Vitae (September 23, 2026)

Identification Data

Name: Edward A. Wasserman
Birth Date: April 2, 1946; Los Angeles, CA

Address: Department of Psychological and Brain Sciences
The University of Iowa
Iowa City, Iowa 52242

Phone: (319)335-2445 (Office); (319)335-1229 (Laboratory); (319)325-4123 (Home)

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Academic Appointments:

First appointed to The University of Iowa as Assistant Professor—August, 1972
Promoted to Associate Professor at The University of Iowa—August, 1977
Promoted to Professor at The University of Iowa—August, 1983

Education:

Institution	Dates attended	Major	Degree	Date
UCLA	9/64-6/68	Psychology	B.A.	6/68
Indiana University	9/68-1/72	Psychology	Ph.D.	1/72

University Recognition:

Institution	Awards and Honors
UCLA	University and Psychology Honors; Phi Beta Kappa; Psi Chi (Chapter President)
Indiana University	University Fellow; NDEA Fellow; NIMH Predoctoral Fellow; Richard C. Atkinson Lifetime Achievement Award, Department of Psychological and Brain Sciences
University of Sussex	NSF Postdoctoral Fellow; Research Fellow
University of Iowa	Old Gold Fellow; Summer Teaching Fellow; Who's Who in Midwest; American Men & Women of Science; Outstanding Young Men of America; Who's Who in America; University House Fellow; American Psychological Association Fellow; Association for Psychological Science Fellow; Who's Who in Science and Engineering; Van Allen Natural Sciences Fellow; Stuit Professor of Experimental Psychology; Regents Award for Faculty Excellence; Society of Experimental Psychologists; Michael J. Brody Award for Faculty Excellence in Service; Who's Who in American Education; Outstanding Honors Teacher; Lane Davis Award for Honors Team Teaching; Graduate College Mentoring Award

Academic and Professional Experience:

Title	Institution	Date
NSF Undergraduate Researcher (Supervisors: J. P. Houston, B. Weiner)	UCLA	1967
RA and TA (Supervisors: T. Trabasso, C. Walker, B. Weiner)	UCLA	1967-1968
Indiana University Fellow	Indiana University	1968-1969
NDEA Fellow	Indiana University	1969-1970
RA and TA (Supervisor: B. S. Markman)	Indiana University	1969-1970
NIMH Predoctoral Fellow (Supervisors: E. Hearst, G. A. Heise)	Indiana University	1970-1971
NSF Postdoctoral Fellow (Supervisor: N. S. Sutherland)	University of Sussex, England	1972
Assistant Professor	University of Iowa	1972-1977
Old Gold Fellow	University of Iowa	1975
National Academy of Sciences Exchangee (Sponsor: E. A. Asratyan)	Institute of Higher Nervous Activity and Neurophysiology, USSR	1976
Summer Teaching Fellow	University of Iowa	1976
Research Fellow	University of Sussex, England	1976
Associate Professor	University of Iowa	1977-1983
Old Gold Fellow	University of Iowa	1982
Professor	University of Iowa	1983-
University House Fellow	University of Iowa	1987
James Van Allen Natural Sciences Fellow	University of Iowa	1994-1995
Stuit Professor of Experimental Psychology	University of Iowa	1997-
Visiting CNRS Scientist	Center for Research in Cognitive Neuroscience, Marseille, France	1999
Visiting Professor	Keio University, Tokyo, Japan	2001
Collaborating Scientist	Great Ape Trust	2006-2012
Collaborating Scientist	Ruhr Universität Bochum	2023-

Scholarly Recognition:

American Psychological Association (Division 6, Society for Behavioral Neuroscience and Comparative Psychology): D. O. Hebb Distinguished Scientific Contribution Award, 2011

Comparative Cognition Society: Career Research Award, 2015

American Psychological Association (Division 25, Behavior Analysis): Med Associates Distinguished Contributions to Basic Behavioral Research Award, 2016

Pavlovian Society: W. Horsley Gantt Medal for distinguished contributions to Pavlovian conceptual models, 2018

Society for the Advancement of Behavior Analysis Award for Effective Presentation of Behavior Analysis in the Mass Media, 2026

Research Support:

Prior grants

Operant conditioning and autoshaping: Graduate College Research Grant, 1972-73
Excitation, inhibition, and autoshaping: NIMH Grant, 1974-75
Autoshaping and the operant-respondent distinction: NSF Grant, 1976-77
The form and direction of autoshaped behaviors: NSF Grant, 1977-81
Cognition and causation: University House Interdisciplinary Research Grant, 1987 (with E. Fales)
Alzheimer's disease and depression: Committee on Aging Grant, 1987-88 (with M. W. O'Hara)
An animal model of fetal alcohol syndrome: Interdisciplinary Research Grant: 1990-91 (with J. R. West)
Determinants of nonsimilarity-based categorization: NIMH Grant, 1994-99 (with S. L. Astley)
The natural science of mind: Van Allen Natural Sciences Fellowship, 1994-95
Causal discounting: Laws and mechanisms: CIFRE grant, 1995
Communication, consciousness, and comparative cognition: Obermann Center for Advanced Studies Interdisciplinary Research Grant, 1997 (with J. Ringen)
Entropy and same-different conceptualization: NSF Grant, 1999-2004 (with M. Young)
Same-different conceptualization by baboons: Human Frontier Science Program, 2000 (with J. Fagot)
Articulating the Animal: Obermann Center for Advanced Studies Interdisciplinary Research Semester, 2005 (with T. Mangum, J. Desmond, M. Trachsel, K. Marra, and P. Trimpe)
Great ape perception and cognition: Great Ape Trust, 2006-08
Perceptual bases of visual concepts in pigeons: NIMH/NEI Grant, 1991-2012 (with I. Biederman, USC)
Pruning the associative thicket: Word learning in pigeons, people, and individuals with language learning disabilities: OVPRED Grant, 2014-2015 (with B. McMurray and K. McGregor)
Development and neurobiology of categorization: NICHD P01 Grant, 2016-2021 (with V. Sloutsky, OSU, B. Love, UCL, and J. Freeman, UI)—Total UI funds = $1,957,412.
Development of translational visual quality of life outcomes and non-invasive rehabilitation of visual loss: Veterans Administration SPiRE Grant, 2020-2022 (Co-Investigator with M. Harper, UI)—Total funds = $199,714.

