

## Emily Elizabeth Bray

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### PROFESSIONAL EXPERIENCE

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University of Arizona, School of Anthropology, Tucson, AZ and  
Canine Companions for Independence®, Santa Rosa, CA  
Post-doctoral Research Associate  
Focus: Longitudinal cognitive and behavioral studies in assistance dogs  
Supervisors: Dr. Evan MacLean and Dr. Brenda Kennedy

May 2017 – Present

### EDUCATION

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University of Pennsylvania, Philadelphia, PA May 2017  
PhD in Psychology (Concentration in Animal Learning and Behavior)  
Center for Teaching & Learning Teaching Certificate in College and University Teaching  
Dissertation: “A longitudinal study of maternal style, young adult temperament and cognition, and program outcome in a population of guide dogs”  
Advisors: Dr. Robert Seyfarth, Dr. Dorothy Cheney, and Dr. James Serpell

University of Pennsylvania, Philadelphia, PA May 2013  
M.A. in Psychology  
Thesis: “Dogs as a model system for understanding problem-solving: Exploring the affective and cognitive mechanisms that impact inhibitory control”  
Advisors: Dr. Robert Seyfarth, Dr. Dorothy Cheney, and Dr. James Serpell

Duke University, Durham, NC May 2012  
B.A. in Cognitive Psychology and English (*summa cum laude*), Graduation with Distinction in Psychology  
Psychology GPA 4.0, Cumulative GPA 3.97  
Graduation with Distinction Thesis: “Factors Affecting Inhibitory Control in Dogs”  
Advisors: Dr. Brian Hare and Dr. Stephen Mitroff

University College London, London, UK August 2010 - December 2010  
Semester Abroad through Butler University’s Institute for Study Abroad

### PEER-REVIEWED PUBLICATIONS

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10. **Bray, E.E.**, Gruen, M.E., Gnanadesikan, G.E., Horschler, D.J., Levy, K. M., Kennedy, B.S., Hare, B.A., & MacLean, E.L. (2020). Dog cognitive development: a longitudinal study across the first 2 years of life. *Animal Cognition*. doi: 10.1007/s10071-020-01443-7.
9. **Bray, E.E.**, Gruen, M.E., Gnanadesikan, G.E., Horschler, D.J., Levy, K.M., Kennedy, B.S., Hare, B.A., & MacLean, E.L. (2020). Cognitive characteristics of 8- to 10-week-old assistance dog puppies. *Animal Behaviour*, 166, 193-206. doi:10.1016/j.anbehav.2020.05.019.
8. Byrne, M., **Bray, E.E.**, MacLean, E.L., & Johnston, A.M. (2020). Evidence of win-stay-lose-shift in puppies and adult dogs. *Proceedings of the Cognitive Science Society*.
7. **Bray, E.E.**, Levy, K.M., Kennedy, B.S., Duffy, D.L., Serpell, J.A., & MacLean, E.L. (2019). Predictive models of assistance dog training outcomes using the Canine Behavioral Assessment and Research Questionnaire and a standardized temperament evaluation. *Frontiers in Veterinary Science*. 6:49. doi: 10.3389/fvets.2019.00049.
6. **Bray, E.E.**, Sammel, M.D., Cheney, D.L., Serpell, J.A., and Seyfarth, R.M. (2017). The effects of maternal investment, temperament, and cognition on guide dog success. *Proceedings of the National Academy of Sciences of the United States of America*, 114(34), 9128-9133. doi:10.1073/pnas.1704303114.

