

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF IOWA
WESTERN DIVISION**

JENNIFER FROST, an individual; and
JANE DOE, an individual,

Plaintiffs,

v.

THE CITY OF SIOUX CITY, IOWA;
ROBERT PADMORE, in his official capacity; and
CINDY RARRAT, in her official capacity,

Case No. 5:16-cv-4107

**DECLARATION OF AMY
MARDER, VMD, CAAB**

I, Amy R. Marder, VMD, CAAB, swear, state, and testify that the following facts are true and correct:

1. I am over the age of majority and am otherwise competent to make this Declaration. I have personal knowledge of the facts set forth in this Declaration. If called as a witness, I could and would competently testify to the same.

2. I have obtained my Veterinary Medical Doctorate from the University of Pennsylvania and am a Certified Applied Animal Behaviorist, pet behavior consultant, and instructor. I have conducted extensive research regarding dog behavior and the limitations of breed-specific legislation and published articles regarding the same. Attached as Exhibit 1 is a true and accurate copy of my curriculum vitae.


3. I was asked to provide a report including my opinions regarding the premise for breed specific legislation: that dogs of certain breeds are genetically alike and therefore will behave alike. I was also asked to opine on whether breed specific legislation is a rational method to reduce the number of dog bites within a community. Attached as Exhibit 2 is a true and accurate copy of my Report.

4. The basis for the opinions offered in my report is my specialized education, training, knowledge and skill in the area of canine genetics and breed identification. All of the opinions expressed in the report are opinions I hold to a reasonable degree of scientific certainty, including the following:

- a. Often the breed of individual dogs cannot be reliably determined without knowing the ancestry of an animal or viewing an accepted registration certificate. Visual identification of the breeds of mixed breed dogs is highly inaccurate.
- b. There is very little evidence supporting the assertion that breeds of different dogs differ behaviorally in consistent and predictable ways.
- c. Canine behavior is not only genetically determined but is also highly influenced by experience.
- d. The inheritance of behavior is much more complicated than morphology, and is most likely unrelated to the inheritance of morphology.
- e. Due to the complicated inheritance of behavioral traits and the powerful influence of the environment on behavior, a dog's breed is not a reliable indicator of a dog's expected behavior when assessing the risk it poses to the community.
- f. Banning certain breeds of dogs is not a rational method to protect a community from dog bites due to the extremely large number of dogs which need to be removed from a community to prevent a single incident.

5. I declare under perjury that the foregoing is true and correct.

Dated: October 27, 2016.



Amy R. Marder, VMD, CAAB

CURRICULUM VITAE
Amy R. Marder VMD CAAB
September, 2016

ADDRESS

46 Madison Avenue
Cambridge, Massachusetts 02140
617/547-8058 (o); 617/594-1020 (c)
Amy.marder@comcast.net

PERSONAL

BORN December 20, 1952, New York City
MARITAL STATUS Single

EDUCATION

UNIVERSITY OF PENNSYLVANIA, Philadelphia, PA
Bachelor of Arts in Biology/Ethology
May 1973; magna cum laude

UNIVERSITY OF PENNSYLVANIA, Philadelphia, PA
Doctor of Veterinary Medicine
May 1979; magna cum laude

GRAND AVENUE PET HOSPITAL, Santa Ana, CA
Internship in Medicine and Surgery
September 1980

UNIVERSITY OF PENNSYLVANIA, Philadelphia, PA
Residency in Animal Behavior
June 1985

HONORS AND MEMBERSHIPS IN HONORARY SOCIETIES

Dean's List (undergraduate) 1970-1973
Dean's List (veterinary school) 1975-1978
Phi Zeta (veterinary honor society) 1978

PROFESSIONAL EXPERIENCE

AMY MARDER, VMD CAAB
PET BEHAVIOR CONSULTATIONS
Lexington, MA
Pet behavior consultations, office and home consultations

UNIVERSITY OF FLORIDA Instructor Online course in Shelter animal behavior

NATIONAL CANINE RESEARCH COUNCIL Consultant

ANIMAL FARM FOUNDATION Consultant

ANIMAL RESCUE LEAGUE OF BOSTON

Exhibit 1

Director of the Center for Shelter Dogs
June 2008-August 2014

ANIMAL RESCUE LEAGUE OF BOSTON
Director Behavioral Service
July 2001-June 2008

AMERICAN SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS
New York, NY
Vice President Behavioral Medicine
March 1999-July 2001

