wetlab students checked their work with the Animalearn CDs. I found the dry lab students did not experience the usual dissection frustrations, e.g.: "Gross, I have fish eggs on me!" "Is this the gall bladder?????" and "I cleaned up last time!"

As a teacher, I am confident that alternatives are an acceptable learning tool, and I believe they should be offered to students who sincerely object to dissection. I am grateful to Animalearn for providing a high quality alternative and for making this product accessible to educators. **AV**

A Student Perspective

By Daniel Gray, 9th grade home schooled student

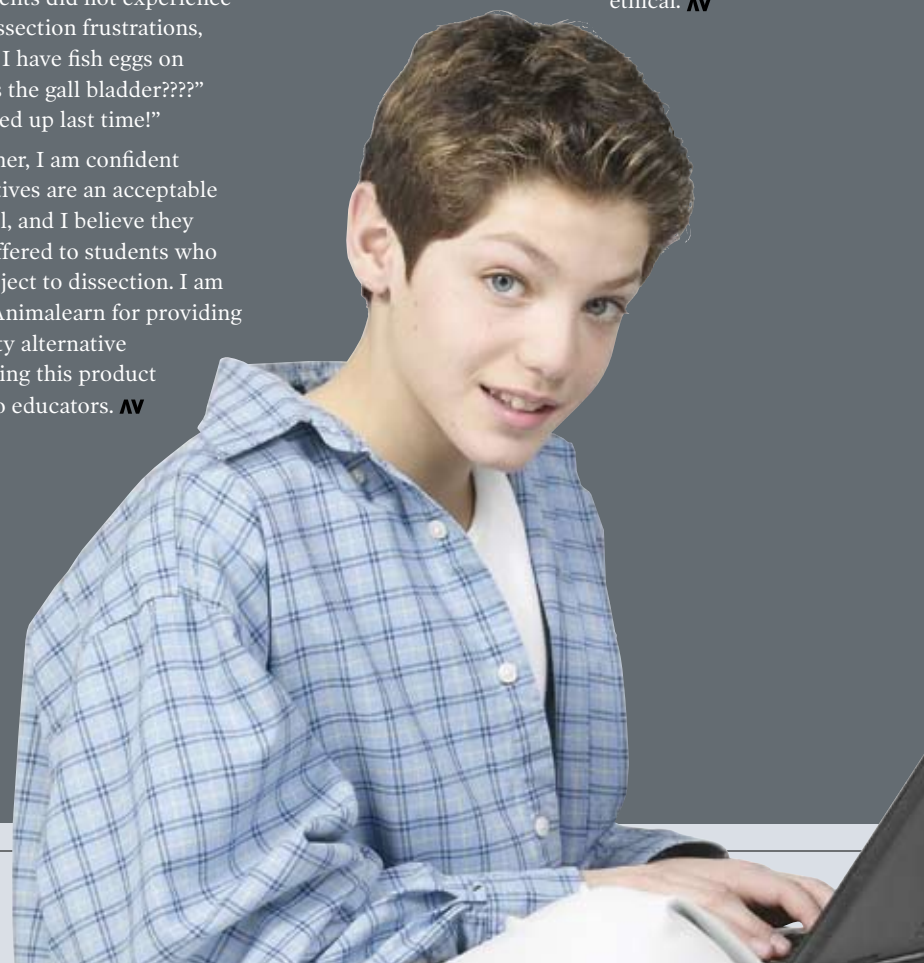
There are two main reasons I found this software to be a wonderful alternative to an actual dissection of an animal. First of all, when dissecting an animal, if you cut the wrong thing, there is no way to repair your mistake. The software version makes sure you cut in the right place with the right amount of force. You see what you're supposed to see inside the animal. Second, everything on the computer was well marked. You don't have to poke through things trying to find an organ based on a bad description in a little booklet. You click on something, and the program tells you what it is and what it does, and gives you cross references to other related organs and tissues. Furthermore, it is nice that you don't have to cut up an animal in the name of 'science.' This seems more ethical. **AV**

Conclusion

One of our most popular CD-ROM dissection programs available, Digital Frog II allows you to repeat a dissection without harming frogs. Having this ability to repeat and reinforce your learning experience and become highly skilled and knowledgeable is something that CD-ROM dissections can offer, but not traditional wet lab dissections.

With the quality of CD-ROM dissection alternatives available, we are likely to see the numbers of students requesting an alternative to dissection increase significantly.

For more information on the Digital Frog II and the many other dissection alternatives available through The Science Bank, please contact Animalearn at (800)SAY-AAVS or info@Animalearn.org. You can also learn more by visiting us online at www.Animalearn.org. **AV**



Making an Elephant Meeting a Virtual Reality

The area of humane education is a growing field that continues to develop and adopt technology that it utilizes in new and exciting ways. A perfect example of this is the electronic field trips offered by The Elephant Sanctuary in Tennessee, a haven to old, sick, and needy elephants formally used in zoos and circuses. As a true sanctuary, The Elephant Sanctuary is not intended to provide entertainment, and it is closed to the public. Instead, it fosters a humane education outreach program that has taught thousands of students around the globe to respect wildlife while learning about the endangered Asian and African elephants who live at The Sanctuary.

The electronic field trips are made possible through distance-learning teleconferencing and Project DIANE (Diversified Information and Assistance Network). Using interactive telephone, video, and multimedia computer technology, The Sanctuary teleconferences live with schools, libraries, community centers, etc., both nationally and internationally. Surveillance type cameras are setup in and around the elephant barns and throughout The Sanctuary grounds, allowing visitors to listen and view the elephants in real time during their daily activities. This non-intrusive observation allows viewers to experience natural elephant behavior in a wild setting, and enables them to become familiar with each elephant—her history, habits, and how moving to The Sanctuary has changed her life.

The electronic field trips are flexible and run approximately 45 minutes. There is a nominal fee for the program; however, it is tax-deductible. Additionally, a trip can be supplemented with free down-loadable curriculum that is suitable for grades K-8, and a free introductory video entitled *The Asian Elephant* is also included.

This powerful program is an excellent and unique teaching tool, and The Elephant Sanctuary has received much praise regarding its electronic visits from both students and teachers alike. For more information about electronic field trips to The Elephant Sanctuary, please visit www.elephants.com. **AV**





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American Anti-Vivisection Society Challenges USDA's Refusal to Regulate Pet Cloning Argues animals are harmed in cloning

Jenkintown, PA— The American Anti-Vivisection Society (AAVS) has called on the U.S. Department of Agriculture (USDA) to reverse its position refusing to regulate the pet cloning industry. AAVS presented its arguments to USDA on November 9, 2006, expanding on documents presented in its petition submitted last February. In this latest round, AAVS cites additional legal and scientific evidence that, by all measures, pet cloning meets the definition of research that is subject to regulation by the Animal Welfare Act (AWA). In addition, AAVS demonstrates the serious harm to the animals involved, particularly the surrogate mothers and the clones themselves.

In the letter to USDA, attorney Tracie Letterman, of Kimbrell & Mendelson, asserted, "The USDA's determination that pet cloning companies are not covered by the AWA is arbitrary and capricious and an abuse of discretion. The agency's decision is not supported by the AWA's text and purpose of regulating the use of animals in research and experimentation." Considering the extremely high failure rates of pet cloning and the invasive multiple surgeries that are involved, AAVS has made a case that there are few procedures that are more experimental in nature than pet cloning.