5. **Bray, E.E.**, Sammel, M.D., Seyfarth, R.M., Serpell, J.A., and Cheney, D.L. (2017). Temperament and problem solving in a population of adolescent guide dogs. *Animal Cognition*, 20(5), 923-939. doi: 10.1007/s10071-017-1112-8.
4. **Bray, E. E.**, Sammel, M.D., Cheney, D.L, Serpell, J.A., and Seyfarth, R.M. (2017). Characterizing early maternal style in a population of guide dogs. *Frontiers in Psychology*, 8, 175. doi: 10.3389/fpsyg.2017.00175.
3. **Bray, E.E.**, MacLean, E.L., & Hare, B.A. (2015). Increasing arousal enhances inhibitory control in calm but not excitable dogs. *Animal Cognition*, 18(6), 1317-1329. doi: 10.1007/s10071-015-0901-1.
2. MacLean, E.L., Hare, B., Nunn, C. L., Addessi, E., Amici, F., Anderson, R. C., Aureli, F., Baker, J. M., Bania, A. E., Barnard, A. M., Boogert, N. J., Brannon, E. M., **Bray, E. E.**, Bray J., Brent, L. J. N., Burkart, J. M., Call J., Cantlon, J.F., Cheke, L. G., Clayton, N. S., Delgado, M. M., DiVincenti, L. J., Fujita, K., Herrmann, E., Hiramatsu, C., Jacobs, L. F., Jordan, K. E., Laude, J. R., Leimgruber, K. L., Messer, E. J. E. , Moura, A. C.de A., Ostojić, L., Picard, A., Platt, M. L., Plotnik, J. M., Range, F., Reader, S. M., Reddy, R. B., Sandel, A. A., Santos, L. R., Schumann, K., Seed, A. M., Sewall, K. B., Shaw, R. C., Slocombe, K. E., Su, Y., Takimoto, A., Tan, J., Tao, R., van Schaik, C. P., Virányi, Z., Visalberghi, E., Wade, J. C., Watanabe, A., Widness, J., Young, J. K., Zentall, T. R., & Zhao, Y. (2014). The Evolution of Self-Control. *Proceedings of the National Academy of Sciences of the United States of America*, 111(20), E2140-E2148. doi: 10.1073/pnas.1323533111.
1. **Bray, E.E.**, MacLean, E.L., & Hare, B.A. (2014). Context specificity of inhibitory control in dogs. *Animal Cognition*, 17(1), 15-31. doi: 10.1007/s10071-013-0633-z.

## MANUSCRIPTS

- Bray, E.E.**, Gnanadesikan, G.E., Horschler, D.J., Levy, K. M., Kennedy, B.S., Famula, T.R., & MacLean, E.L. (under review). Early-emerging and highly-heritable sensitivity to human communication in dogs.
- Bray, E.E.**, Otto, C.M., Udell, M.A.R., Hall, N.J., Johnston, A.M., & MacLean, E.L. (under review). Enhancing the selection and performance of working dogs.
- Hall, N.J., Johnston, A.M., **Bray, E.E.**, Otto, C.M., MacLean, E.L., & Udell, M.A.R. (under review). Working dog training for the 21<sup>st</sup> century.
- Salomons, H., Smith, K., Callahan-Beckel, M., Callahan, M., Levy, K., Kennedy, B., **Bray, E.**, Gnanadesikan, G., Horschler, D., Gruen, M., Tan, J., White, P., MacLean, E., & Hare, B. (preprint). Cooperative communication with humans evolved to emerge early in dogs.  
<https://www.biorxiv.org/content/10.1101/2021.01.12.425620v1>

## RESEARCH GRANTS: CURRENT SUPPORT

Office of Naval Research— <b>Postdoctoral Scholar/Key Personnel: Bray</b>	<b>2020-2023</b>
Developmental and Genetic Influences on Working Dog Cognition (\$303,293)	
National Institute on Aging— <b>Postdoctoral Scholar/Key Personnel: Bray</b>	<b>2020-2021</b>
Development of Cognitive and Physical Activity Biomarkers for a Companion Dog Model of Alzheimer's (\$300,577)	
AKC Canine Health Foundation— <b>PIs: Bray &amp; MacLean</b> (\$105,949)	<b>2018-2021</b>
The Effects of Early Life Experience on Working Dog Temperament and Cognition	