NEW ENGLAND VETERINARY BEHAVIOR ASSOCIATES
Cambridge/Lexington, MA
Owner, Pet behavior consultations, office and home consultations
September 1985-June, 2008

ANGELL MEMORIAL ANIMAL HOSPITAL, MASSACHUSETTS SOCIETY FOR
THE PREVENTION OF CRUELTY TO ANIMALS
Boston, MA
Animal behavior consultant
Supervisor dog training classes
November 1989-1999

TUFTS UNIVERSITY SCHOOL OF VETERINARY MEDICINE
North Grafton, MA
Adjunct Assistant Professor, Department of Medicine
Associate, Tufts Center for Animals and Public Policy
September 1985-present

AMERICAN HUMANE ASSOCIATION
Englewood, CO
Lecturer on feline behavior for shelter staff and veterinarians
March 1996-1999

NOVARTIS ANIMAL HEALTH, Greensboro, NC
Clinical Investigator, "Clomipramine for the treatment of canine
separation anxiety"
August 1996-February 1997

ATTORNEY STEPHEN WISE
Expert witness on canine and feline behavior
1995-present

PREVENTION MAGAZINE, RODALE PRESS
Emmaus, PA
Writer and consultant for veterinary medicine
January 1987-2001

Exhibit 1

ANIMALS MAGAZINE

Boston, MA

Staff writer, Contributing Editor for veterinary medicine
1992-1999

SOMERVILLE ANIMAL CLINIC

Somerville, MA

Part-time associate veterinarian
March 1987-January 1995

WELLESLEY-NATICK VETERINARY HOSPITAL

Natick, MA

Part-time associate veterinarian
August 1986-February 1988

BELMONT ANIMAL HOSPITAL

Belmont, MA

Associate veterinarian
September 1985-August 1986

VETERINARY HOSPITAL OF THE UNIVERSITY OF PENNSYLVANIA

Philadelphia, PA

Resident in Animal Behavior under the supervision of Victoria Voith, DVM PhD
DACVB. Two-year program. Included clinical cases, teaching, and clinical
research. Acting director of Animal Behavior Clinic January-June, 1985

THE ANIMAL HOSPITAL

Philadelphia, PA

Part-time staff and emergency veterinarian.
January, 1985-August, 1985

DOVER SHORES VETERINARY HOSPITAL

Santa Ana Heights, CA

Associate veterinarian
July 1981- August 1983

ORANGE COUNTY EMERGENCY PET CLINIC

Garden Grove, CA

Part-time emergency veterinarian
January 1983-August 1983

VILLA PARK ANIMAL CLINIC

Villa Park, CA

Associate veterinarian
September 1980-June 1981

GRAND AVENUE PET HOSPITAL

Santa Ana, CA

14-month internship in medicine and surgery
July 1979-September 1980

Exhibit 1

ACADEMY OF NATURAL SCIENCES
Philadelphia, PA
Exhibits writer and researcher
September 1974-September 1975 and summer 1976

HAHNEMANN MEDICAL COLLEGE
Philadelphia, PA
Research assistant
October 1973-September 1974

MONELL CHEMICAL SENSES CENTER
Philadelphia, PA
Research assistant
June 1973-October, 1973.

PROFESSIONAL ORGANIZATIONS

MASSACHUSETTS ANIMAL COALITION
Board member representing animal behavior 2000-2005
Advisory Board 2005-2016.

AMERICAN VETERINARY SOCIETY OF ANIMAL BEHAVIOR
Interim past-president 2002
President-elect, 1984-1986
President, 1986-1988.

AMERICAN VETERINARY MEDICAL ASSOCIATION

ANIMAL BEHAVIOR SOCIETY

THE DELTA SOCIETY

MASSACHUSETTS VETERINARY MEDICAL ASSOCIATION

SOUTHERN CALIFORNIA VETERINARY MEDICAL ASSOCIATION
President, Orange County Chapter, 1983
Governing Council, 1983
Secretary-Treasurer, 1982
Advisory Board, Orange County Animal Shelter 1982-83.

PUBLICATIONS

Jones, S., Dowling-Guyer, S., Patronek, G.J., Marder, A.R., Segurson D'Arpino, S., & McCobb, E. Use of accelerometers to measure stress levels in shelter dogs. Journal of Applied Animal Welfare Science, 17(1), 18-28, 2014.