Current grants

Professional Service

Associate Editor:

Learning and Motivation (1982-2000)

Board of Editors:

Learning & Behavior (1998-2022)
Behaviorism (1985-1989)
Journal of the Experimental Analysis of Behavior (1978-1981; 1996-1999; 2001-2003; 2013-2016)
Journal of Experimental Psychology: Animal Learning and Cognition (1985-2003; 2013-)
Journal of Experimental Psychology: General (2002-2022)
Journal of Experimental Psychology: Learning, Memory, and Cognition (1993-1995)

Corresponding Associate Commentator:

Behavioral and Brain Sciences (1978-)

Member:

Psychobiology and Behavior Research Review Committee, NIMH (1991-1994)
Psychobiology, Behavior, and Neuroscience Research Review Committee, NIMH (1994-1995)
Basic Behavioral Science Research Subcommittee D, NIDA (1998)
Committee on Animal Research and Ethics, APA (1996-1998; Chair, 1998)
Behavioral and Social Sciences Review Integration Panels I and II, NIH (1998)
Board of Directors: Great Ape Trust (2011-2012)

Distinguished Visiting Professor:

National Science Foundation conference on neurobiology techniques, cognition, and computer simulation, Colorado State University, 1990

Cecil and Ida Green Honors Professorship, Texas Christian University, 2017

Invited Participant:

Science Advocacy Training Conference, American Psychological Association, 1995
Science Leadership Conference, American Psychological Association, 2006

Grant Reviewer:

Austrian Science Foundation
Iowa Science Foundation
Leverhulme Trust
Montanans on a New Trac for Science
National Institute of Child Health and Human Development
National Institute of Mental Health
National Research Council of Canada
National Science Foundation
Natural Sciences and Engineering Research Council of Canada
PSC-CUNY Research Award Program
United States-Israel Binational Science Foundation
Wellcome Trust

External Ph.D. Dissertation Examiner:

Peter W. D. Dodd, Queen's University, Kingston, Ontario, Canada, 1978
R. T. Pithers, The University of Sydney, Sydney, NSW, Australia, 1981
Izumi Hiramatsu, Charles Sturt, University, NSW, Australia, 2007
Caitlin Newport, University of Queensland, Brisbane, Queensland, Australia, 2015

External Honors Examiner:

Helen Gruetzmacher, Victor Miller; Knox College, 1985
David Hordiner, Jordi Kleiner, David Seligman; Swarthmore College, 1995

Professional Organizations:

American Association for the Advancement of Science (2021 Fellow)
American Psychological Association (Fellow of Divisions 1, 3, 6, and 25; Division 3 Member-at-Large, 2000-2003, President, 2007-2008; Division 6 President, 2003-2004; Division 25 President, 2018-2020; Master Lecturer, 2007)
Association for Psychological Science (Charter Fellow)
Cognitive Science Society
Comparative Cognition Society (President, 2000-2001)
Midwestern Psychological Association (Charter Fellow; Program Committee, 2002-2004)
Phi Beta Kappa
Psi Chi
Psychonomic Society (Governing Board, 1999-2004)
Society for Research in Child Development
Society of Experimental Psychologists (Elected 2004)
Sigma Xi
Vision Sciences Society

Steering Committee:

International Conference on Comparative Cognition (1993-)

Colloquia:

Title	**Location**	**Date**
Associative Determinants of Autoshaping	University of Sussex, England	1972
Psychology and Ethology	University of Sussex, England	1972
Autoshaping	Cambridge University, England	1972
Autoshaping and Constraints on Learning	Oxford University, England	1972
Operant and Respondent Factors in Autoshaping	Drake University	1975
Autoshaping and Two-Process Theory	Institute of Higher Nervous Activity, USSR	1976
Conditioning and Autoshaping	University of Sussex, England	1976
Autoshaping	Drake University	1977
Autoshaping: Implications for Two-Process Theory	CUNY, Hunter College	1977
A Bird's Eye View of Memory	Michigan State University	1978
Memory and the Operant	Dalhousie University, Canada	1978
On Animal Memory	University of California, Berkeley	1980
Toward a Cognitive Theory of Operant Behavior	Drake University	1981
Psychological Aspects of Foraging	Simon Fraser University, Canada	1984
Ecology and Psychology of Short-Term Memory	Simon Fraser University, Canada	1984
Forward- and Backward-Looking Memory Models	University of British Columbia, Canada	1984
Words, Actions, and Contingencies	Drake University	1984
Processes of Short-Term Memory in Pigeons	University of Wisconsin, Milwaukee	1984
Contingency and Contiguity in Causal Perception	McGill University, Canada	1986
A Behavioral Analysis of Concepts	Grinnell College	1990
Conceptualization in Pigeons	Augustana College	1990
Comparative Cognition: A Purview	Earlham College	1990
Do Pigeons Learn Concepts?	Indiana University	1990
Conceptualization in Pigeons	Purdue University	1991

Concepts, Categories, and Pigeons	Columbia University	1991
In What Sense Do Pigeons Learn Concepts?	CUNY, Hunter College	1991
A Behavioral Analysis of Concepts	SUNY, Stony Brook	1991
An Associative Approach to Cause and Effect	SUNY, Binghamton	1993
Processes of Visual Recognition by Pigeons	Columbia University	1994
Conceptualization in Pigeons	Drake University	1994
Conceptualization by Pigeons	Cornell College	1995
Basic and Higher-Order Concepts in Pigeons	University of Kentucky	1995
Conceptualization by Pigeons and Humans	University of Texas	1998
Conceptualization by Pigeons and Humans	Iowa State University	1998
Entropy Detection in Pigeons and People	CNRS, Marseille, France	1999
Conceptualization by Pigeons	CNRS, Marseille, France	1999
Same-Different Conceptualization	Cognitive Science Institute, Lyon, France	2000
Abstract Conceptualization	Kent State University	2000
Concepts in Pigeons and People	Franklin and Marshall College	2001
Abstraction in Pigeons?	University of Nebraska	2001
Abstraction in Pigeons and People	Western Kentucky University	2003
Abstraction in Pigeons and People	Ohio State University	2003
Abstraction in Pigeons and People	University of Deusto, Bilbao, Spain	2003
A comparative approach to abstract thought	McMaster University, Canada	2004
A comparative approach to abstract thought	Wilfrid Laurier University, Canada	2004
The Rational Mind: Reason Amid a Savage World	UCLA	2005
The Rational Mind: Reason Amid a Savage World	Villanova University	2005
Visual Object Discrimination by Pigeons	Rikkyo University, Tokyo, Japan	2006
Unhinging Darwin	University of Northern Iowa	2010
Artificial Selection: Made by Man and Nature	University of Northern Iowa	2011
Conceptual Behavior in Humans and Animals	Universidad Nacional Autónoma de México	2011
Locked-in No More	Universidad Nacional Autónoma de México	2013
Minding Machines	University of Northern Iowa	2014
Animal Intelligence	Thinking Animals Lecture, New York City	2014
Categorization in Pigeons	Texas Christian University	2017
Bye Design!	Texas Christian University	2017
Precrastination and Adaptive Behavior	University of Otago, Dunedin, NZ	2018
The Pigeon as a Machine	Ruhr Universität Bochum	2023
Perceptual and Associative Mechanisms in Avian Visual Categorization	Graduate Center, CUNY	2024