## RESEARCH GRANTS: PREVIOUS SUPPORT

Office of Naval Research— <b>Postdoctoral Scholar/Key Personnel: Bray</b> (\$451,920)	<b>2017-2019</b>
Ontogeny and Heritability of Cognitive and Behavioral Traits Linked to Military Working Dog Success	
National Science Foundation Graduate Research Fellowship (\$32,000 per year)	<b>2013 - 2016</b>
Benjamin Franklin Fellowship, University of Pennsylvania	<b>2012 - 2013, 2016 - 2017</b>

## HONORS AND AWARDS

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Wallis Annenberg PetSpace Leadership Institute Fellow, Class of 2020	2020
McDonogh School Young Alumni Award Recipient	2019
University of Arizona Sursum Fellow: Postdoctoral Research Development Grant (\$1,083)	2018-2019
School of Arts & Sciences Dean's Travel Subvention (\$500)	Spring 2017
Norman Anderson Graduate Student Fund, Dept. of Psychology (\$2,490)	Winter 2017
School of Arts & Sciences Dean's Travel Subvention (\$500)	Summer 2016
Norman Anderson Graduate Student Fund, Dept. of Psychology (\$3,000)	Summer 2015
School of Arts & Sciences Dean's Travel Subvention (\$300)	Summer 2014
Norman Anderson Graduate Student Fund, Dept. of Psychology (\$2,750)	Summer 2014
Teece Fellowship, University of Pennsylvania (\$2,000)	Summer 2013
Phi Beta Kappa, Duke University	Spring 2013
Karl E. Zener Award for Outstanding Performance in Psychology, Duke University	Spring 2012
Faculty Scholar Award Nominee, Duke University	Fall 2011
Undergraduate Research Support Office Independent Study Grant (\$400)	Fall 2011
Vertical Integration Program in Psychology Stipend (\$3,000)	Summer 2011
Student Marshal	Spring 2011
Winfred Quinton Holton Prize for Innovative Work in the Field of Education	Spring 2011
Duke Dean's List with Distinction	Fall 2008, Fall 2009, Spring 2011, Fall 2011
Duke Dean's List	Spring 2009, Spring 2010
Psi Chi Honor Society Inductee	Spring 2010

## INVITED TALKS

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Sonoma State University, Biology Department Colloquium speaker series, 2020  
Virtual Heritage Society stakeholder events, Canine Companions for Independence, 2020  
Northwest, Southwest, Northeast, Southeast, and South Central Regions  
Wallis Annenberg PetSpace Leadership Institute Retreat, Wallis Annenberg PetSpace, 2020  
Duke University, Duke Canine Cognition Center, 1<sup>st</sup> Annual Darwin Dogs Day, 2019  
Evolutionary Anthropology Talk Series, Duke University, 2019  
Breeder Caretaker Seminar, Canine Companions for Independence, 2018  
TEAM Volunteer Leadership Conference, Canine Companions for Independence, 2018  
Canine Companions for Independence, 2018  
Canine Science Symposium, San Francisco SPCA, 2018  
National Board meeting reception, Canine Companions for Independence, 2017  
The Seeing Eye, 2017  
University of Exeter, Centre for Research in Animal Behaviour, 2016  
The Seeing Eye, 2015  
University of Veterinary Medicine Vienna, Messerli Research Institute, Clever Dog Lab, 2013  
Eötvös University Department of Ethology, Family Dog Project, 2013

## PRESENTATIONS

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**Bray, E.E.,** Gnanadesikan, G.E., Horschler, D.J., & MacLean, E.L. (2021 Jan). Heritable variation in dog social cognition. Abstract accepted for presentation at #AnimBehav2021 Twitter Conference (Virtual).