Marder AR, Shabelansky A, Patronek G Food-related aggression in shelter dogs: A comparison of behavior identified by a behavior evaluation in the shelter and owner reports after adoption, Applied Animal Behavior Science Applied Animal Behavior Science, 148, 150-156, 2013

Patronek, GJ., Sacks, JJ., Delise, KM., Cleary, DV., & Marder, AR. Co-occurrence of potentially preventable factors in 256 dog bite-related fatalities in the United States

Exhibit 1

(2000-2009). Journal of the American Veterinary Medical Association, 243(12), 1726-1736, 2013.

Voith, V. L., Trevejo, R., Dowling-Guyer, S., Chadik, C., Marder, A., Johnson, V., & Irizarry, K. (2013). Comparison of visual and DNA breed identification of dogs and inter-observer reliability. American Journal of Sociological Research, 3(2), 17-29.

Dowling-Guyer S, Marder AR, D'Arpino S Behavioral traits detected in shelter dogs by a behavior evaluation Applied Animal Behavior Science 130:107-114, 2011

Patronek GJ, Slater M, Marder A Use of the number-needed-to-ban calculation to illustrate limitations of breed-specific legislation in decreasing the risk of dog bite-related injury Journal Veterinary Medical Association 137, 2010

Marder AR and Duxbury M: Obtaining a pet: Realistic expectations In Horwitz D and Landsburg G ed Vet Clin North Am Small Anim Pract, 38(5), 1145-1162, 2008

Marder AR Bad, bad cats-Whatcha Gonna Do, Animal Sheltering, Jan/Feb 2008

Marder AR and Engel JR: Long-term outcome after treatment of feline inappropriate elimination, J. Appl. An Welfare Sci. 5:299-308, 2002

Marder AR: Companion animal behavior. Four-footed Friends Magazine 2001-2002

Marder AR: Animal Health and Behavior. Animal Watch Magazine, 1999- 2001.

Marder AR, Reid PJ: Treating canine behavior problems: Behavior modification, obedience and agility training. Comp Cont Educ Pract Vet 18: 975-983, 1996.

Marder AR: Diagnosing and treating aggression problems in cats Veterinary Medicine August, 1993 736-742.

Marder AR : Animal bites: Behavior modification of the offending animal. Sem in Vet Med and Surgery 6:192-198, 1991.

Marder AR: Psychotropic drugs and behavioral therapy In Marder, AR and Voith, VL ed. Vet Clin North Am Small Anim Pract 21: 329-342, 1991.

Marder AR, Marder LR: Human-companion animal relationships and animal behavior problems in Quackenbush J et al ed. Vet Clin North Am Small Anim Pract 15: 411- 422, 1985.

Marder, AR: Prevention Magazine. Your Healthy Pet Monthly popular articles on Veterinary medicine and behavior. 1984-1999

Marder, AR: Animals Magazine. Frequent writer and contributor, articles on Veterinary medicine and behavior.

Exhibit 1

BOOKS AND CHAPTERS

- Marder AR, "Intake and Behavior Assessment" in Weiss E, Mohan-Gibbon H, Zawistowsky S ed. Shelter Behavior, Wiley Publishing, 2015 In press
- Marder AR, "Behavioral Pharmacotherapy in the Animal Shelter" in Miller L and Zawistowsky S ed Shelter Medicine for Veterinarians and Staff, Ames, IA, Blackwell Publishing, 2012
- Marder AR, Posage M, "Treatment of Emotional Distress and Disorders- Pharmacologic Methods" in McMillan F ed Mental Health and Well-being in Animals, Ames, IA Blackwell Publishing, 2005
- Marder AR, Posage M, "Behavioral Pharmacotherapy in the Animal Shelter" in Miller L and Zawistowski S ed Shelter Medicine for Veterinarians and Staff, Ames, IA, Blackwell Publishing, 2004
- Marder AR, Bergman L "Drug Therapy for the Treatment of Behavior Problems in Dogs and Cats" in Hetts S Pet Behavior Protocols Engelwood, CO AAHA press, 2000
- Marder AR, Horwitz D: "Complete Dog Owner's Manual: How to Raise a Happy, Healthy Dog", United Kingdom, HarperCollins, 1997
- Marder AR: "Your Healthy Pet: A Practical Guide to Raising Happier, Healthier Pets", Emmaus, PA, Rodale Press, 1994, 1997
- Marder AR: "Inappropriate Elimination: Diagnosis and Management" in August JR Consultations in Feline Internal Medicine, Philadelphia, PA , W.B. Saunders Company, 1997
- Marder AR: "Introducing a New Cat to the Household" in Ackerman L, Landsberg G, Hunthausen W ed. Cat Behavior and Training: Veterinary Advice for Owners, Neptune City, NJ, T.F.H. Publications, 1996.
- Marder AR: "Behavior Problems". In Norsworthy GD ed. Feline Practice, Philadelphia, PA. J.B. Lippincott, 1993.
- Marder AR, Voith VL: "Behavioral Disorders", In Morgan RV ed. Handbook of Small Animal Practice, New York, NY, Churchill Livingstone, Inc, 1992.
- Marder AR, Voith, VL. ed. Advances in Animal Behavior, Vet. Clin North Am Small Anim Pract 21(2), Philadelphia, PA, W.B. Saunders, 1991.
- Marder, AR: "Behavior" In Allen DG, Kruth SA, Garvey, MS, ed. Small Animal Medicine. Philadelphia, PA, J.B. Lippincott, 1991.