AAVS also refuted the Agency's characterization of pet cloning as being outside the animal welfare regulations. AAVS President Sue Leary commented: "USDA is trying to shirk its responsibilities under the law with the absurd claim that the novel creation of pet clones involves 'standard veterinary medical procedures.' But even standard procedures, like blood draws and certain surgeries, commonly done in research and experimentation, are unquestionably subject to regulation. USDA should know better."

USDA is expected to respond to the new evidence after January 1, 2006.

In 2004, AAVS launched its No Pet Cloning campaign and since then has become a trusted resource in the issue of genetically engineered and cloned animals sold as pets. AAVS hosts the website www.NoPetCloning.org and has published an investigative report, entitled "Pet Cloning: Separating Facts from Fluff." Additionally, a 2004 survey sponsored by AAVS found that 80% of people in the U.S. are opposed to cloning companion animals such as cats and dogs.

AAVS is a non-profit animal advocacy and educational organization that has been monitoring the use of animals in laboratories since 1883. AAVS pursues its objectives through legal and effective advocacy, public education, and the support of non-animal alternative methods. For more information, please visit www.NoPetCloning.org or www.AAVS.org.

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Much Needed Exposure for Mice and Rats in Research

What is not considered news, however, is the daily plight of millions upon millions of mice and rats, who languish and die in research laboratories across the country without any legal protection whatever. For in 2002 President Bush signed into law a farm bill containing an amendment proposed by then-Senator Jesse Helms to exclude most such creatures from the definition of "animal" under the Animal Welfare Act.

According to Sue Leary, President of the Alternatives Research & Development Foundation, this makes the United States the only country in the world, among those that regulate animal research, to formally exclude some of them.

This reaches the level of absurdity when you consider, as was pointed out to me by Dr. Barbara Orlans, a faculty affiliate at the Kennedy Institute of Ethics, that, as a result of the exclusion, only 1 percent of the animals used in research are actually protected by the Animal Welfare Act. No matter how friendly to humans may be the intent of this forced labor and imprisonment of our fellow mammals—and also birds, who are similarly unprotected—how can we justly or humanely deny them the legal guarantee of relief from pain and distress?

But only the United States Department of Agriculture (USDA), which is governed by the Helms Amendment, can close down a lab. Furthermore, says Leary, of most immediate practical concern is the need for public accountability, which, again, only the USDA can supply. The basic tool of measurement of pain and distress is needed to gauge progress in this area.

As it happens, a friend of mine has a pet rat. That rat is clearly intelligent, certainly has emotions, and flaunts her distinctive personality. We can all support efforts to ameliorate the effects of the Helms Amendment on her less fortunate cousins by joining an organization such as the American Anti-Vivisection Society. **AV**

New Haven Register
 January 4, 2006

Dog is No Invention

Time's designation of the Afghan hound puppy named Snuppy as "Invention of the Year" is short-sighted and exploitive. Toasters are 'inventions,' animals aren't.

Korean researchers who announced last August the first successful cloning of a dog in the journal *Nature* made a media hype of what should be a matter of grave concern to society. There was serious animal suffering involved in this research—100 "donor" dogs and 123 "surrogate mothers" translates into major multiple surgeries. All but three of the 1,095

implants failed to develop into a full pregnancy and one of the puppies who was born by caesarian died after struggling with health problems for weeks. Did anyone ask about where all these dogs come from and how they are treated and where they are now?

And Hwang, as we now know, is not a science 'hero' for engaging in research beyond the boundaries of ethical oversight. He is a media hound, an invention of our time. **AV**

Sue A. Leary, AAVS President
Time
 Submitted December 2005

Animalearn Director Reaches Out to Elephants

I remember Toni from when I was a child who visited the Nay Aug Zoo back in the 1980s. At the time, I always felt compassion for her when I saw the small confines with which she was kept, but I was much too young to understand the ramifications that such unnatural confinement can cause to an elephant's psychological, social, and physical well-being. While I enjoyed an afternoon of entertainment visiting the zoo, animals such as Toni languished.

I am the Director of Education for the American Anti-Vivisection Society, a non-profit organization in Jenkintown, PA, where I oversee a program called Animalearn. My job is to work with students and educators to promote respect for animals, and the opportunity to treat Toni with care and compassion is a wonderful way to set a positive example for our children.

Along with many activists, I hope that Toni is allowed to live out her life at The Elephant Sanctuary. While the long-term benefits to Toni's health if placed in The Elephant Sanctuary are obvious, we also need to look at the message that we are sending our children by treating animals such as Toni as 'our entertainment.' Toni is a living being that deserves to live out her life in a natural habitat, and children will gain more educationally by learning that the proper treatment of these majestic creatures includes appreciating them in their natural habitat, not taking

them from the wild, enclosing them in artificial settings, and putting them on display.



While the educational argument is that zoos have become a way for people to enjoy the sights and sounds of many animal species they might not have the opportunity to see, that is not reason enough to imprison them in a cage. We can learn much more about these same animals by watching them on television, the internet, in educational documentaries, or in reading about them. We can also teach our children an important value by doing this: Compassion toward animals is more valuable than a trip to the zoo.

Research shows that teaching children to have compassion towards animals has a profound effect on their treatment of other human beings.

At Animalearn, we give away a free humane education curriculum to educators in grades 2-5 and 6-9, called *Next of Kin*, which focuses on building respect for animals to create a kinder world. If any readers would like a free copy of this curriculum, I can be contacted at (800)SAY-AAVS. **AV**

Laura Ducceschi, AAVS Director of Education
The Scranton Times-Tribune
 Submitted November, 2005

Ethics of Cloning Debated

...Crystal Miller-Spiegel of the American Anti-Vivisection Society acknowledges that the creation of Snuppy makes human cloning appear more certain because of the knowledge gained in the process. But she stresses that it should not be attempted. Because the DNA used in cloning is often old and imperfect, Mrs. Spiegel says cloned animals develop the same health problems and suffer the same high mortality rates as the donor.

"When we're talking about the dog that was cloned, there were 123 dogs used to produce one puppy. There were three pregnancies, only two of which came to term. One puppy, in addition to the one that was in the news, died after three weeks of life from respiratory problems. So the technology is extremely inefficient. It results in a lot of suffering on the side of the surrogate animals and then also the cloned animals themselves tend to suffer quite severely." **AV**

Voice of America
 October 6, 2005

Keeping Animal Biology Alive in Secondary Schools

By Lynette Hart and Mary Wood, UC Center for Animal Alternatives, University of California, Davis

New computer technology is transforming the possibilities for learning human and animal biology. Unlike formalin specimens, realistic 3-dimensional images, annotated with pop-up labels and texts, have no odor and can be accessed 24 hours a day. Thus, it may seem perplexing at times that this revolutionary technology seemingly has not revolutionized instructional presentations in pre-college biology classrooms, even though it pervades veterinary medical education.

Based on our discussions with teachers, dissection of animal specimens persists in classrooms for at least three reasons. First, no dialog takes place in the educational profession concerning dissection, nor is it mentioned in educational standards or frameworks. Thus, there is no venue to consider the various issues related to dissection of animals. Second, teachers have little support in their districts by way of teaching resources or budgets for purchases. Third, teachers seek to motivate their students, and commonly find

that dissection is effective in this respect.