Publications (h-index = 71)

1. Wasserman, E. A., Weiner, B., & Houston, J. P. (1968). Another failure for motivation to enhance trace retrieval. *Psychological Reports, 22,* 1007-1008.
2. Wasserman, E. A., & Jensen, D. D. (1969). Olfactory stimuli and the "pseudo-extinction" effect. *Science, 166,* 1307-1309.
3. Wasserman, E. A., & Jensen, D. D. (1970). Olfactory stimuli and the "pseudo-extinction" effect. *Science, 169,* 402.
4. Dinsmoor, J. A., Browne, M. P., Lawrence, C. E., & Wasserman, E. A. (1971). A new analysis of Wyckoff's observing response. *Proceedings, 79th Annual Convention, APA,* 679-680.
5. Wasserman, E. A. (1972). *Auto-shaping: The selection and direction of behavior by predictive stimuli.* Doctoral Dissertation, Indiana University.
6. Wasserman, E. A. (1973). The effect of redundant contextual stimuli on autoshaping the pigeon's

keypeck. *Animal Learning & Behavior, 1,* 198-206.
7. Wasserman, E. A. (1973). Key-peck persistence on autoshaping procedures. *Proceedings, 81st Annual Convention, APA,* 877-878.
8. Wasserman, E. A. (1973). Pavlovian conditioning with heat reinforcement produces stimulus-directed pecking in chicks. *Science, 181,* 875-877.
9. Wasserman, E. A. (1974). Responses in Pavlovian conditioning studies. *Science, 186,* 157.
10. Wasserman, E. A. (1974). Stimulus-reinforcer predictiveness and selective discrimination learning in pigeons. *Journal of Experimental Psychology, 103,* 284-297.
11. Wasserman, E. A., & Anderson, P. A. (1974). Differential auto-shaping to common and distinctive elements of positive and negative discriminative stimuli. *Journal of the Experimental Analysis of Behavior, 22,* 491-496.
12. Wasserman, E. A., Franklin, S. R., & Hearst, E. (1974). Pavlovian appetitive contingencies and approach versus withdrawal to conditioned stimuli in pigeons. *Journal of Comparative and Physiological Psychology, 86,* 616-627.
13. Wasserman, E. A., & McCracken, S. B. (1974). The disruption of autoshaped key pecking in the pigeon by food-tray illumination. *Journal of the Experimental Analysis of Behavior, 22,* 39-45.
14. Wasserman, E. A., Hunter, N. B., Gutowski, K. A., & Bader, S. A. (1975). Autoshaping chicks with heat reinforcement: The role of stimulus-reinforcer and response-reinforcer relations. *Journal of Experimental Psychology: Animal Behavior Processes, 1,* 158-169.
15. Wasserman, E. A., & Molina, E. J. (1975). Explicitly unpaired key light and food presentations: Interference with subsequent auto-shaped key pecking in pigeons. *Journal of Experimental Psychology: Animal Behavior Processes, 1,* 30-38.
16. Wasserman, E. A. (1976). Successive matching-to-sample in the pigeon: Variations on a theme by Konorski. *Behavior Research Methods & Instrumentation, 8,* 278-282.
17. Deich, J. D., & Wasserman, E. A. (1977). Rate and temporal pattern of key pecking under autoshaping and omission schedules of reinforcement. *Journal of the Experimental Analysis of Behavior, 27*, 399-405.
18. Wasserman, E. A. (1977). Conditioning of within-trial patterns of key pecking in pigeons. *Journal of the Experimental Analysis of Behavior, 28,* 213-220.
19. Wasserman, E. A., Deich, J. D., Hunter, N. B., & Nagamatsu, L. S. (1977). Analyzing the random control procedure: Effects of paired and unpaired CSs and USs on autoshaping the chick's key peck with heat reinforcement. *Learning and Motivation, 8,* 467-487.
20. Wasserman, E. A. (1978). Interrelations between motor and secretory reactions in classical alimentary conditioning. *Journal of Higher Nervous Activity, 28,* 493-497. (in Russian)
21. Wasserman, E. A., Carr, D. L., & Deich, J. D. (1978). Association of conditioned stimuli during serial conditioning by pigeons. *Animal Learning & Behavior, 6,* 52-56.
22. Nelson, K. R., & Wasserman, E. A. (1978). Temporal factors influencing the pigeon's successive matching-to-sample performance: Sample duration, intertrial interval, and retention interval. *Journal of the Experimental Analysis of Behavior, 30,* 153-162.
23. Wasserman, E. A. (1978). Bindra's theory: Some successes and precursors. *Behavioral and Brain Sciences, 1,* 80-81.
24. Wasserman, E. A. (1978). The relationship between motor and secretory behaviors in classical appetitive conditioning. *Pavlovian Journal of Biological Science, 13,* 182-186.
25. Grayson, R. J., & Wasserman, E. A. (1979). Conditioning of two-response patterns of key pecking in pigeons. *Journal of the Experimental Analysis of Behavior, 31,* 23-29.
26. Lucas, G. A., Vodraska, A., & Wasserman, E. A. (1979). Technical note: A direct fluid delivery system for the pigeon. *Journal of the Experimental Analysis of Behavior, 31,* 285-288.
27. Wasserman, E. A. (1979). New trends in behavior analysis. A review of B. Schwartz's *Psychology of learning and behavior. Contemporary Psychology, 24,* 123-124.
28. Wasserman, E. A., Nelson, K. R., & Larew, M. B. (1980). Memory for sequences of stimuli and