Horschler, D.J., **Bray, E.E.,** & MacLean, E.L. (2021). Do dogs form joint intentions with humans in social play? Talk accepted for presentation at the Society for Personality and Social Psychology's Origins of the Social Mind Preconference (Virtual meeting).

**Bray, E.E.** & MacLean, E.L. (2020 July). Early ontogeny of social cognition in domestic dogs. Animal Behavior Society 2020 Virtual Conference.

**Bray, E.E.,** Gnanadesikan, G.E., Horschler, D.J., & MacLean, E.L. (2020 Feb). Early development and longitudinal stability of cognitive traits in working dogs. East Coast Canine Cognition Workshop, Yale University, New Haven, Connecticut.

- Byrne, M., **Bray, E.E.**, MacLean, E.L., & Johnston, A.M. (2020 Feb). Evidence for win-stay-lose-shift in puppies and adult dogs. East Coast Canine Cognition Workshop, Yale University, New Haven, Connecticut.
- Horschler, D.J., **Bray, E.E.**, & MacLean, E.L. (2020 Feb). Do dogs re-engage humans when joint experiences end? East Coast Canine Cognition Workshop, Yale University, New Haven, Connecticut.
- MacLean, E.L., Gnanadesikan, G., **Bray, E.E.**, & Snyder-Mackler, N. (2020 Jan). Dog diversity as a natural experiment in cognitive evolution. The Society for Integrative & Comparative Biology Annual Meeting, Austin, Texas.
- MacLean, E.L., **Bray, E.E.**, Gnanadesikan, G.E., & Horschler, D.J. (2019 Oct). Ontogeny and heritability of cognitive and temperamental traits in an assistance dog population. International Canine Science Conference, Tempe, Arizona.
- Bray, E.E.**, Gnanadesikan, G., Horschler, D., & MacLean, E. (2019 April). Early emerging cognition in 9-week-old puppies. The 26<sup>th</sup> International Conference On Comparative Cognition, Melbourne Beach, Florida.
- MacLean, E., **Bray, E.E.**, Gnanadesikan, G., & Horschler, D. (2019 April). Heritability of Cognitive Traits in a Pedigreed Dog Population. The 26<sup>th</sup> International Conference On Comparative Cognition, Melbourne Beach, Florida.
- Bray, E.E.** (2018 Nov). How mothers matter: The impact of maternal style on later behavior and outcome in assistance dogs. East Coast Canine Cognition Workshop, Yale University, New Haven, Connecticut.
- Bray, E.E.**, Sammel, M., Cheney, D., Serpell, J., & Seyfarth, R. (2017 Oct). The effects of maternal investment, temperament, & cognition on guide dog success. Canine Science Conference, Tempe, Arizona.
- Bray, E.E.**, Sammel, M., Cheney, D., Serpell, J., & Seyfarth, R. (2017 June). Puppies that succeed as guide dogs get tough love. 54<sup>th</sup> Annual Conference of the Animal Behavior Society, Toronto, Ontario.
- Bray, E.E.**, Sammel, M., Cheney, D., Serpell, J., & Seyfarth, R. (2016 Aug). Cognitive and temperament predictors of guide dog success. 53<sup>rd</sup> Annual Conference of the Animal Behavior Society, Columbia, Missouri.
- Bray, E.E.** (2014 Aug). The effect of arousal on inhibitory control in dogs. 51<sup>st</sup> Annual Conference of the Animal Behavior Society, Princeton, New Jersey.
- Bray, E.E.** (2013 Aug). Dogs as a model system for understanding the effect of arousal on inhibitory control. University of Pennsylvania, 699 presentations to the Department of Psychology. Philadelphia, Pennsylvania.
- Bray, E.E.** (2012 Sept). What are the factors affecting inhibitory control in dogs? IGERT Common Ground Seminar. Philadelphia, Pennsylvania.
- Bray, E.E.**, MacLean, E.L., & Hare, B.A. (2012 April). Factors Affecting Inhibitory Control in Dogs. 7<sup>th</sup> Annual ACC Meeting of the Minds Conference, Blacksburg, Virginia.