SELECTED POSTERS, PAPERS AND LECTURES

Exhibit 1

Marder AR, Crawford C The medical and behavioral impact of playgroups (lecture) HSUS Expo, New Orleans, 2015

Marder AR, Bradley J The veterinarian's role in dog bite prevention (webinar) Humane Society Veterinary Medical Association, 2015

Marder AR: Understanding the behavior of shelter animals, why now more important than ever, Keynote National Council on Pet Population, Dallas, 2014

Marder AR: Food-related aggression in shelter dogs (lecture) National Council on Pet Population, Dallas, 2014

Marder AR: Food-related aggression in shelter dogs (lecture) Animal Behavior Symposium, Denver, 2014

Marder AR, Reid P, Wood L Food-related aggression in shelter dogs, diagnosis and treatment (panel) Interdisciplinary Forum on Applied Animal Behavior, Tuscon, 2014

Marder AR, Dowling S Development and Implementaion of a Unique Online Portal for Collecting Data from a Standardized Behavior Evaluation with Shelter Dogs (Poster) Canine Science Forum, 2012; Animal Behavior Society, 2013

Marder AR, Dowling S Shelter Dog Behavioral Assessments: Behavioral Coding and Personality (Poster) 7th annual International Veterinary Behavior Meeting Edinburgh, 2009

Marder, AR., & Voith, V., The American Shelter Dog: Identification of dogs by personality. Paper presented at the 7th International Veterinary Behaviour Meeting in Edinburgh, Scotland, October 2009.

"Treatment of behavioral problems in shelter animals while in the shelter and after adoption", "Evaluation of the behavior of shelter dogs", Midwest Veterinary Conference, April, 2008

"Behavior problems of dogs and cats after adoption", Rhode Island Veterinary Medical Association annual conference, December, 2007

"Behavioral problems in cats after adoption" poster International Veterinary Behavior Conference, Riccione, Italy June, 2007, presentation American Veterinary Society of Animal Behavior annual meeting, Washington, DC July, 2007

"Keeping animals in homes after adoption" American Veterinary Medical Association annual meeting, ,San Francisco, July 2006

"Behavioral evaluation training" Queensland RSPCA, Brisbane, Australia, June 2006

"A Comparison of canine behaviors in pre-adoptive and post-adoptive homes", poster International Behavior Conference, Minneapolis, 2005

Exhibit 1

“Prevalence of canine behaviors in homes” Annual Meeting, American Veterinary Society of Animal Behavior, Philadelphia, 2004

“Predictability of a shelter dog behavioral assessment test” Annual meeting of the American College of Veterinary Behaviorists, Denver, 2003, International Veterinary Behavior Conference, Caloundra, Australia, 2003

“Treatment and management of aggression in shelter animals” Annual meeting of the American Veterinary Medical Association, Nashville 2002

“The Animal Shelter as an educational and research institution” Annual meeting of the Animal Behavior Society, Bloomington, 2002

“Behavior problems in shelter dogs after adoption” Annual meeting of the American Veterinary Society of Animal Behavior, Boston, 2001, Nashville 2002

