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INDEPENDENT REGULATORY
REVIEW COMMISSION

March 15, 2007

Ms. Mary Bender, Director
 Bureau of Dog Law Enforcement
 The Department of Agriculture
 2301 North Cameron Street, Room 102
 Harrisburg, PA 17110-9408

Re: Dog Law Enforcement, Proposed Regulation #2-152 (#2559)
 Pennsylvania Department of Agriculture

Dear Ms. Bender:

Please accept this letter as my formal comment on the proposed Pennsylvania Dog Law regulations as published in *The Pennsylvania Bulletin* on December 16, 2006. I submit these comments as a veterinarian, a veterinary behaviorist and director of the Behavior Clinic at the Matthew J. Ryan Veterinary Hospital of the University of Pennsylvania, a member of the faculty of the School of Veterinary Medicine of the University of Pennsylvania, and as an appointed representative of PA biomedical and veterinary research institutions, including the School of Veterinary Medicine.

As a representative of biomedical research institutions, I agree with and would like to repeat and emphasize the comments already submitted by John S. Ellis, PhD on behalf of the Pennsylvania Society for Biomedical Research (PSBR). Specifically (Dr. Ellis' comments *italicized*):

Biomedical Research facilities, defined as "Research Kennels" in Pennsylvania Dog Law P.L. 284 No. 225, and which represent less than 1% of all kennels licensed in Pennsylvania, are unique in their nature and housing requirements when compared with other kennels such as breeding or boarding.

- *In many cases, due to the requirements of the scientific protocol, "one-size fits all" standards will not work for research facilities.*
- *Proper housing of dogs at research facilities is required not only for ethical reasons but also for the quality of the science derived from them.*

- *Research facilities invest heavily not only in facility construction and maintenance but also in veterinary oversight, professional staff, and personnel training.*
- *Biomedical research facilities are registered with the United States Department of Agriculture (USDA) and, by law, **are inspected, at least once annually, without notice, by the USDA. This comprehensive inspection, unlike most other entities regulated by the USDA, must be conducted by a specially trained veterinarian.***
- ***The Federal regulations established for research facilities include many other provisions that are not required of licensed breeders, such as the requirement for an Institutional Animal Care and Use Committee (IACUC).***
 - *The IACUC is charged with overseeing all animal care at the institution and must:*
 - *Include a veterinarian.*
 - *Include a person who is not affiliated with the institution whose role is to represent general community interest in the proper care and treatment of animals.*
 - *Inspect the facility and review the program of animal care at least every six months and maintain records of these inspections for USDA review.*

Because of these unique research requirements and the multitude of animal welfare regulations currently placed on our facilities, we recommend that, as is done in other states, research kennels that are registered with the USDA under the Federal Animal Welfare Act, currently under Federal Government inspection and undergo no less than one Federal Government inspection annually, be exempt from Pennsylvania Dog Law regulations.

- *We do not believe that it is the Department's intent to regulate research kennels using the proposed regulations.*
- *We suggest that the Department add language similar to that which has been proposed in Ohio as they work on strengthening their kennel laws. Ohio Senate Bill 0342 of the 2005-2006 Regular Session states, "Medical kennels for dogs and research kennels for dogs are not required to obtain a license under this chapter or comply with any other requirements of this chapter and rules adopted under it."*
- *Without such an exemption and an adoption of the proposed regulations as published in the Pennsylvania Bulletin of December 16, 2006, research that benefits both animals and humans, conducted at academic institutions, biotech firms, and pharmaceutical companies (some of which is legally required by the FDA) will be severely curtailed or halted and improvements in animal and human health will be put at risk.*

I would also like to add comments as an academic veterinary behaviorist, as I testified during the second meeting of the Dog Law Advisory Board on March 14, 2007:

The behavior of dogs varies with breed, age, sex and experience as well as current welfare status. Dogs are highly social and intelligent animals whose welfare may be compromised if, in

addition to food and shelter, their needs for social contact and social and environmental stimulation are not met. As a behaviorist I am asked daily to determine whether a given dog's behavior is normal and appropriate. In order to make this assessment, I learn as much as I can about what the dog is doing or has done, and in response to what situation. I interview the family, observe the dog, and perform a physical examination and diagnostic tests when possible, so that I can make an assessment and recommendations regarding management of the problem. Although there is a great body of literature on animal behavior, much is still unknown and in need of study. However, we can draw upon what we do know to help guide us in rational and humane management of dogs both in pet or breeding homes and in kennel settings.