At the University of California, Davis School of Veterinary Medicine, faculty members and now a strong software team have been creating videos, and then software, producing and improving teaching materials for our veterinary students for the past 30 years. A talented group of programmers, artists, and website designers, Computer-Assisted Learning Facility (CALF) creates authoritative instructional materials for courses, and some of these are available for purchase. *The Virtual Heart* is one spiffy example of its work. When it was introduced to 16 Sacramento secondary schools for biology several years ago, the teachers were enthusiastic and asked for coverage of more body parts and systems. With recent advances in the technology, it would be feasible to offer 3-dimensional views that could be rotated, and users could interactively highlight structures of particular interest within the brain, for example, using just a typical desktop computer.

Veterinary faculty and staff also sought to offer similar learning tools to undergraduates in a course on comparative anatomy; this effort was spearheaded by Mike Guinan, with strong support from the anatomy faculty members. Guinan laid out a course plan for laboratories that was modeled on Montessori nursery school classrooms, where all of the materials for each laboratory were

reusable and could be stored in a drawer or cupboard between uses. For each of the 10 weeks of the quarter, a body system was the focus of the laboratory, including, skeletal, muscular, digestive, nervous, respiratory, and circulatory systems. A large laboratory room was set up each week with about 30 unique laboratory stations, each featuring microscope

extensive software array of images complemented the laboratory, which were available for study 24 hours a day. The undergraduate course is remarkable, since many colleges and universities no longer attempt to offer anything along these lines due to the cost of materials and difficulty in obtaining suitable materials. Our undergraduates also



An undergraduate comparative anatomy lab.



Examples of plastinated specimens.

slides, plastinated organs, dissected plastinated specimens called prosections, with labeled parts, diagrams, molds, and appropriate text at each station. A comparative course, the materials featured included fish, birds, and mammals. For the lecture portion of the course, an

are able to take a course in human anatomy, one featuring human bodies that have been willed to the University of California to be used for education. These are optimal educational opportunities for students who are preparing to enter biomedical professions or research.



Two students working with a bone box.



People may ask, why is this improved and exciting technology not being delivered effectively to high school biology?

People may ask, why is this improved and exciting technology not being delivered effectively to high school biology? Experiencing teaching science in three different California districts years ago, and then meeting with focus groups of biology teachers during the past decade has informed and provided motivation to consider this question. When one of us was teaching science decades ago, school districts maintained audiovisual curriculum centers where teachers could borrow laboratory materials, including film strips, slides, films, and models, as well as curricular guides and texts. School districts often assigned mentors to assist new science teachers in ordering up their laboratory resources and materials, thereby providing good support. Although computers are available at virtually all schools, the targeted delivery of biology teaching resources to classrooms has been abandoned as the resource centers and curricular libraries have been closed. At the same time, the teachers' annual budgets to purchase supplies in laboratories have shrunk to a pittance. Teachers commonly use their own money

to enhance their laboratories and what they can offer to motivate and interest their students.

Many teaching resources are available in the marketplace, and these are effectively cataloged and updated regularly by NORINA (a website resource center), currently numbering about 4,000. However, as I learned in meeting with teachers in focus groups, these resources are not well-tailored to teachers' needs in high school biology and physiology, and do not provide a well-integrated and accessible array of materials that teachers could easily draw from to meet their teaching needs, technology capabilities, and schedule constraints. Despite so many resources being available, some materials are very expensive, and others do not fit the curricular needs and fall short of the capabilities available with current imaging and software techniques. As a stopgap, zealous and energetic teachers can assemble a patchwork of materials from among these resources, and supplement them with their own cupboard collection of materials that they acquire over the years, plus do some shopping as well. Teachers wanting to

efficiently review what is available from NORINA, and three other databases, can search in a user-friendly, point-and-click webpage, preparation of which was partially supported by Animalearn:

http://www.vetmed.ucdavis.edu/Animal_Alternatives/altsearch.htm

If they had the time and money, educators then could order some teaching resources.

The major incentive for teaching is to excite and inspire students. Dissection does effectively rivet students' attention. This motivational aspect is the feature that accounts for teachers using dissection in biology laboratories: it is exciting for the students. And the teachers have no similarly effective, easily accessible alternative teaching resources that would be motivating and also informative to students.

Coming back, then, to the question of why the improved technology is not yet available to our high school biology students, the answer is that there has not yet been the will and support to produce these materials. Creating them would need to be a priority, and substantial funding would have to be assigned to that task. Building on the capabilities of the UC Davis veterinary curricula, production could be accomplished relatively economically, not like a Pixar or Disney production.

Providing a basic supply of high quality teaching materials for virtual biology laboratories everywhere would be one step toward rebuilding confidence in public schools in the United States. People and organizations committed to animal welfare and childhood education could get behind creating a groundswell of interest in an initiative to create superlative software materials that are freely available. The pattern of our students falling behind in science could be reversed, and all students could gain a greater knowledge of human and animal biology. Such understanding is essential for assuring good health and managing appropriate medical care throughout life. **AV**

Vivisection Hurts

Too Much Animal Use in Research and Education is Unnecessary and Inhumane

**By Lawrence A. Hansen, MD,
University of California,
San Diego**

Animal rights activists have to live with the reality that public opinion surveys indicate that 70 percent of Americans are supportive of the use of animals in research, as long as the animals do not suffer unnecessarily. The good news for animal advocates in that statistic is the qualifying clause “do not suffer unnecessarily,” which means most people do care whether or not the research needs to be going on in the first place, and they are concerned about the animals’ suffering.

For most people, necessary research is directed to finding cures for human diseases. But much of the most ethically disquieting animal research has no direct applicability to human disease. For example, in order to study the neural control of eye movements, rhesus monkeys at the University of California, San Francisco (UCSF) for the last 20 years have undergone coil implantations in both eyes, multiple craniotomies for in-depth electrode placement, head immobilization surgeries where screws, bolts, and plates are directly attached to the skull, and water deprivation to produce a

“work ethic” so that they will visually track moving objects.

Most of us cannot even bear to look at a picture of these monkeys with their electrode-implanted brains and bolted heads struggling to perform their eye exercises in a desperate effort to get water. Disingenuous rationalization for inflicting such suffering invariably evokes the possibility that someday somehow the results will lead to a cure for Alzheimer’s disease, or some other human affliction. But such blank-check justification is a cruel hoax, since funding for highly invasive primate research in basic neurophysiology can only diminish the resources available for clinical trials, epidemiology, and human pathology based research, which has been the source of all significant insights into Alzheimer’s disease. Since the monkey vivisection will not lead to improved human health, you don’t need to be an animal rights advocate to wonder if an ethical cost/benefit analysis might conclude that the ends do not justify the means.

Advocates for animal research like to emphasize

that most experiments involve rats or mice, and that, for example at the University of California, San Diego (UCSD), less than 1 percent of animals used in teaching or research are monkeys, dogs, or cats. But monkey research is big business at San Diego’s Salk Institute for Biological Research, where this goes on literally underground, out of sight, and away from public scrutiny. And at UCSD it took a major public protest, articles and editorials in the *Union Tribune*, and years of internal dissent to get the medical school to stop killing purpose bred dogs in its freshman physiology and pharmacology courses. Those dogs endured lifetimes of caged confinement prior to their vivisection and death, and none of this suffering had anything to do with research; they were all being killed for mere teaching demonstrations.

