

MILLION-DOLLAR BABY

FOUNDATION BRINGS BIG BUCKS TO THE SEARCH FOR A NONSURGICAL SPAY/NEUTER SOLUTION

I t can't buy you love, and it may be the root of all evil, but money can get things done. It might, in fact, spur a solution to pet overpopulation and the untimely deaths of millions of cats and dogs around the world.

That's the hope of the Found Animals Foundation, a Los Angeles-based nonprofit founded by billionaire spinal surgeon Gary Michelson that focuses on ending pet homelessness. In 2008, the foundation announced an eye-popping brass ring: \$25 million to the first entity to develop a low-cost, single-dose, nonsurgical method for permanently sterilizing cats and dogs. The Michelson Prize and Grants in Reproductive Biology made another \$50 million available for related research.

The stakes are high—but not just for researchers. While conventional spay/neuter surgeries have had a tremendous impact on reducing euthanasia rates in the U.S., 3 to 4 million cats and dogs are still put down for lack of homes. In many areas, feral cats are still caught in an endless cycle of breeding and competition for

food. A sterilant that can be deployed in the field and that doesn't require hours or days of recovery time could enable local animal groups to break that cycle with less money and fewer volunteers. In developing nations, where hundreds of millions of street dogs eke out an existence, the lifesaving possibilities are even greater. While traditional trap-neuter-return programs can stabilize populations when practiced on a large scale, local governments too often rely on stopgap, inhumane control methods, such as poisoning, drowning, or electrocution.

Found Animals executive director Aimee Gilbreath believes a nonsurgical sterilant—whether an injectable, a pill, or a medical device—will be a reality in this decade. Even a product that works on only one species could still be brought to market with great benefits, she notes. In this edited interview with The HSUS's James Hettinger, Gilbreath and Shirley Johnston, a veterinarian and former researcher who is also with Found Animals, discuss the progress to date—and the promise for the future.

What was the genesis of the Michelson program?



GILBREATH: When Michelson got interested in how to keep so many pets from being euthanized in shelters, he realized that affordability and accessibility of spay and neuter were an issue. He started thinking that technology has got to have a solution to this that is non-surgical, affordable, and easy to deploy in a field setting.



JOHNSTON: There has never been such an amount of money available to study dog and cat reproduction. Our program is trying to get the word out to not only scientists who have worked in the field of dog and cat reproduction, but also people who work on basic cellular mechanisms, people who work in human reproduction. To date we've approved about 15 proposals.



How affordable do you think the sterilant will be?

JOHNSTON: One of the requirements for winning the prize is that it has a reasonable manufacturing cost. We hope that it will be in the neighborhood of \$5 to \$10 [per dose] when manufactured on a large scale.

Are the obstacles scientific problems or a lack of research funding?

GILBREATH: It's probably a combination. Nonsurgical products for humans are out there. I have no doubt that it is technologically possible to do it for pets. I have to think that a lot of it has been technology and funding to really motivate people to apply cutting-edge technology to the issue.

JOHNSTON: It's not easy to completely disable the reproductive systems. I've worked in dog and cat reproduction for nearly 40 years now, and people have done good research in trying to find safe contraceptive agents. But in my career at universities, you would scramble to get a \$10,000 to \$50,000 grant, and now we are making available a quarter of a million dollars a year for three to four years. We've really had some quite brilliant proposals come in that we think may be able to solve this challenge.

Do you think you'll find what you're looking for?

JOHNSTON: I'm really optimistic. Initially, I thought it was like saying to somebody, "Oh, we'll give you \$25 million to turn lead into gold." But I have since come to recognize that in the last 10 to 15 years, science has advanced on so many fronts that now I really do believe we're going to award this prize.



A nonsurgical sterilant could make a world of difference for the hundreds of millions of stray dogs around the globe. Too often, local governments deal with overpopulation through poisoning, electrocution, and shooting.

The Quest for the HOLY GRAIL

A look at three researchers vying for the Michelson Prize

TRICKING THE IMMUNE SYSTEM Michael Munks heard about the Michelson Prize and Grants not through a science journal or a grants website, but while watching *Saturday Night Live*. "They were making a joke about how the cats and dogs had put together [\$80] million to hire a hit man to take out Gary Michelson," says the immunologist with National Jewish Health in Denver.

Munks was more intrigued than amused. In late 2009, he received a \$733,000 grant for a study involving immunocontraception: fooling the immune system into deactivating part of the reproductive system. He'll use the money to research whether a herpes virus can lead to a dog and cat sterilant.

UNINTENDED BENEFITS Information about the Michelson project "stuck someplace at the back of my head," says Crinetics Pharmaceuticals' Scott Struthers. Eventually, Struthers realized there could be a connection with his firm's work on an anti-ovarian cancer drug, which can render women sterile. While sterility wasn't an intended side effect for its human applications, Struthers wondered about the possibilities for dogs and cats. He received \$1.4 million to research the possibilities.

In a time when funding is tight, Struthers credits the Michelson program with catching the eyes of researchers "who are normally just thinking about humans, and making them think about what they can do for our pets."

SEEKING A "MAGIC BULLET" Normally, William Ja uses fruit flies to study human aging, nutrition, and disease. Now, with a \$206,000 Michelson grant, the assistant professor at Scripps Research Institute in Jupiter, Fla., is working on a spay/neuter "magic bullet" (technically known as a toxin-ligand conjugate) that would target crucial reproductive cells in cats and dogs.

It's a daunting task, but Ja is confident that someone will devise at least a partial solution. "I think it should be doable, given the examples of sterility that occur in nature," he says. "... And certainly this giant load of cash will help the field greatly."