## POSTERS

*\*Denotes undergraduate mentee*

- Byrne, M., **Bray, E.E.**, MacLean, E.L., & Johnston, A.M. (2020). Evidence for win-stay-lose-shift in puppies and adult dogs. Poster presented at the 42<sup>nd</sup> Annual Meeting of the Cognitive Science Society, Virtual.
- Kennedy, B.S., Levy, K.M., **Bray, E.E.**, & MacLean, E.L. (2019 September). Maternal style: How early experiences are associated with future outcomes of assistance dogs. Poster presented at 11<sup>th</sup> International Working Dog Conference, Stockholm, Sweden.

\*Humphrey, E., **Bray, E.**, & Crocker, D. (2019 April). Cortisol and its tie to behavior in service dogs. Poster presented at Sonoma State University Science Symposium: Science, Technology, and Environmental Inquiry, Rohnert Park, California.

\*Seely, A., **Bray, E.**, & Seyfarth, R. (2014 September). Flexible Attention in Seeing Eye® Puppies. Poster Presented at Center for Undergraduate Research & Fellowships Open House and Research Expo, Philadelphia, Pennsylvania.

MacLean, E.L., Rainey, C., **Bray, E.**, Duffy, K., & Hare, B. (2012 July). Cognitive & Temperamental Traits of Successful Assistance Dogs. Poster presented at 21<sup>st</sup> Annual Conference of the International Society of Anthrozoology, Cambridge, United Kingdom.

**Bray, E.E.**, MacLean, E.L., & Hare, B.A. (2012 June). Factors Affecting Inhibitory Control in Dogs. Poster presented at 49<sup>th</sup> Annual Conference of the Animal Behavior Society, Albuquerque, New Mexico.

**Bray, E.E.**, MacLean, E.L., & Hare, B.A. (2012 April). Factors Affecting Inhibitory Control in Dogs. Poster presented at Duke's Visible Thinking Day, Durham, North Carolina.

**Bray, E.E.** (2011 April). Recommendations for an English Language Learner Literacy Intervention in Durham Public Schools for Communities in Schools of Durham. Poster presented at Duke School Research Partnership End-of-Semester gathering poster presentation. Durham, North Carolina.

## RESEARCH EXPERIENCE

Canine Companions for Independence, Santa Rosa, CA <i>Project coordinator, researcher, on-site supervisor</i>	<b>2017 - present</b>
The Seeing Eye, Inc., Morristown, NJ <i>Project coordinator and researcher</i>	<b>2014 - 2016</b>
Michigan State University Masai Mara Spotted Hyena Project, Kenya <i>Researcher</i>	<b>Summer 2013</b>
Canine Companions for Independence, Santa Rosa, CA <i>Project Co-Manager, Associate in Research in Evolutionary Anthropology</i>	<b>July 2012</b>
K2 Solutions, Pinehurst, NC <i>Associate in Research in Evolutionary Anthropology</i>	<b>June 2012</b>
Canine Companions for Independence, Santa Rosa, CA <i>Undergraduate researcher</i>	<b>August 2011</b>
Duke University, School Research Partnership Office, Durham, NC <i>Independent study student</i>	<b>Spring 2011</b>
Duke University, Duke Canine Cognition Center, Durham, NC <i>Undergraduate researcher and thesis student</i>	<b>2010 - 2012</b>