I would like to respond specifically to several comments that were presented by a representative of the Pennsylvania Professional Pet Breeders Association (PPPBA) during the House Agricultural Committee hearings on March 6, 2007, regarding the proposed changes to the dog law regulations involving increased cage size and exercise requirements. It was argued that a science-based approach was not used in making these recommendations.

A study by Hughes et al titled "The effects of cage size and pair housing on exercise of Beagle dogs", published in 1989 in the journal *Laboratory Animal Science*, was used as the basis for the following comments. I would like to respond to these critically, as I would any article in the scientific literature.

- First, the experimental design of this study was less than ideal. It used only 6 dogs, all laboratory (purpose-bred) Beagles. From what I can determine, each was assigned a specific cage environment but it appears that there was no crossover in the experimental design (movement of dogs from setting to setting for repeated measures). The authors also state that there was a high degree of individual variability in how the dogs behaved in the cages and in the pairing. Some dogs were more active than others. This individual variation is exactly why research improves with larger numbers and with randomization and crossover design so that it is not limiting one type of dog to one type of environment or cage size – in conclusion, this was not a well designed study. (It is also important to note that results of such a small study of the behavior of purpose-bred laboratory Beagles would not necessarily apply to multiple-breed, large-scale commercial breeding facilities.)
- Second, the authors of this study found that increasing cage size did not increase movement and, in fact, the opposite was true. However, they did not characterize the *nature* of the movement. The purpose of this study was to examine behavior without subjective investigator bias, via video equipment. However, measures were limited only to quantification (amount) of distance moved, and time spent moving, *not* to the nature of the movement. "Activity" may have been stereotypical. **It is well known in behavioral medicine and experimental psychology that chronic stress, lack of stimulation and confinement can lead to the development of "stereotypies", defined as repetitive behaviors which serve no obvious purpose. Stereotypies are considered by behavioral researchers to indicate generally compromised welfare, based in frustration, behavioral conflict, displacement of arousal, and a lack of the ability to**

control the environment – generally a failure to cope. Examples of stereotypes include tail-chasing, circling, pacing, wall-jumping, fly-biting and shadow-chasing. Other examples which involve a lack of movement include “freezing”, self-licking and self-mutilation or licking of inanimate objects, and stool-eating (coprophagy). Such abnormal behavior would not have been captured or identified by measures of movement alone, a point which I consider to have been most overlooked in this limited study. In other words, the finding that dogs traveled a greater distance, at a greater speed, when housed singly in a regulation-sized cage, could simply have been attributed to greater stress and resulting abnormal movement. There is an impressive body of literature addressing this issue, a well-recognized phenomenon in long-term, restricted kennel housing.

- Third, the authors contend that stress itself was an unlikely explanation for the increased movement, basing this conclusion on previous studies, because endogenous cortisol (a “stress hormone”) was not elevated. However, it is known now that cortisol measures are inconsistent and often contradictory. While acute stress conditions can result in increased cortisol, chronic stress conditions can result in lower cortisol. There are other variables which may have made results in previous studies unreliable; for example, it has been found that female laboratory Beagles are more physiologically susceptible to stress than males. It is also a fact that cortisol secretion by the adrenal gland has a circadian rhythm (varies with time of day) and varies significantly with time, as related to the stressor itself. For example, it is possible to find normal cortisol levels if they are measured too soon after exposure to a stressor. Measurement of salivary or urine cortisol is useful as an indicator of (acute) stress, but clearly must be sampled and interpreted with care.
- Fourth, although increasing cage size had little effect on exercise, the difference between initial cage sizes and larger cage sizes were small. The lack of difference in behavior may simply have been due to a statistical floor effect. **Clearly, the relationship between pen size and behavior requires further study.**

Additional responses (bolded) to the PPPBA testimony (in quotes) follow:

- “No cause/effect relationship between health and a formal exercise program or cage size could be found in previous studies.”
- **This is still considered to be unknown. The previous studies to which the author refers are a little hard to obtain – years of publication are 1972, 1975, 1977 and in storage – the definition of “health”, for example, used unspecified biochemical parameters. I would not be surprised if exercise or its lack made no difference in most biochemical parameters, just as I would not be surprised if a psychiatrically abnormal person had normal blood test results. However, there was one study published in 2006 [Spangenberg et al, “Outdoor housing of laboratory dogs: Effects on activity, behaviour and physiology”] showing a difference between dogs restricted in indoor kennels vs dogs given a choice to go outdoors to a larger kennel. The indoor dogs had biochemical differences (increased liver enzyme and a modified blood count) that were not statistically significant. However, this study used only 8 dogs; increasing the number of animals may lend enough power to the**

statistical analysis that there would be significant difference. Further study is needed.