responses. *Journal of the Experimental Analysis of Behavior, 34,* 49-59.
29. Weisman, R. G., Wasserman, E. A., Dodd, P. W. D., & Larew, M. B. (1980). Representation and retention of two-event sequences in pigeons. *Journal of Experimental Psychology: Animal Behavior Processes, 6,* 312-325.
30. Wasserman, E. A. (1981). Response evocation in autoshaping: Contributions of cognitive and comparative-evolutionary analyses to an understanding of directed action. In C. M. Locurto, H. S. Terrace, & J. Gibbon (Eds.), *Autoshaping and conditioning theory.* New York: Academic Press. Pp. 21-54.
31. Wasserman, E. A. (1981). Comparative psychology returns: A review of Hulse, Fowler, and Honig's *Cognitive processes in animal behavior. Journal of the Experimental Analysis of Behavior, 35,* 243-257.
32. Honig, W. K., & Wasserman, E. A. (1981). Performance of pigeons on delayed simple and conditional discriminations under equivalent training procedures. *Learning and Motivation, 12,* 149-170.
33. Lucas, G. A., Deich, J. D., & Wasserman, E. A. (1981). Trace autoshaping: Acquisition, maintenance, and path dependence at long trace intervals. *Journal of the Experimental Analysis of Behavior, 36,* 61-74.
34. Nelson, K. R., & Wasserman, E. A. (1981). Stimulus asymmetry in the pigeon's successive matching-to-sample performance. *Bulletin of the Psychonomic Society, 18,* 343-346.
35. DeLong, R. E., & Wasserman, E. A. (1981). Effects of differential reinforcement expectancies on successive matching-to-sample performance in pigeons. *Journal of Experimental Psychology: Animal Behavior Processes, 7,* 394-412.
36. Wasserman, E. A., Grosch, J., & Nevin, J. A. (1982). Effects of signalled retention intervals on pigeon short-term memory. *Animal Learning & Behavior, 10,* 330-338.
37. Lucas, G. A., & Wasserman, E. A. (1982). US duration and local trial spacing affect autoshaped responding. *Animal Learning & Behavior, 10,* 490-498.
38. Wasserman, E. A. (1982). Further remarks on the role of cognition in the comparative analysis of behavior. *Journal of the Experimental Analysis of Behavior, 38,* 211-216.
39. Wasserman, E. A. (1983). Is cognitive psychology behavioral? *Psychological Record, 33,* 6-11.
40. Wasserman, E. A. (1983). Ecology and learning: Some historical and analytical perspectives. *Behavioral and Brain Sciences, 6,* 183-184.
41. Wasserman, E. A., Chatlosh, D. L., & Neunaber, D. J. (1983). Perception of causal relations in humans: Factors affecting judgments of response-outcome contingencies under free-operant procedures. *Learning and Motivation, 14,* 406-432.
42. Wasserman, E. A., & Maier, S. F. (Eds.). (1983). Contingency, contiguity, and causality. *Learning and Motivation (Special Edition), 14,* 381-553.
43. Wasserman, E. A., Deich, J. D., & Cox, K. E. (1983). The learning and memory of response sequences. In M. L. Commons, R. J. Herrnstein, & A. R. Wagner (Eds.), *Quantitative analyses of behavior: Vol. IV, Discrimination processes.* New York: Ballinger. Pp. 99-113.
44. Hughes, L. M., Wasserman, E. A., & Hinrichs, J. V. (1984). Chronic diazepam administration and appetitive discrimination learning: Acquisition versus steady-state performance in pigeons. *Psychopharmacology, 84,* 318-322.
45. Wasserman, E. A. (1984). Animal intelligence: Understanding the minds of animals through their behavioral "ambassadors." In H. L. Roitblat, T. G. Bever, & H. S. Terrace (Eds.), *Animal cognition.* Hillsdale, NJ: Erlbaum. Pp. 45-60.
46. Wasserman, E. A., DeLong, R. E., & Larew, M. B. (1984). Temporal order and duration: Their discrimination and retention by pigeons. *Annals of the New York Academy of Sciences, 423,* 103-115.
47. Wasserman, E. A., & Lucas, G. A. (1984). The role of the magazine-response contingency on signal-directed responding in pigeons. *Learning and Motivation, 15,* 156-172.