To its eternal credit, the UCSD Faculty Council and School of Medicine department chairs reviewed the dog lab issue in 2003, after considerable adverse publicity. Recognizing that 95 percent of U.S. Medical Schools taught freshman

pharmacology without killing any animals, let alone dogs, and 82 percent of physiology courses were similarly cruelty-free, both groups recommended that dog labs not be included as part of the core curriculum, and, accordingly, that recommendation was honored, effective fall 2003. The pharmacology department still offers a separate elective dog-vivisection and euthanasia lab so students determined to kill dogs will not miss the opportunity, but happily only 7 out of 125 medical students made that lethal choice this year, and while it is sad to report that 5 dogs were killed, that is a far cry from the 50 to 60 which had previously been routinely destroyed.

in a henhouse at heart. The IACUC’s theoretical emphasis on humane research is itself something of an oxymoron, since the word humane means to treat with kindness, mercy, or consideration, and if humane treatment was a priority, the monkeys, dogs, cats, etc. would not be experimented on in the first place.

The Animal Welfare Act and other legislation controlling animal use in research and teaching endorse the 3 Rs of replacement, reduction, and refinement. Implicit in this endorsement is the sentiment that it would be better if we could avoid animal use altogether. But to a man with a hammer, every problem looks like a nail, and scientists

It is the obligation of those who care deeply about animals to watch-dog the researchers and let the public know that what might be necessary for an individual scientist’s prestige and career may be insufficient justification for intense animal suffering. At a primate sanctuary in Newcastle, Oklahoma, a sweet tempered rhesus macaque named Indigo, who loved a good back scratch and caused no trouble and never hurt a single human in his short life, died on January 13th. Indigo arrived at the sanctuary on June 24, 2002 from the Salk Institute for Biological Studies where he had been intentionally crippled.

Although Indigo couldn’t walk, he



In order to study the neural control of eye movements, rhesus monkeys at the University of California, San Francisco (UCSF) for the last 20 years have undergone coil implantations in both eyes, multiple craniotomies for in-depth electrode placement, head immobilization surgeries where screws, bolts, and plates are directly attached to the skull, and water deprivation to produce a “work ethic” so that they will visually track moving objects.

Some minimal safeguards for research animals exist, at least in theory, since the federal Animal Welfare Act mandates that Institutional Animal Care and Use Committees (IACUC) must approve all use of animals in research and teaching. Animal researchers themselves sometimes grudgingly admit that such oversight has ended some animal abuse, and that the days of throwing conscious dogs down elevator shafts to study trauma are thankfully over. But the regulatory deck is stacked against the animals, since IACUC’s membership is comprised overwhelmingly of animal research scientists themselves, and a committee of guardian foxes may not have the best interest of the chickens

trained to use animals are unlikely to seek alternatives. That is why it took the broader perspective of hundreds of protesting physicians and the faculty council, etc., to eliminate routine dog vivisection at UCSD over the protests of non-physician animal research-oriented basic scientists. Similarly, monkey vivisection will not surrender their drills, electrodes, bolts, and screws until the public, who after all pays for the experiments, tells them to stop. We may wonder how people can inflict such pain even in the name of science, but “custom reconciles us to everything” (Edmund Burke), and it seems indifference to animal suffering is a trait readily acquired in graduate school.

used his hands and arms to lift his lower body, and he could climb to get to the top of his house during the summer months. He liked to sit and watch his fellow primates and caregivers as they went about their chores of caring for and comforting the sanctuary animals. People remarked that he looked depressed, but he had had a sad life, courtesy of animal researchers at the Salk Institute.

The public should know that research in the name of science leaves behind tortured and broken bodies. When researchers talk about inflicting harm on animals as a necessary evil in research, the evil is real enough, and the research had better be necessary. **AV**

Ongoing Renovation

Animals in Veterinary Medical Education

By Lara Marie Rasmussen, DVM, MS, Diplomate, American College of Veterinary Surgeons Member, Program Committee for the AAVMC Educational Symposium 2006

For those who have not walked through all of its rooms, the house of veterinary medical education is often shrouded in mystery. To continue this metaphor, it shares similar rooms with other academic houses and also has many novel rooms of its own. It possesses the furnishings of such homes as private business, agriculture, scientific research, and others. And like many homes, it is occupied by families like yours and mine, made up of people like you and me with our respective aspirations, talents, challenges, biases, and baggage. I'd like to take you on a guided tour through this mystery house as it currently exists (admittedly with the bias of my own perspective.) Often an understanding of something leads to empathy, which then leads to constructive relationships and a better place to live.

Veterinary Medical Education Defined

Veterinary medical education strives to create or enable the development of veterinary professionals capable of fulfilling their oath to improve animal health and well-being, thereby serving this planet and all of its occupants in many tangential ways. The requisite learning falls into many categories, some more concrete than others, but all valuable and necessary for educational success and professional progress.

- Veterinary medical knowledge
- Physical performance skills
- Moral/ethical development
- Interpersonal skills
- Interspecies skills
- Lifelong learning skills
- Business aptitude
- Scientific development

The end product of these learning categories is the veterinary professional in successful, medically-oriented interactions with animals. In pursuit of this result, animals necessarily must play a role in

the educational development of veterinary professionals.

Animals in Learning Environments

Often the phrase used to discuss the existence of animals in our educational arenas is "animal use." I will purposefully refrain from using this phrase because it is burdened with connotations of various dimensions that get in the way of intelligent discussion of the role animals play in the education of quality veterinary professionals. (It seems a trivial thing, but words are powerful.) The concepts of *beneficial* and *detrimental* are helpful to me when considering this topic. Most of the time we think about beneficial and detrimental *to animals*; I also include beneficial and detrimental *to the learner, the teacher, the institution, the profession, and the community.*