“Evaluating the behavior of pit bull terriers” Massachusetts Animal Coalition meeting. April, 2002, Tufts Animal Expo October, 2001, ASPCA November, 2000

“Are there behavioral indicators of abuse?”, Annual meeting of the American Veterinary Society of Animal Behavior, Salt Lake City, 2000

“Does aggressive behavior in the shelter predict aggression after adoption?” Annual meeting of the American Society of Animal Behavior, 1999

“Learning principles and human cat relationships”, Verhaltenstherapeutischen Gesprächskreisen, Wolfsburg, Germany. March, 1998

“Managing behavioral problems in puppies and kittens”, Friskies Petcare Symposium, Pasadena, St. Louis, Atlanta, New York, 1997

“Clomipramine for the treatment of spraying in cats”, Annual meeting American Veterinary Society of Animal Behavior, at AVMA, Reno, July 1997

“Feline behavior”, Training Academy for Animal Control Officer’s Association of Massachusetts, May 1997

“Feline behavior for shelter veterinarians” and “Preventing feline behavior problems” for shelter staff, American Humane Association Annual Meeting, Baltimore, October 1996

“Managing feline behavior problems”, “Workshops in feline behavior”, University of Minnesota Continuing Education, St. Paul, October 1996

“Managing puppy problems”, AVMA Annual Meeting, Louisville, July 1996

“Workshop on cat behavior”, Training program for shelter staff, American Humane Association, Detroit, March 1996

“Using agility training in a behavior modification program” American Veterinary

Exhibit 1

Society of Animal Behavior Annual Meeting, at AVMA, Pittsburgh, July 1996

"The behavioral effects of early spay/neuter: Planning a long-term prospective study" American Veterinary Society of Animal Behavior, AAHA annual meeting, Boston, March 1994

"Feline behavior and problems", "Evaluating shelter animals for adoption" American Humane Association annual meeting, October 1993

"Selected topics in companion animal behavior", "Feline behavior problems related to feeding" American Veterinary Medical Association, annual meeting, Boston, July 1993

"Feline elimination problems", "Feline aggression", "Psychopharmacology", Amsterdam, Holland, March 1993

"Treatment of stereotypic behaviors in dogs", annual meeting of the American Veterinary Society of Animal Behavior, July 1987

"Genetic influences on behavior", Pit Bull Seminar, Tufts Center for Animals, 1987

Animal Behavior Workshop Chairperson and Introduction, Delta Society annual meeting, Boston, October 1986

"Dominance-related aggression in dogs", Delta Society meeting, Boston, October, 1986

"Separation Anxiety in a macaw", annual meeting of the Veterinary Society of Animal Behavior, July 1986

"Animal behavior problems which arise out of the nature of the human-companion animal bond", "Veterinary psychopharmacology", American Veterinary Medical Association annual meeting, July 1985

"Spraying in cats", Annual meeting of the American Veterinary Society of Animal Behavior, July 1985

"Diazepam for the treatment of spraying in cats", Annual meeting of the Animal Behavior Society, July 1985

MEDIA EXPERIENCE

Pets after divorce, Channel 7, 2005, Boston, MA

Animal Rescue League dog Rufus, Animal Planet, 2004.

Canine evaluations and rehabilitation in the shelter, Chronicle June, 2002

Satellite Media Tour for "Safe Steps Home" program for homeless cats November, 2000

Exhibit 1

Good Day New York "Puppy proofing during the holidays" November, 2000

American Baby Show "Introducing your dog to your new baby" October, 2000

CBS Morning Show "Treating behavior problems in dogs and cats"
October, 1999

Noon Call-in Channel 5 News, Questions related to veterinary medicine and
behavior from the public. Numerous appearances

Channel 4: How to introduce your new baby to your dog March, 1995

"Ten common misconceptions about dogs", 7 city media tour sponsored by
Purina Dog Chow " December 1994

"20-20", Show on companion animal behavior consultants, 1993, 1999

Numerous radio, newspaper and magazine interviews

Exhibit 2

Dr. Amy Marder, VMD, CAAB

Breed specific legislation is based on the premise that dogs of certain breeds are genetically alike and therefore will behave alike. There are several problems with this assumption:

1) **Often the breed of individual dogs cannot be reliably determined.** The breed of an individual dog may be determined by knowledge of the dog's parentage, by viewing accepted registration papers or by guessing the breed by visual means. Voith's¹ work has revealed that visual identification of the breeds that make up mixed breed dogs (which are the most commonly owned dogs) is highly inaccurate. When knowledgeable people guessed the breeds of a several mixed breed dogs they were rarely correct in even choosing one of the breeds

2) **Although it is commonly stated in popular and some scientific literature that breeds of dogs differ behaviorally in consistent and predictable ways, there is very little evidence.**^{2,3} Surprisingly, it is only since the mid-twentieth century that scientists have looked for substantial behavioral differences between breeds of dogs. These research findings that have measured differences between breeds in temperament and cognitive performance have been published in a recent literature review.² The different methodologies used to rank breeds according to behavior make the research results difficult to interpret and compare. The method of indirect collection of data through owner surveys is more likely to report breed differences than experimental studies. Surveys, although beneficial in that they enable the collection of large amounts of data tend to be invalid due to respondent bias. On the other hand, experimental studies are less common due to the difficulty of implementing and are less likely to report breed differences. Both types of studies however, have reported some differences in some types of behavior between breeds but also even higher numbers of differences in behavior within members of a breed. The within breed differences have been attributed to environmental variances and genetic influences according to location and selective breeding. In other words, although purebred dogs of each of the identified breeds (which there are over 1000!) may look alike, they behave differently. Dogs recognized as Labrador Retrievers do not behave the same. **The reason for this variation is that behavior is not only genetically determined but is also highly influenced by experience.** A Labrador Retriever bred for beauty is unlikely to be a good hunting dog. However, if that dog was raised in a family and received training to retrieve, he may be able to hunt adequately. On the other hand a Labrador Retriever bred to hunt is also less likely to be a good hunting dog if the dog is raised with little contact with people and has had no training.

3) **The breeding of purebred dogs has focused on morphology** which only accounts for .5% of the dog's entire genome. The behavior of the purebred dogs was neglected by the dog fanciers. We now know that the inheritance of behavior is much more complicated than morphology, and is most likely unrelated to the inheritance of morphology.

In conclusion: Due to the complicated inheritance of behavioral traits and the powerful influence of the environment on behavior, it is highly recommended to assess the behavior of an individual dog not its breed when assessing the risk it poses to the community.

Exhibit 2

Even if it were possible to predict the behavior of a dog based on the dog's breed, it has been shown that breed bans as a method to protect a community from dog bites are not only ineffective but also extremely difficult to implement. The Number Needed to Ban (NNB)⁴ is a mathematical figure that was developed based on the risk-based statistic Number Needed to Treat (NNT). The NNT is the average number of patients that would need to be treated to prevent one patient from developing the disease in question. This number is used by insurers to justify the cost of the treatment. The NNB is the number of dogs that would need to be removed to prevent a single dog bite. Dog bites vary in their severity however and different NNB's were calculated for each category. The NNB of the target breed to prevent a single emergency department visit due to dog bite each year is 5,128 dogs, and based on dog bite figures from Colorado, 8,333 dogs to prevent a single dog bite. 30,663 to prevent a single reconstructive procedure, 109,495 to prevent a hospitalization secondary to a dog bite, 59.523 to prevent a single insurance claim for a dog bite related injury per year.

The large values for NNB indicate the implausibility that BSL can substantially decrease the number of dog bite-related injuries in a community. Not only would breed bans be too expensive and difficult to implement, the NNB numbers support choosing a more rational and breed-neutral method to protect the public from dog bites.

References

- 1 Voith, Victoria L., et al. "Comparison of adoption agency breed identification and DNA breed identification of dogs." *Journal of Applied Animal Welfare Science* 12.3 (2009): 253-262.
- 2 Mehrkam, L. R. & Wynne, C. D. L. Behavioral differences among breeds of domestic dogs (*Canis lupus familiaris*): current status of the science. *Appl Anim Behav Sci* 155, 12–27 (2014).
- 3 Fadel, Fernanda Ruiz, et al. "Differences in trait impulsivity indicate diversification of dog breeds into working and show lines." *Scientific reports* 6 (2016).
- 4 Patronek, Gary J., Margaret Slater, and Amy Marder. "Use of a number-needed-to-ban calculation to illustrate limitations of breed-specific legislation in decreasing the risk of dog bite-related injury." *Journal of the American Veterinary Medical Association* 237.7 (2010): 788-792.