48. Wasserman, E. A., & Shaklee, H. (1984). Judging response-outcome relations: The role of response-outcome contingency, outcome probability, and method of information presentation. *Memory and Cognition, 12,* 270-286.
49. Wasserman, E. A. (1985). Animal thinking. *American Scientist*, *73*, 6.
50. Chatlosh, D. L., Neunaber, D. J., & Wasserman, E. A. (1985). Response-outcome contingency: Behavioral and judgmental effects of appetitive and aversive outcomes with college students. *Learning and Motivation, 16,* 1-34.
51. DeLong, R. E., & Wasserman, E. A. (1985). Stimulus selection with duration as a relevant cue. *Learning and Motivation, 16,* 259-287.
52. Guttenberger, V. T., & Wasserman, E. A. (1985). Effects of sample duration, retention interval, and passage of time in the test on pigeons' matching-to-sample performance. *Animal Learning & Behavior, 13,* 121-128.
53. Wasserman, E. A. (1986). Prospection and retrospection as processes of animal short-term memory. In D. F. Kendrick, M. Rilling, & M. R. Denny (Eds.), *Animal memory*. Hillsdale, NJ: Erlbaum. Pp. 53-75.
54. Lobmeyer, D. L., & Wasserman, E. A. (1986). Preliminaries to free throw shooting: Superstitious behavior? *Journal of Sport Behavior, 9,* 70-78.
55. Neunaber, D. J., & Wasserman, E. A. (1986). The effects of unidirectional versus bidirectional rating procedures on college students' judgments of response-outcome contingency. *Learning and Motivation, 17,* 162-179.
56. Shaklee, H., & Wasserman, E. A. (1986). Judging interevent contingencies: Being right for the wrong reasons. *Bulletin of the Psychonomic Society, 24,* 91-94.
57. Wasserman, E. A., & Neunaber, D. J. (1986). College students' responding to and rating of contingency relations: The role of temporal contiguity. *Journal of the Experimental Analysis of Behavior, 46,* 15-35.
58. Bhatt, R. S., & Wasserman, E. A. (1987). Choice behavior of pigeons on progressive and multiple schedules: A test of optimal foraging theory. *Journal of Experimental Psychology: Animal Behavior Processes, 13,* 40-51.
59. Chatlosh, D. L., & Wasserman, E. A. (1987). Delayed temporal discrimination in pigeons: A comparison of two procedures. *Journal of the Experimental Analysis of Behavior, 47,* 299-309.
60. Wasserman, E. A., Bhatt, R. S., Chatlosh, D. L., & Kiedinger, R. E. (1987). Discrimination of and memory for dimension and value information by pigeons. *Learning and Motivation, 18,* 34-56.
61. Wasserman, E. A., & Maier, S. F. (Eds.) (1987). Animal memory and cognition. *Learning and Motivation (Special Edition), 18,* 1-146.
62. Solomon, R. E., Wasserman, E. A., & Gebhart, G. F. (1987). Tolerance to antinociceptive effects of morphine without tolerance to its effects on schedule-controlled behavior. *Psychopharmacology, 92,* 327-333.
63. Bhatt, R. S., Wasserman, E. A., Reynolds, W. F., Jr., & Knauss, K. S. (1988). Conceptual behavior in pigeons: Categorization of both familiar and novel examples from four classes of natural and artificial stimuli. *Journal of Experimental Psychology: Animal Behavior Processes, 14,* 219-234.
64. Wasserman, E. A., Kiedinger, R. E., & Bhatt, R. S. (1988). Conceptual behavior in pigeons: Categories, subcategories, and pseudocategories. *Journal of Experimental Psychology: Animal Behavior Processes, 14,* 235-246.
65. Wasserman, E. A., Schroeder, G. W., & O'Hara, M. W. (1988). Operant and alternative button pressing by male and female college students on DRL and RR schedules of points reinforcement. *Bulletin of the Psychonomic Society, 26,* 319-322.
66. Wasserman, E. A. (1988). Response bias in the yoked control procedure. *Behavioral and Brain Sciences, 11,* 477-478.
67. Wasserman, E. A., & Bhatt, R. S. (1989). Memory and concepts in pigeons. *24th International Congress of Psychology, Vol. 6, Psychobiology: Issues and Applications,* 81-88.

68. Bhatt, R. S., & Wasserman, E. A. (1989). Secondary generalization and categorization in pigeons. *Journal of the Experimental Analysis of Behavior (Special Issue on the Experimental Analysis of Cognition), 52,* 213-224.
69. Wasserman, E. A. (1989). Pavlovian conditioning: Is contiguity irrelevant? *American Psychologist, 44,* 1550-1551.
70. Wasserman, E. A. (1990). Detecting response-outcome relations: Toward an understanding of the causal texture of the environment. In G. H. Bower (Ed.), *The Psychology of Learning and Motivation.* San Diego: Academic Press. Pp. 27-82.
71. Wasserman, E. A., Dorner, W. W., & Kao, S. F. (1990). The contributions of specific cell information to judgments of interevent contingency. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 16,* 509-521.
72. Wasserman, E. A. (1990). Attribution of causality to common and distinctive elements of compound stimuli. *Psychological Science, 1,* 298-302.
73. Wasserman, E. A. (1991). The pecking pigeon: A model of complex visual processing? A review of *Quantitative analyses of behavior (Volume XIII): Behavioral approaches to pattern recognition and concept formation,* M. L. Commons, R. J. Herrnstein, S. M. Kosslyn, & D. M. Mumford (Eds.), *Contemporary Psychology, 36,* 605-606.
74. Gionet, T. X., Thomas, J. D., Warner, D. S., Goodlett, C. R., Wasserman, E. A., & West, J. R. (1991). Forebrain ischemia induces selective behavioral impairments associated with hippocampal CA1 injury. *Stroke, 22,* 1040-1047.
75. Thomas, J. D., Goodlett, C. R., Wasserman, E. A., & West, J. R. (1991). Motor coordination deficits associated with cerebellar damage in adult rats induced by alcohol exposure during the brain growth spurt. *Alcoholism: Clinical and Experimental Research*, *15*, 336.
76. Astley, S. L., & Wasserman, E. A. (1992). Categorical discrimination and generalization in pigeons: All negative stimuli are not created equal. *Journal of Experimental Psychology: Animal Behavior Processes, 18,* 193-207.
77. Wasserman, E. A., & Bhatt, R. S. (1992). Conceptualization of natural and artificial stimuli by pigeons. In W. K. Honig and J. G. Fetterman (Eds.), *Cognitive aspects of stimulus control.* Hillsdale, NJ: Erlbaum. Pp. 203-223.
78. Fales, E., & Wasserman, E. A. (1992). Causal knowledge: What can psychology teach philosophers? *Journal of Mind and Behavior, 13,* 1-27.
79. Gormezano, I., & Wasserman, E. A. (Eds.) (1992). *Learning and memory: The behavioral and biological substrates.* Hillsdale, NJ: Erlbaum.
80. Chatlosh, D. L., & Wasserman, E. A. (1992). Memory and expectancy in delayed discrimination procedures. In I. Gormezano and E. A. Wasserman (Eds.), *Learning and memory: The behavioral and biological substrates.* Hillsdale, NJ: Erlbaum. Pp. 61-79.
81. Goodlett, C. R., Bonthius, D. J., Wasserman, E. A., & West, J. R. (1992). An animal model of central nervous system dysfunction associated with fetal alcohol exposure: Behavioral and neuroanatomical correlates. In I. Gormezano and E. A. Wasserman (Eds.), *Learning and memory: The behavioral and biological substrates.* Hillsdale, NJ: Erlbaum. Pp. 183-208.
82. Wasserman, E. A., DeVolder, C. L., & Coppage, D. J. (1992). Nonsimilarity-based conceptualization in pigeons via secondary or mediated generalization. *Psychological Science, 3,* 374-379.
83. Van Hamme, L. J., Wasserman, E. A., & Biederman, I. (1992). Discrimination of contour-deleted images by pigeons. *Journal of Experimental Psychology: Animal Behavior Processes, 18,* 387-399.
84. Wasserman, E. A., Elek, S. M., Chatlosh, D. L., & Baker, A. G. (1993). Rating causal relations: The role of probability in judgments of response-outcome contingency. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 19,* 174-188.
85. Wasserman, E. A. (1993). Comparative cognition: Beginning the second century of the study of animal intelligence. *Psychological Bulletin, 113,* 211-228.