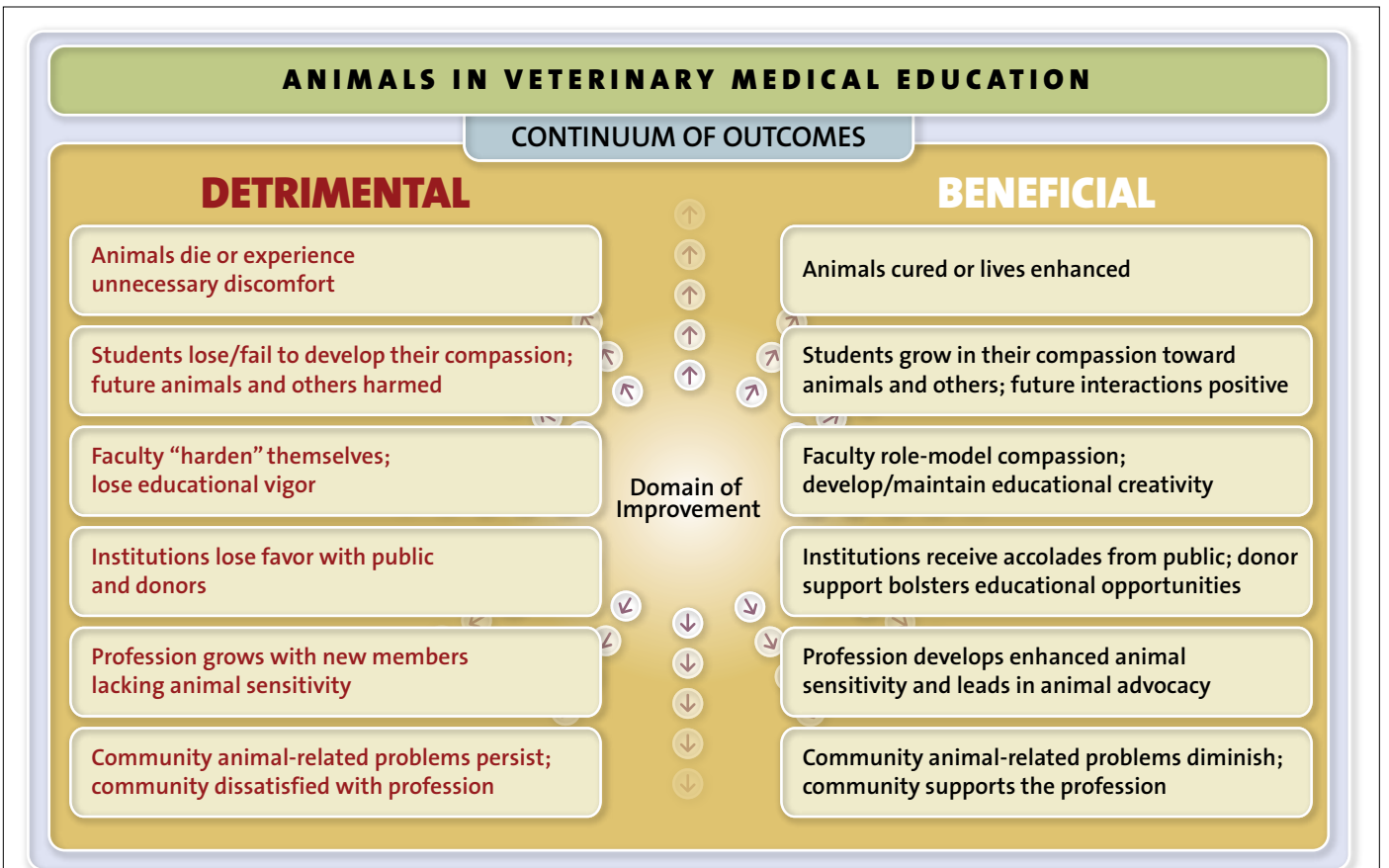
The figure on page 25 shows that, in the current state of veterinary medical education, the entire spectrum of beneficial and detrimental interactions exists. Animals are involved in learning events that are, on balance, beneficial or detrimental to those

same animals, the students who are partaking of the experience, the faculty delivering the event, the host institution, the quality of the profession, and the health of the larger community.

There are many vehicles used to track the roles animals have in the educational environment. Some exist for the purpose of ensuring compliance with laws, others maintain our awareness of the current state of educational practice, and still others seek to highlight or shame institutions and their methods, with the goal of effecting change. All of these are valid reasons for monitoring, and all must be interpreted in light of their respective biases and data collection methods.

Trends

With this tracking of educational practices, we can notice trends in how, where, and why animals are in learning environments. What is behind this trending? Or taken more broadly, why do we trend? Merriam-Webster says to trend is "to veer in a new direction; to become deflected; to shift." People will have varying opinions depending



on perspective or personality, but I think we have trended in the *beneficial direction* because institutions and their people have been forced to or have chosen to move. The directive *forces* have been financial and time constraints, public/peer/organizational pressure, and embarrassment or shame. The proactive *choices* have been made out of best-evidence review of educational methods, the setting of higher goals and aspirations, always wanting to do better, and trying to (scientifically) investigate unexplored areas and methods.

Now, think about your own personal response to and feelings about doing something you were forced to do versus doing something you chose to do for the above reasons. If you look inside yourself, I suggest that the former is likely to have created resentment and less than exciting, bare-minimum product; the latter a sense of fulfillment and a creative, abundant product.

Some of the issues that have forced people or inspired peoples' choices to move animals in education to the beneficial column have been:

- Recognition of the need for lifelong learning skills;

- Overwhelming bank of knowledge needed by the veterinary medical professional;
- Growing list of clinical procedures expected of the veterinary medical professional;
- Larger sphere of responsibilities bestowed upon the veterinary profession;
- Impact of education on the full-spectrum development of the learner;
- Positive outcomes perceived from mutually beneficial and collaborative relationships;
- Desire to create publicly appealing ventures that bring private money to education;
- Institutional oversight and "sunshine" policies;
- Political/legal activity on animal issues;
- Enhanced widespread communication techniques; and
- Development and validation of new, constructive education methods and technologies.

In many cases, the instigators of change have been students themselves,

OUR LIVES ARE NOT DETERMINED BY WHAT HAPPENS TO US BUT BY HOW WE REACT TO WHAT HAPPENS, NOT BY WHAT LIFE BRINGS TO US BUT BY THE ATTITUDE WE BRING TO LIFE. A POSITIVE ATTITUDE CAUSES A CHAIN REACTION OF POSITIVE THOUGHTS, EVENTS, AND OUTCOMES. IT IS A CATALYST, A SPARK THAT CREATES EXTRAORDINARY RESULTS.
ANONYMOUS

faculty, administrators, task force members of new veterinary schools, foundations seeking to influence with their financial contributions, and lobbying forces working in the legislative arena. The early 1990s brought about a slow but steady student movement against detrimental learning experiences in surgery and physiology courses (The Ohio State University, University of California—Davis, and Tufts University). The mid-1990s saw the introduction of landmark bills forcing the re-structuring of animal standing in our society (California's Hayden Bill and the federal Pet Theft Act and Chimpanzee Health Improvement, Maintenance, and Protection Act). In the late 90s, a new veterinary school

was founded with a proactive message promising beneficial experiences involving animals in learning settings (Western University of Health Science, College of Veterinary Medicine—Reverence for Life founding principle).

In 2000, educational grants from several large foundations showed a clear dedication to high quality learning without harm (Bosack and Kruger Foundation; Maddie's Fund). And midway through this decade we have many individual faculty members and private groups working hard creating learning tools with multidimensional benefit.

All of the above issues and instigating factors are valid and necessary instruments of change. It is our response to them that creates an environment where the profession is either forced to change or given the freedom to change. Many professionals in the field of veterinary medical education are working within the realm of being forced to change, and the outcomes of their efforts reflect this. The change is slow and the true motivation lacking. The change often reeks of apology and longing for the 'old way.' The exciting and motivated change is coming from those stepping out into a less constrained world, working with what they have been given, and providing positive proof for their progressive methods. Most professionals believe that we should walk in the 'beneficial column' always, wherever possible, and they are trying to get there.

Most professionals also recognize the need to balance the risk and the benefit involved in the change. If we concentrate our attention on one player on our list of impacted parties (see figure), we may lose ground with another. An example of this situation is that the reduction, refinement, or replacement of animals in learning will result in unqualified or dangerous veterinary professionals who cause harm to exponentially more animals in their future. It is a valid concern and must weigh heavily on the minds of educators 'guarding the gates' of the profession.