## TEACHING AND MENTORING EXPERIENCE

### Undergraduate Honors Theses Supervised

Chandler From	University of Arizona	<i>The effect of vertical nursing on cognitive test scores in 8-week-old puppies</i>	<b>2020</b>
Camden Olson	Princeton University	<i>Service Dog Tales: A Tri-fold Study Investigating Diabetic Alert Dog Accuracy, the Use of Animal-Assisted Therapy to Address Executive Functioning Skills, and the Function of Calming Signals in Service Dog Puppies</i>	<b>2018</b>
Sarah Frommer	University of Pennsylvania	<i>Does Kennel Acclimation Reliably Indicate Stable Traits Related to Stress Reactivity In Young Seeing Eye® Dogs?</i>	<b>2016</b>
Molly Ream	University of Pennsylvania	<i>Stability of Behavioral Traits in Canines</i>	<b>2016</b>

<b>Sonoma State University Biology Research Internship at Canine Companions: Mentor and on-site supervisor</b>	
Theresa Hatcher	<b>Spring 2020</b>
Kyla Guinon, Erin Hardin, and Emily Humphrey	<b>Spring 2019</b>
Alexzia Clark, Emily Humphrey, Facundo Ortega, and Camila Risueno-Pena	<b>Fall 2018</b>
Alexzia Clark, Emily Humphrey, and Amber Robello	<b>Spring 2018</b>

<b>Undergraduate Research Assistants: Mentor and on-site supervisor</b>	
Camden Olson (Princeton)	<b>2018</b>
Mary Chiang (Franklin & Marshall)	<b>2017</b>
Lindsey Lang (University of Arizona)	<b>2017</b>
Sarah Frommer (University of Pennsylvania)	<b>2015-2016</b>
Molly Ream (University of Pennsylvania)	<b>2015-2016</b>
Rebecca Schwartz (University of Pennsylvania)	<b>2015-2016</b>
Leonie Cohen (Swarthmore College)	<b>2015</b>
Marie Torres (University of Pennsylvania)	<b>2014</b>
Stephanie Bartner (Franklin & Marshall)	<b>2014</b>
Ashleigh Seely (University of Pennsylvania)	<b>2014</b>

<b>University of Pennsylvania Mentoring</b>	
The Graduate School Mentoring Initiative	<b>2014 - 2015</b>
The Penn Mentoring Program	<b>2013 - 2014</b>

<b>Teaching assistant</b>	
Animal Behavior, Dr. Seyfarth and Cheney, University of Pennsylvania	<b>Fall 2013, Fall 2014</b>

<b>Guest Lectures:</b>	
<i>Human Animal Bond Class</i>	<b>2021</b>
University of Pennsylvania, School of Veterinary Medicine	
“Ontogeny and heritability of behavioral and cognitive traits in dogs”	

<i>Field Studies in Animal Behavior: Dog Cognition and Behavior</i>	<b>2020</b>
Hunter College, Psychology Department.	
“Research methods to study canine behavior and cognition”	

<i>Animal Cognition Seminar</i>	<b>2014</b>
University of Pennsylvania, Psychology Department.	
“How can dog research help us to understand inhibitory control?”	

<i>Animal Behavior</i>	<b>2013, 2014</b>
University of Pennsylvania, Psychology Department.	
“How can dog research help us to understand inhibitory control?”	

<b>Alumni community reader for the Duke Reader Project</b>	
Psy 202: Research Methods	<b>Fall 2020</b>
Bio 329L: Principles of Animal Physiology	<b>Spring 2020</b>
Psy 301: Research Methods	<b>Spring 2017</b>

<b>Tutoring experience</b>	
Thompson Writing Program: The Writing Studio, Durham, NC	<b>2010 - 2012</b>
<i>Undergraduate Writing Tutor following completion of a semester-long course</i>	
Partners for Success, Durham, NC (4 <sup>th</sup> grade)	<b>Fall 2011</b>
<i>Tutored as part of my service-learning course Psy 108A: Educational Psychology</i>	
The Duke School, Durham, NC (pre-school)	<b>Spring 2011</b>
<i>Student Observer for Psy 183B: Child Observation</i>	
Partners for Youth, Durham, NC (high school)	<b>2008 - 2009</b>