86. Wasserman, E. A. (1993). Comparative cognition: Toward a general understanding of cognition in behavior. *Psychological Science, 4,* 156-161.
87. Levin, I. P., Wasserman, E. A., & Kao, S. F. (1993). Multiple methods for examining biased information use in contingency judgments. *Organizational Behavior and Human Decision Processes, 55,* 228-250.
88. Kao, S. F., & Wasserman, E. A. (1993). Assessment of an information integration account of contingency judgment with examination of subjective cell importance and method of information presentation. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 19,* 1363-1386.
89. Wasserman, E. A., Kirkpatrick-Steger, K., Van Hamme, L. J., & Biederman, I. (1993). Pigeons are sensitive to the spatial organization of complex visual stimuli. *Psychological Science, 4,* 336-341.
90. Wasserman, E. A., & DeVolder, C. L. (1993). Similarity- and nonsimilarity-based conceptualization in children and pigeons. *Psychological Record, 43,* 779-793.
91. Wasserman, E. A. (1993). Picture perception: A bird's eye view. *Current Directions in Psychological Science, 2,* 184-189.
92. Van Hamme, L. J., Kao, S. F., & Wasserman, E. A. (1993). Judging interevent relations: From cause to effect and from effect to cause. *Memory & Cognition, 21,* 802-808.
93. Chatlosh, D. L., & Wasserman, E. A. (1993). Multidimensional stimulus control in pigeons: Selective attention and other issues. In T. R. Zentall (Ed.), *Animal cognition: A tribute to Donald A. Riley.* Hillsdale, NJ: Erlbaum. Pp. 271-292.
94. Van Hamme, L. J., & Wasserman, E. A. (1993). Cue competition in causality judgments: The role of manner of information presentation. *Bulletin of the Psychonomic Society, 31,* 457-460.
95. Van Hamme, L. J., & Wasserman, E. A. (1994). Cue competition in causality judgments: The role of nonpresentation of compound stimulus elements. *Learning and Motivation*, *25*, 127-151.
96. Wasserman, E. A, & Astley, S. L. (1994). A behavioral analysis of concepts: Its application to pigeons and children. In D. L. Medin (Ed.), *Psychology of Learning and Motivation.* San Diego: Academic Press. Pp. 73-132.
97. Wasserman, E. A. (1994). Common versus distinctive species: On the logic of behavioral comparison. *Behavior Analyst*, *17*, 221-223.
98. Blumberg, M. S., & Wasserman, E. A. (1995). Animal mind and the argument from design. *American Psychologist*, *50*, 133-144.
99. Wasserman, E. A. (1995). The conceptual abilities of pigeons. *American Scientist*, *83*, 246-255.
100. Wasserman, E. A. (1995). Pigeon English? *American Scientist*, *83*, 296-298.
101. Wasserman, E. A. (1995). Animal learning and comparative cognition. In I. P. Levin and J. V. Hinrichs, *Experimental psychology: Contemporary methods and applications*. Brown & Benchmark: Dubuque, IA. Pp. 117-164.
102. Wasserman, E. A., Hugart, J. A., & Kirkpatrick-Steger, K. (1995). Pigeons show same-different conceptualization after training with complex visual stimuli. *Journal of Experimental Psychology: Animal Behavior Processes*, *21*, 248-252.
103. Blumberg, M. S., & Wasserman, E. A. (1996). Animals have minds? *American Psychologist*, *51*, 59-60.
104. Kirkpatrick-Steger, K., & Wasserman, E. A. (1996). The what and the where of the pigeon's processing of complex visual stimuli. *Journal of Experimental Psychology: Animal Behavior Processes*, *22*, 60-67.
105. Kirkpatrick-Steger, K., Wasserman, E. A., & Biederman, I. (1996). Effects of spatial rearrangement of object components on picture recognition in pigeons. *Journal of the Experimental Analysis of Behavior*, *65*, 465-475.
106. Wasserman, E. A., Gagliardi, J. L., Cook, B. R., Kirkpatrick-Steger, K., Astley, S. L., & Biederman, I. (1996). The pigeon's recognition of drawings of depth-rotated stimuli. *Journal of Experimental Psychology: Animal Behavior Processes*, *22*, 205-221.