"The needs of the many must outweigh the needs of the few...or the one." Mr. Spock of *Star Trek* fame illustrated the above concern with this statement. It is this statement that helped many of us arrive in our current roles in veterinary

AAVMC Educational Symposium

- Teaching Clinical Procedures to Veterinary students: What are the Best Ways to Learn?
- Animals in Veterinary Medical Teaching: Compliance and Regulatory Issues
- Alternatives to Animal Use in Veterinary Education: Reduction and Replacement
- Evaluation and Critique of Models and Alternatives
- Obstacles Associated with Organizational Change
- Teaching Surgery to the Veterinary Novice
- Survey of Animal Use in Veterinary Curricula
- Best Practices: Refinement
- Achieving Similar Goals: Building Bridges with the Animal Protection Community

medicine. But balance must be sought if we recognize that the needs of the few, or the one, affect us all and impact who we are as people. So we continue to seek the balance and to achieve the goal of all parties, animals, students and community alike, receiving the benefits of animals in veterinary medical education.

AAVMC Educational Symposium 2006

The AAVMC (Association of American Veterinary Medical Colleges) Educational Symposium is both a response and a proactive effort toward the issue of animals in veterinary medical education. The program committee has crafted an agenda that speaks to many of the above ideals and creates an environment for open skepticism and creativity-on-display. The participants come from veterinary academia, educational academia, private business, animal protection, corporate consulting, and United States and International governments. The themes are far-reaching and optimistic and geared toward inspiring constructive choices for the future.

The Future

The AAVMC Educational Symposium is a major, official step toward opening dialogue on the role of animals in veterinary medical education. It will have succeeded if the proverbial light bulbs go on during sessions and there is rumbling in the hallways between sessions. It will have succeeded if attendees swap e-mail addresses and send their curricula or potential projects to each other. Perhaps

the greatest measure of success will be the narrowing (just a little bit) of the rifts among so many people concerned for the improvement of animals' lives.

So ends our tour of the house of veterinary medical education. Progress is being made toward beneficial outcomes for the animals, people, and institutions involved. Perhaps the mystery is not so mysterious any longer, or, more simply, the willingness to discover good behind that mystery has been enhanced.

The Alternatives Research & Development Foundation is proud to be a primary co-sponsor of AAVMC Educational Symposium 2006, entitled The Use of Animals in Veterinary Medical Teaching. The Symposium will be held in Washington, DC, March 9-10. AV

"...THE BAPTISM OF THE FATHERS DOES NOT GUARANTEE THE CONSECRATION OF THEIR CHILDREN; AND THE REPUBLIC CAN BE KEPT TRUE TO ITS IDEALS ONLY BY THE DEVOTED EFFORTS OF EACH SUCCEEDING GENERATION. THUS IS IT THE PRIVILEGE OF THE QUIET SCHOLAR, WHO SEES AND SPEAKS THE TRUTH, TO SHAPE FROM HIS STUDY THE POLICY OF NATIONS AND THE COURSE OF HISTORY."
JACOB GOULD SCHURMAN, 1900

Changing the Way You Learn™

The concept of Rescue Critters!® brand mannikins came from the realization that there was a lack of training mannikins to teach people pet first aid skills. Rescue Critters, LLC is a California-based company, and it produces animal training mannikins for veterinary sciences. Craig Jones is the President of Rescue Critters, LLC, and the man behind the idea. By putting his expertise in medicine to work, as well as the special effects skills of others, and by asking lots of questions of the veterinary educational community, Rescue Critters! brand mannikins became a reality in 1998.



Early on, Jones noticed that not only was there a lack of mannikins for pet first aid, but also an absence of training devices and mannikins for veterinary education. The company then branched off into more advanced veterinary mannikins such as K9 "Critical Care Jerry" and the cat mannikin, "Critical Care Fluffy." All of Rescue Critters! mannikins are made for initial skill acquisition.

In explaining his company's motive, Jones explained, "Our goal as a company is to refine, reduce, and replace animals in veterinary instruction and educational training."

In early 2002, a new product was launched, "Lucky," a life-sized horse, to train search and rescue techniques. In 2004, two more new products became available, the IM & SubQ Injection Pad and the Suture Patch. In 2005, Rescue Critters, LLC premiered its latest endeavors, the K9 BreathSound/HeartSound simulator and Hoof Trainer. Jones and the Rescue Critters! staff are always looking for new ways to serve the community with their innovative products.

In just a short period of time, Rescue Critters! brand mannikins are used throughout the United States, and sales continue to grow all over the world. Rescue Critters! brand mannikins are used in Japan, Australia, New Zealand, the United Kingdom, Sarajevo, Israel, Germany, Italy, Bosnia, Chile, China, and Malaysia, to name just a few. AV

To learn more about Rescue Critters, LLC – USA, please visit www.rescuecritters.com or call (818)780-7860. Also, Animalearn has many Rescue Critters! available for loan through The Science Bank. For more information regarding The Science Bank, please visit, www.Animalearn.org or call (800)SAY-AAVS.



USDA BANS CERTAIN ANTIBIOTIC USE IN CHICKENS

The United States Food and Drug Administration (USDA) has recently announced that it is pulling its approval of the use of Cipro and other fluoroquinolone antibiotics in chickens who are raised for food. The reason for the ban is due to the connection discovered between antibiotic use in farm animals and antibiotic resistance in humans. Despite repeated concerns regarding this issue that were presented numerous times to the USDA, it took the government agency five years to make this decision. This is the first time the USDA has ever decided to withdraw approval of certain antibiotics for human health reasons.

The USDA came to this conclusion after conducting a study observing the effectiveness such drugs have on humans who regularly consume chickens who are treated with the fluoroquinolone class of antibiotics, which include Cipro and Baytril. They found that people who consume these chickens and their by-products, such as eggs, experience some resistance when using Cipro. Apparently, the USDA determined that the link between antibiotic use in chickens and antibiotic resistance in humans was too significant to continue to ignore. The ban went into effect on September 12, 2005. **AV**

Fossey Fund Making Great Strides for Gorillas

The Dian Gorilla Fossey Fund International and the Democratic Republic of Congo (DRC) have recently made some interesting and positive discoveries about the eastern lowland gorilla, also known as Grauer's gorilla. Based on their research, the Fossey Fund and the DRC have estimated that there are about 5,500 to 28,000 of these gorillas living in an area of approximately 21,000 square kilometers. It was originally believed that there were far fewer Grauer's gorillas.

The Fossey Fund is a conservation program that began in 2001. The organization is dedicated to the conservation and protection of gorillas and their natural habitats in Africa through research, education, conservation action, and partnerships. In 2003, the Fossey Fund, partnered with Conservation International, led the project to rehabilitate the Maiko National Park. The Fossey Fund frequently works in conjunction with community-based preserves of the DRC to establish a Geographic Information Systems & Remote Sensing Regional Outreach Center at the National University of Rwanda. Although the organization is based in Atlanta, Georgia, it also has the Karisoke Research Center located in Rwanda, and a team of scientists and anti-poaching patrols in the Volcanoes National Park. For more information about the Fossey Fund, please go to www.gorillafund.org. **AV**



Mexico Takes Measures to Prepare for Monarch Migration

Mexico may be experiencing a surge in monarch butterfly migration, if history is any guide. Last year there were fewer than 23 million butterflies who survived long enough to leave their North American habitats, but this year it is estimated that as many as 200 million may migrate to Mexico. "In the past, very low numbers have recuperated and produced surprisingly high populations," said José Bernal, Director of Inspection for Mexico's Environmental Protection Agency.