- “Human contact – not cage size – is the single most consistent and important factor in encouraging dogs to be active. “
- **I do think this makes sense. It would also be true for social contact with other dogs, or with toys. Clearly, it is not cage size alone that increases exercise. Quality of life is measured by more than just movement. Again, it is also important to identify the *nature* of the movement – and whether it is normal or abnormal. Dogs benefit from enrichment (Wells 2003). Enrichment can be social (provision of social contacts with conspecifics and humans), and or environmental (provision of toys, cage furniture, auditory and olfactory stimulation). Chronic isolation from other dogs has been found to be detrimental to well-being (and results in abnormal behavior such as withdrawal, inactivity, stereotypy and barking, and greater physiological stress.) It has been suggested that dogs be housed in pairs or groups, a setting which, in itself, allows increased control of the environment. Human contact is important and can include petting and play. Provision of (and rotation of) toys such as chew toys, hanging chains can be very helpful. Washable “furniture” such as raised platforms can provide increased visual access to neighboring dogs, and can be used for play in group housing. Other examples of enrichment may include odors, sound (classical music) or even televisions (see review by Wells (2003).**
- “...only 5.8 – 14.6% of any day is spent in movement. *Even with people in the room, a dog will only spend 10-15 min. of the hour in activity.*” also: “dogs that are well fed and content do not exercise routinely...”
- **The relevance of this comment is questionable. It is true that normal dogs in normal housing and with access to social relationships spend a great deal of time resting. The question is whether there is *opportunity* for movement at some points in the day. The proposed changes suggest 20 min per day – the equivalent of 1.3% of the day. Exercise should be purposeful, encouraged by (when possible) social or environmental enrichment, and an accessible larger space, for at least some time per day, with other dogs or with humans. When possible, it would be ideal to have a human dedicated to providing such contact daily. I do agree with the author in regard to the need for human/dog interaction.**

As an individual and as a veterinarian I also recommend that kennel floors in commercial breeding establishments be solid, not wire, and that stacking be minimized only to the height of 5 feet from the ground, so that all kennels and their occupants can be easily monitored and examined.

Behavioral expertise is needed for monitoring and assessment of dogs housed in large-scale, commercial breeding establishments. It is not sufficient, as I have stated, to monitor movement alone or even willingness (for example) to eat. Behavioral indicators of stress can be subtle unless one is trained to recognize them. Signs may include, for example, excessive panting

and salivation, "hypervigilance" and scanning of the environment, excessive barking, appeasement and lowered postures, flat ear positions, avoidance and fear, defensive aggression, chronically dilated pupils, as well as the above mentioned stereotypies. Behaviorists understand that such expressions are biological in their basis – chronically stressed dogs are most likely to have compromised immune function and increased susceptibility to disease. A stressed mother will transmit the physiological and behavioral consequences of such stress to her offspring, starting with the uterine environment. Welfare and image are both compromised, and, for those kennels whose aim is to provide puppies to permanent homes, behavioral consequences can be dire.

In summary:

- **I support the comments submitted by the PSBR, and, along with the PSBR, recommend that research kennels that are registered with the USDA under the Federal Animal Welfare Act, which currently undergo no less than one Federal Government inspection annually, be exempt from Pennsylvania Dog Law regulations.**
- As an individual, an academic veterinarian and veterinary behaviorist, **with the above exemption noted**, I support the increase in cage size and scheduled exercise opportunity for large-scale, commercial dog breeding establishments. I also recommend a change from wire to solid flooring, and a maximum stacking height of 5 feet for kennels in large-scale, commercial breeding establishments. Such changes are intended to enhance the well-being of dogs in long-term kennel housing.

Thank you for giving me the opportunity to express these comments. I do hope that we can proceed with steps that will address these concerns and use rational steps to make life as humane as possible in commercial, breeding kennel environments.

Respectfully submitted,



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