107. Wasserman, E. A., Kao, S.-F., Van Hamme, L. J., Katagiri, M., & Young, M. E. (1996). Causation and association. In D. R. Shanks, K. J. Holyoak, and D. L. Medin (Eds.), *Psychology of Learning and Motivation: Causal learning*. San Diego: Academic Press. Pp. 207-264.
108. Thomas, J. D., Wasserman, E. A., West, J. R., & Goodlett, C. R. (1996). Behavioral deficits induced by binge-like exposure to alcohol in neonatal rats: Importance of developmental timing and number of episodes. *Developmental Psychobiology*, *29*, 433-452.
109. Kirkpatrick-Steger, K., Miller, S. S., Betti, C. A., & Wasserman, E. A. (1996). Cyclic responding by pigeons on the peak timing procedure, *Journal of Experimental Psychology: Animal Behavior Processes*, *22*, 447-460.
110. Wasserman, E. A. (1996, July 5). Humans and other animals. *Chronicle of Higher Education*, *42*, B5.
111. Astley, S. L. & Wasserman, E. A. (1996). Mediating associations, essentialism, and nonsimilarity-based categorization. In T. R. Zentall and P. M. Smeets (Eds.), *Stimulus class formation in humans and animals*. Amsterdam: Elsvier (North-Holland). Pp. 111-133.
112. Wasserman, E. A., & Miller, R. R. (1997). What's elementary about associative learning? *Annual Review of Psychology*, *48*, 573-607.
113. Wasserman, E. A. (1997). Animal cognition: Past, present, and future. *Journal of Experimental Psychology: Animal Behavior Processes*, *23*, 123-135.
114. Young, M. E., & Wasserman, E. A. (1997). Entropy detection by pigeons: Response to mixed visual displays after same-different discrimination training. *Journal of Experimental Psychology: Animal Behavior Processes*, *23*, 157-170.
115. Young, M. E., Wasserman, E. A., & Garner K. L. (1997). Effects of number of items on the pigeon's discrimination of same from different visual displays. *Journal of Experimental Psychology: Animal Behavior Processes*, *23*, 491-501.
116. Astley, S. L. & Wasserman, E. A. (1997). Object concepts: Behavioral research with animals and young children. In W. O'Donohue (Ed.), *Learning and behavior therapy*. Boston, MA: Allyn & Bacon. Pp. 440-463.
117. Young, M. E., Wasserman, E. A., & Dalrymple, R. M. (1997). Memory-based same-different conceptualization by pigeons. *Psychonomic Bulletin & Review*, *4*, 552-558.
118. Kirkpatrick-Steger, K., Wasserman, E. A., & Biederman, I. (1998). Effects of geon deletion, scrambling, and movement on picture recognition in pigeons. *Journal of Experimental Psychology: Animal Behavior Processes*, *24,* 34-46.
119. Wasserman, E. A., & Berglan, L. R. (1998). Backward blocking and recovery from overshadowing in human causal judgment: The role of within-compound associations. *Quarterly Journal of Experimental Psychology, 51B*, 121-138.
120. Astley, S. L., & Wasserman, E. A. (1998). Novelty and functional equivalence in superordinate categorization by pigeons. *Animal Learning & Behavior, 26*, 125-138.
121. Wasserman, E. A. (1999). Behaviorism. In R. A. Wilson and F. C. Keil (Eds.), *MIT encyclopedia of the cognitive sciences*. Cambridge, MA: MIT Press. Available: http://cognet.mit.edu/library/erefs/mitecs/wasserman.html
122. Astley, S. L., & Wasserman, E. A. (1999). Superordinate category formation in pigeons: Association with a common delay or probability of food reinforcement makes perceptually dissimilar stimuli functionally equivalent. *Journal of Experimental Psychology: Animal Behavior Processes*, *25*, 415-432.
123. Young, M. E., Wasserman, E. A., Hilfers, M. A., & Dalrymple, R. (1999). The pigeon's variability discrimination with lists of successively presented visual stimuli. *Journal of Experimental Psychology: Animal Behavior Processes*, *25*, 475-490.
124. Peissig, J. J., Young, M. E., Wasserman, E. A., & Biederman, I. (1999). The pigeon's perception of depth-rotated shapes. *Current Psychology of Cognition*, *18*, 657-690. [Reprinted in J. Fagot (Ed.), *Picture perception in animals* (pp. 37-70). Psychology Press, Ltd.: East Sussex, England.]

125. Peissig, J. J., Young, M. E., Wasserman, E. A., & Biederman, I. (2000). Seeing things from a different angle: The pigeon's recognition of single geons rotated in depth. *Journal of Experimental Psychology: Animal Behavior Processes*, *26*, 115-132.
126. Wasserman, E. A., Young, M. E., & Nolan, B. C. (2000). Display variability and spatial organization as contributors to the pigeon's discrimination of complex visual stimuli. *Journal of Experimental Psychology: Animal Behavior Processes*, *26*, 133-143.
127. Kirkpatrick-Steger, K., Wasserman, E. A., & Biederman, I. (2000). The pigeon's discrimination of shape and location information. *Visual Cognition*, *7*, 417-436.
128. Young, M. E., Wasserman, E. A., Johnson, J. L., & Jones, F. L. (2000). Positive and negative patterning in human causal learning. *Quarterly Journal of Experimental Psychology*, *53B*, 121-138.
129. Young, M. E., Johnson, J. L., & Wasserman, E. A. (2000). Serial causation: Occasion setting in a causal induction task. *Memory & Cognition*, *28,* 1213-1230.
130. Wasserman, E. A., & Rovee-Collier, C. (2001). Conceptualization by infants and pigeons. In M. E. Carroll and J. B. Overmier (Eds.), *Animal research and human health: Advancing human welfare through behavioral science*. American Psychological Association. Pp. 263-279.
131. Young, M. E., & Wasserman, E. A. (2001). Entropy and variability discrimination. *Journal of Experimental Psychology: Learning, Memory and Cognition*, *27*, 278-293.
132. Wasserman, E. A., Fagot, J., & Young, M. E. (2001). Same-different conceptualization by baboons (*Papio papio*): The role of entropy. *Journal of Comparative Psychology, 115,* 42-52.
133. Gottselig, J. M., Wasserman, E. A., & Young, M. E. (2001). Attentional tradeoffs in pigeons learning to discriminate newly-relevant visual stimulus dimensions. *Learning and Motivation, 32,* 240–253.
134. Young, M. E., Peissig, J. J., Wasserman, E. A., & Biederman, I. (2001). Discrimination of geons by pigeons: The effects of variations in surface depiction. *Animal Learning & Behavior, 29,* 97-106.
135. Astley, S. L., Peissig, J. J., Wasserman, E. A. (2001). Superordinate categorization via learned stimulus equivalence: Quantity of reinforcement, hedonic value, and the nature of the mediator. *Journal of Experimental Psychology: Animal Behavior Processes, 27,* 252-268.
136. Young, M. E., & Wasserman, E. A. (2001). Stimulus control in complex arrays. In R. G. Cook (Ed.), *Avian visual cognition* [On-line]. Available: http://www.pigeon.psy.tufts.edu/avc/young/
137. Fagot, J., Wasserman, E. A., & Young, M. E. (2001). Discriminating the relation between relations: The role of entropy in abstract conceptualization by baboons and humans. *Journal of Experimental Psychology: Animal Behavior Processes, 27*, 316-328.
138. Wasserman, E. A., Young, M. E., & Fagot, J. (2001). Effects of number of items on the baboon's discrimination of same from different visual displays. *Animal Cognition, 4,* 163-170.
139. Young, M. E., & Wasserman, E. A. (2001). Evidence for a conceptual account of same-different discrimination learning in the pigeon. *Psychonomic Bulletin & Review, 8,* 677-684.
140. Schwartz, B., Wasserman, E. A., & Robbins, S. J. (2002). *Psychology of learning and behavior (5th Ed.)*. New York: Norton. [Textbook].
141. Young, M. E., & Wasserman, E. A. (2002). Detecting variety: What's so special about uniformity? *Journal of Experimental Psychology: General*, *131*, 131-143.
142. Wasserman, E. A. (2002). General signs. In M. Bekoff, C. Allen, & G. M. Burghardt (Eds.), *The cognitive animal*. Cambridge, MA: MIT Press. Pp. 175-182.
143. Peissig, J. J., Wasserman, E. A., Young, M. E., & Biederman, I. (2002). Learning an object from multiple views enhances its recognition in an orthogonal rotational axis in pigeons. *Vision Research, 42,* 2051-2062. [Paper featured in Faculty of 1000 http://f1000.com/1009452]
144. Young, M. E., & Wasserman, E. A. (2002). Limited attention and cue order consistency affect predictive learning: A test of similarity measures. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 28,* 484-496.