The monarchs' annual journey to Mexico is approximately 3,400 miles from the forests of Canada and the United States. The migration typically begins in the beginning of November and ends sometime in December.

Mexican officials take the protection of the monarchs and their migration very seriously, putting in place several safeguards to protect the butterflies and their habitat. Federal agents and police officers are designated to regularly patrol monarch wintering grounds in an attempt to prevent illegal logging, a common problem in Mexico.

To further their mission, authorities have established checkpoints along neighboring highways so that they may seize any timber that is illegally leaving such areas. This year the country has added a 15-person police force to guard the areas where the monarchs reside. However, despite these efforts, authorities are not relaxing on the issue. "This by no means put us in the position of being calm," said Hector Gonzalez, Deputy Prosecutor for Natural Resources, "Reduction and complete eradication of deforestation remains a permanent goal." **AV**

U.S. CORPORATION DEVELOPS HUMAN ORGAN TESTING ALTERNATIVE

The Hurel Corporation has recently announced its development of a miniature device called the Hurel cell which would simulate the inter-workings of human organs including the liver, kidney, and stomach. The mechanism is intended to be used for drug testing and could eventually lead to a vast reduction in the number of animal experiments conducted. Animal experimentation has been the cause of much debate over the years, as 100,000,000 animals are used in testing and research each year. While this new invention would not eliminate animal use entirely, it is a giant step toward the significant reduction of animal-based experiments and testing. "At the moment a wide range of animals is used to test toxicity. Most tell us nothing about how a human might react," stated

Professor Leslie Benet, chairman of the science advisory board for Hurel.

In the past, scientists have expressed doubt regarding the use of human cells to test the effectiveness of drugs because results may suggest minimal toxicity but do not necessarily indicate the possibility of chemical by-products that could cause damage to other organs in the body. This is not a concern with the Hurel cell. The device contains organ derived cells that are held in 'trenches' of different fluid channels. The desired drug is then added to one of the cultures, and the resulting different chemical reactions are monitored. The plan is to continue to develop and market the new invention, and aims for commercial use in one year. **AV**

FDA Falls Short with Mad Cow Testing Procedures

Mad cow disease, also termed bovine spongiform encephalopathy (BSE), is a fatal disease that eats holes in the brain, causing memory loss and erratic behavior, leaving its victims, human or otherwise, loss of all ability to communicate or care for themselves until death. Mad cow disease has killed more than 150 people worldwide.

The disease is spread to humans through the consumption of the flesh of an animal who has eaten feed containing remnants of an infected animal. The Food and Drug Administration (FDA) has various 'safeguards' in place in an attempt to prevent this disease from spreading, but recently some government investigators have determined that these 'safeguards' are flawed at best.

"If FDA's testing program is not catching violations, and catching them in time, that needs to be corrected immediately," stated Senator Tom Harkin (D-IA), in reference to a report at the Government Accountability Office issued recently.

Investigators found that in half of the feed samples analyzed, the FDA took more than a month to determine whether banned cattle protein was present. Since cattle feed is usually consumed

quickly after it is produced, it is likely that some of the feed was used before the test results determining safety were in. Investigators also found that the Government Accountability Agency apparently requires no documentation of its findings, and the FDA is often slipshod in overseeing the testing program. **AV**



SCIENTISTS TO DO PRIMATE RESEARCH IN KENYA

Due to the increasing awareness and public scrutiny of animal research, scientists in Europe and North America are considering Kenya as a new prime location for their scientific ventures.

Animal rights advocates argue that animals used in research are subjected to needless pain and suffering without effectively making scientific strides. We feel that alternative testing and research methods that do not involve the use of animals, and often prove more accurate in their findings, should be used instead.

By transferring their studies to Kenya, scientists can avoid scrutiny from those who question the validity and necessity of animal research. Additionally, they can also benefit a great deal financially. On average, primate research in Kenya is about 10 times cheaper than it is in Europe or North America. Also, researchers are paid approximately four to six times less than those who are equally qualified in other countries. **AV**



One act of kindness can be your legacy, too.

Nearly 125 years ago, AAVS was founded by social visionary Caroline Earle White. Knowing that small acts of kindness can make a difference for animals, she tirelessly worked to improve the lives of those who were in need of loving homes, labored on city streets, and suffered in laboratories.

Make her legacy yours.

You can help ensure that Caroline Earle White's vision and the work of AAVS continues far into the future. For information on estate planning and becoming a member of the Caroline Earle White Society, please contact Heather Gaghan at hgaghan@aavs.org or (215)887-0816.



MEMBERS

Tributes

In memory of Autumn the chicken and Cranberry the turkey.

Cherie J. Anderson, Carmel, IN

In loving memory of Mel who always reached out to us, playful, comforting, inquisitive, communicative. Mel, you were our tuxedo cat, but we were also your humans with our laps and brushes awaiting your regal grace. We miss you so much and hope you are at peace.

Juanita & Joe Neilands for Dianne Seaborg & Tor Neilands, Berkeley, CA

In memory of Jack Rabbit, the most incredible animal I have ever met

Robert F. Lukasiewicz, Brewerton, NY

In loving memory of Harry Korr

Edna M. Korr, New York, NY

In memory of Peanut who was in such sad shape when I took you from the shelter. It was wonderful to watch you blossom for a happy and safe two years.

Marilyn B. Meyers, Washington, DC

AAVS Memorial Fund

This is a new and unique way of paying tribute to kindred animals and animal lovers while making a gift in their name to help stop animal suffering. All AAVS memorial gifts are used for continuing our mission's work of ending the use of animals in biomedical research, product testing, and education.

Memorial donations of any amount are greatly appreciated. With a donation of \$50 or more, your memorial will also be acknowledged in a special recognition section of AAVS's Annual Report. At your request, we will notify the family member or other individual you have remembered as a memorial gift to AAVS.

Message to Members

Education is important for everyone. It helps to shape individual personalities and offers endless opportunities to create unique perspectives on our world. For nearly a decade, AAVS has been able to offer these opportunities to educators and students of all ages around the globe through Animalearn and its free dissection alternatives provided through The Science Bank.

Animalearn is making changes for animals. You have read about some of them in this issue of the *AV Magazine*. Please remember that when you provide your generous support through memberships and donations to AAVS, you are also supporting Animalearn and its fantastic work with those individuals and groups who strive to make their learning experience as humane and compassionate as possible.

We are always grateful for the support of our members and contributors as it helps programs like Animalearn grow and expand its mission towards reaching our goal of ending the suffering of animals.