## PROFESSIONAL SERVICE AND AFFILIATIONS

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Grant reviewer	
<i>University of Arizona Postdoctoral Research Development grants</i>	<b>2020</b>
<i>Animal Behaviour Society student research grants</i>	<b>2019</b>
Ad Hoc reviewer	<b>2014 - Present</b>
<i>Animal Behaviour, Animal Cognition, Behaviour, Behavioural Processes, Journal of Applied Animal Welfare Science, Journal of Comparative Psychology, Journal of Ethology, Journal of Veterinary Behavior: Clinical Applications and Research, Learning &amp; Behavior, PLOS One, Scientific Reports, Veterinary Record</i>	
Organized "Topics in Animal Behavior" graduate seminar, University of Pennsylvania	<b>Spring 2014, 2015, 2016</b>
ManyDogs consortium	<b>2019 - Present</b>
<i>Methods development committee</i>	
Member	
<i>Animal Behaviour Society</i>	<b>2012 - Present</b>
<i>The International Society of Anthrozoology</i>	<b>2017 - Present</b>
<i>Comparative Cognition Society</i>	<b>2020 - Present</b>

## PUBLIC SCIENTIFIC ENGAGEMENT (SELECTED EXAMPLES)

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"Join Canine Companions postdoctoral research associate Dr. Emily Bray."	
Canine Companions for Independence, Facebook Live event. <a href="https://bit.ly/2y1lyMV">https://bit.ly/2y1lyMV</a>	<b>May 2020</b>
"How Mothers Matter: The Influence of Early Maternal Interaction on Offspring Behavior and Development."	
Continuing Education event presented as part of the 2019 VetVine Webinar Series, sponsored by AKC Canine Health Foundation. <a href="http://bit.ly/2QscPDb">http://bit.ly/2QscPDb</a>	<b>May 2019</b>
"What dogs teach us about parenting."	
Top of Mind with Julie Rose, BYU Radio. <a href="https://bit.ly/2eMvETc">https://bit.ly/2eMvETc</a>	<b>Sept 2017</b>
"Guide Dog Success."	
AAAS Science Update. <a href="http://bit.ly/2uQpa8n">http://bit.ly/2uQpa8n</a>	<b>Aug 2017</b>
"Coddled puppies make poor guide dogs, study suggests."	
All Things Considered, National Public Radio. <a href="http://n.pr/2uA1vrS">http://n.pr/2uA1vrS</a>	<b>Aug 2017</b>
"Puppies that get tough love succeed as guide dogs."	
Quirks and Quarks, CBC Radio. <a href="http://bit.ly/2i7oTMC">http://bit.ly/2i7oTMC</a>	<b>Aug 2017</b>

## COMMUNITY SCIENCE OUTREACH

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Canine Companions for Independence (CCI), National Puppy Program Workshop	<b>Oct 2020</b>
- Presented research involving assistance dogs and participated in a Q + A with puppy raisers for CCI	
American Association of University Women (AAUW) Girls in Engineering, Math, and Science (GEMS)	<b>Jan 2019</b>
- Presented my research to and participated in a panel discussion for the local AAUW GEMS group during their tour of Canine Companions for Independence.	
Penn Alexander School	<b>March 2017</b>
- Presented my research to the 3 <sup>rd</sup> grade as part of their "Women in Science" unit.	
Ashley Park Pre K-8 School	<b>January 2014</b>
- Presented my work on impulse control in service dogs to a 2 <sup>nd</sup> grade class.	
Central Park School for Children, Durham, NC	<b>August 2012</b>
- Presented my service dog research to a 1 <sup>st</sup> grade class in an interactive setting.	
North Carolina Museum of Natural Sciences, Raleigh, NC	<b>August 2012</b>
- Played interactive cognition games with attendees of a bonobo conservation talk.	
Duke Canine Cognition Center, Durham, NC	<b>March 2012</b>
- Presented our dog research as part of the Pathways Health Careers Enrichment Program.	