Sincerely,

Heather Gaghan
Assistant Director of Development & Member Services

hgaghan@aavs.org
(215)887-0816



Caroline Earle White Society

PLANNED GIVING
ENSURING YOUR VOICE CONTINUES
TO BE HEARD FOR THE ANIMALS

Over the years, many of our members and supporters have made provisions to include AAVS in their wills, trusts, life insurance policies, and retirement accounts. Making a planned gift to AAVS is one of the most powerful ways you can help us to reach our goal of ending the use of animals in biomedical research, product testing, and education. To recognize the thoughtfulness and generosity of those who have chosen to provide for AAVS in their estate plans, we have created The Caroline Earle White Society, named in honor of our founder. If you are interested in becoming a member of The Caroline Earle White Society please contact Heather Gaghan, Assistant Director of Development & Member Services at (215)887-0816.

Please send me information on the benefits of supporting AAVS through planned giving.

I have provided for AAVS through my will, retirement plan, life insurance policy, and/or other planned gift.

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Attn: Heather Gaghan
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Jenkintown, PA 19046



ARDF CO-SPONSORS FIFTH WORLD CONGRESS ON ALTERNATIVES Europe continues to lead in Alternatives development

From August 21-25, 2005, several hundred scientists, along with government regulators, educators, information specialists, and advocates for animals from all over the world met in Berlin, Germany for the Fifth World Congress on Alternatives and Animal Use in the Life Sciences. As an early and generous U.S. Sponsor, the Alternatives Research & Development Foundation helped to ensure a successful event.

Held every three years since 1993, the World Congresses are the largest meetings of their kind, and are centered on information exchange and policy discussions in order to advance the Three Rs: to replace, reduce, and refine animal use in science.

World-renowned primatologist Jane Goodall delivered the inspiring opening speech. Minutes before, she had endorsed a resolution crafted by international animal protection groups, including AAVS and ARDF, to end the use of non-human primates in biomedical research and testing. Many other scientists at the Congress followed her lead and signed the Resolution over the next few days.

The European setting of the Congress made it possible for some of the world's leading experts on alternatives to fully participate and share information on state-of-the-art methods with colleagues and advocates. Europe is well known for its advances in alternatives, born of the necessity to comply with laws that have enacted outright prohibitions on certain types of research, such as the ban on cosmetics testing that is scheduled to go into effect in 2011. The European Centre for the Validation of Alternative Methods (ECVAM), along with in-house research departments from virtually all of the companies that will be affected by

the ban, presented dozens of workshops and scientific posters that describe alternative methods for assessing safety risks from new consumer products.

Following the World Congress, news from Europe continued to be encouraging. In October, it was reported that Europe's controversial REACH program (Registration, Evaluation and Authorization of Chemicals), which, like the HPV program in the U.S., initially threatened to use tens of millions of animals for testing, will not

the principles of the Three Rs, they will now proceed with concrete activities to implement consistent use of alternatives to the use of animals, following a timetable, and facilitated by strong and diverse leadership.

Turning attention away from Europe, World Congress organizers decided that the growing prominence of animal research in Asia suggested that it was time for the Congress to engage those countries in active commitment to alternatives. In addition, rapid

technological advancements indicate a need for more

frequent meetings. As a result, Congresses will be held every two years rather than three, and the Sixth World Congress will be held in Tokyo, Japan in 2007 and is expected to stimulate much interest there **AV**.



progress as aggressively as originally planned. Rather, a more limited group of chemicals will be selected for testing based on risk of exposure. Further refinements to the program are likely.

In November, reports from Brussels on a smaller scientific and regulatory conference called "Europe Goes Alternative" told of a historic agreement between the European Commission and all major industry sectors that have traditionally engaged in animal testing. Building on their past declaration of commitment to



If you are interested in learning more about how to help animals used in education, please check out these valuable resources, which will broaden your knowledge on this important topic that affects millions of animals annually.

WEBSITES

www.Animalearn.org

Animalearn's online hub for educators, students, parents, activists, and others who want information about dissection and humane education. The site provides access to our free loan program, The Science Bank.

www.cutoutdissection.org

This resourceful People for the Ethical Treatment of Animals (PETA) site offers a wealth of general dissection facts and great ideas for students and activists who want to cut out dissection and more.

www.dissectionalternatives.org

Physicians Committee for Responsible Medicine (PCRM) created this site to assist students and teachers who want to obtain more humane methods of learning and teaching science.

www.frogsarecool.com

Frogs Are Cool is a support group for students seeking alternatives to dissection. They are based in Vancouver, BC, but the information on this site is helpful for students worldwide!

www.dissectionchoice.org

The University of Illinois, Urbana Champaign (UIUC) student animal rights group Students Improving the Lives of Animals (SILA) created this website as a resource to help other college students who want to implement student choice policies. SILA was able to pass a student choice policy at UIUC in 2005.

www.interniche.org

An international organization that supports progressive science teaching and the replacement of animal experiments by working with educators to introduce alternatives and with students to support freedom of choice.

www.learningwithoutkilling.org

An online resource for students seeking

helpful information about humane educational alternatives.

www.vetmed.ucdavis.edu/Animal_Alternatives/dissalts.htm

University of California, Center for Animal Alternatives website offers a wealth of animal alternative resources that can be found through a searchable database. Especially helpful for veterinary and medical students.

<http://altweb.jhsph.edu/dissection.html>

Altweb, the Alternatives to Animal Testing Website, was created to serve as a gateway to alternatives news, information, and other helpful resources. The site offers classroom materials for teachers and answers general dissection questions for students.

BOOKS

Animals in Education

by Lisa Ann Hepner

This is a great book for anyone who needs general facts and figures about the use of animals in education.

from Guinea Pig to Computer Mouse

by Nick Jukes and Mihnea Chiuiu

This comprehensive guide lists over 500 humane alternatives to animal experimentation and dissection for a wide range of subject areas and educational levels. (Available through AAVS.)

The Use of Animals in Higher Education

by Jonathan Balcombe, Ph.D.

Presents evidence and arguments in favor of using humane alternatives in the higher education classroom. (Free downloadable PDF of this book is available at www.hsus.org.)

Vivisection and Dissection in the Classroom

by Gary Francione and Anna Charlton

A legal guide for students who want to know their rights regarding student choice. (Available through AAVS.)

PERIODICALS

"Reaching for the Future: The Evolution of Humane Science Education," *AV Magazine*, Fall 2002.

"Higher Learning? Vivisection in High Schools, Colleges & Universities," *AV Magazine*, Summer 1999.

"Dissecting Dissection," *AV Magazine*, Summer 1996.

LITERATURE

Animalearn Resource Kit

Comprehensive dissection pack for educators and students who are interested in learning about humane educational science products. Includes a copy of The Science Bank catalog.

Dissection & Students' Rights

This brochure is a wonderful resource for students of all ages who want to say no to dissection.

Student Advocate: Making a Difference for Non-Human Animals in Colleges and Universities

This helpful guide provides ideas for college students who want to conscientiously object to harmful animal use in their courses.

The Science Bank: Education for the Future

Animalearn's free loan catalog of humane science educational products.

VIDEOS

Alternatives in Education

InterNICHE produced this video, which demonstrates how effective humane methods used in teaching subjects like anatomy, physiology, and surgery can be. (Available through AAVS.)

Classroom Cut-ups

This undercover investigative PETA video reveals the truth about the sources of animals dissected in America's classrooms. **AV**

Empowered Students Need to Know!



**Learn more about a student's
right to opt for alternatives
over dissection.**

**Request your free Dissection &
Students' Rights brochure today!
Call (800)SAY-AAVS.**

The American Anti-Vivisection Society
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