145. Wasserman, E. A., Frank, A. J., & Young, M. E. (2002). Stimulus control by same versus different relations among multiple visual stimuli. *Journal of Experimental Psychology: Animal Behavior Processes, 28,* 347-357.
146. Wasserman, E. A., Young, M. E., & Peissig, J. J. (2002). Brief presentations are sufficient for pigeons to discriminate displays of same and different stimuli. *Journal of the Experimental Analysis of Behavior, 78,* 365-373.
147. Young, M. E., & Wasserman, E. A. (2002). The pigeon's discrimination of visual entropy: A logarithmic function. *Animal Learning & Behavior, 30,* 306-314.
148. DiPietro, N. T., Wasserman, E. A., & Young, M. E. (2002). Effects of occlusion on pigeons' visual object recognition. *Perception, 31,* 299-312.
149. Wasserman, E. A. (2002). Comparative psychology. In *Encyclopedia of Cognitive Science*. London: Macmillan.
150. Gibson, B. M., & Wasserman, E. A. (2003). Pigeons learn stimulus identity and stimulus relations when both serve as redundant, relevant cues during *same-different* discrimination training. *Journal of Experimental Psychology: Animal Behavior Processes, 29,* 84-91.
151. Young, M. E., & Wasserman, E. A. (2003). Visual variability discrimination. In S. A. Soraci & K. Murata-Soraci (Eds.), *Visual information processing*. New York: Praeger. Pp. 171-197.
152. Young, M. E., Ellefson, M. R., & Wasserman, E. A. (2003). Toward a theory of variability discrimination: Finding differences. *Behavioural Processes, 62,* 145-155.
153. Wasserman, E. A. (2003). Review of Felix E. Goodson's *Evolution and Function of Cognition*. *Quarterly Review of Biology, 78*, 254-255.
154. Young, M. E., & Wasserman, E. A. (2004). Theories of learning. In K. Lamberts & R. Goldstone (Eds.), *Handbook of Cognition*. Thousand Oaks, CA: Sage Publications.
155. Gibson, B. M., Wasserman, E. A., Frei, L., & Miller, K. (2004). Recent advances in operant conditioning technology: A versatile and affordable computerized touchscreen system. *Behavior Research Methods, Instruments, & Computers*, *36*, 355-362.
156. Gibson, B. M., & Wasserman, E. A. (2004). Time-course of control by specific stimulus features and relational cues during same-different discrimination training. *Learning and Behavior, 32,* 183-189.
157. Lazareva, O. F., Smirnova, A. A., Bagozkaja, M. S., Zorina, Z. A., Rayevsky, V. V., & Wasserman E. A. (2004). Transitive responding in hooded crows requires linearly-ordered stimuli. *Journal of the Experimental Analysis of Behavior, 82,* 1-19.
158. Fagot, J., Wasserman, E., & Young, M. (2004). Catégorisation d'objets visuels et concepts relationnels chez l'animal. In J. Vauclair & M. Kreuter (Eds.), *L'éthologie cognitive*. Paris: Edition Orphys. Pp. 117-136.
159. Wasserman, E. A., Young, M. E., & Cook, R. G. (2004). Variability discrimination in humans and animals: Implications for adaptive action. *American Psychologist, 59*, 879–890.
160. Wasserman, E. A. (2004). Behaviorism. In *Encyclopedia of animal behavior* (Marc Bekoff, Ed.). Greenwood: Phoenix, AZ.
161. Cook, R. G., & Wasserman, E. A. (2004). Behavioral physiology: Visual perception mechanisms. In *Encyclopedia of animal behavior* (Marc Bekoff, Ed.). Greenwood: Phoenix, AZ.
162. Lazareva, O. F., Freiburger, K., & Wasserman, E. A. (2004). Pigeons concurrently categorize photographs at both basic and superordinate levels. *Psychonomic Bulletin & Review, 11,* 1111-1117.
163. Wasserman, E. A., & Castro, L. (2005). Surprise and change: Variations in the strength of present and absent cues in causal learning. *Learning & Behavior, 33,* 131-146.
164. Lazareva, O. F., Wasserman, E. A., Young, M. E. (2005). Transposition in pigeons: Reassessing Spence (1937) with multiple discrimination training. *Learning & Behavior, 33*, 22-46.

165. Gibson, B. M., Wasserman, E. A., Gosselin, F., & Schyns, P. G. (2005). Applying bubbles to localize features that control pigeons' visual discrimination behavior. *Journal of Experimental Psychology: Animal Behavior Processes, 31,* 376-382.
166. Peissig, J. J., Young, M. E., Wasserman, E. A., & Biederman, I. (2005). The role of edges in object recognition by pigeons. *Perception, 34,* 1353-1374.
167. Lazareva, O. F., Vecera, S. P., Levin, J. I., & Wasserman, E. A. (2005). Object discrimination by pigeons: Effects of object color and shape. *Behavioural Processes, 69*, 17-31.
168. Frank, A. J., & Wasserman, E. A. (2005). Associative symmetry in the pigeon after successive matching-to-sample training. *Journal of the Experimental Analysis of Behavior, 84,* 147-165.
169. Frank, A. J., & Wasserman, E. A. (2005). Response rate is not an effective mediator of learned stimulus equivalence in pigeons. *Learning & Behavior,* 2005, *33*, 287-295.
170. Castro, L. & Wasserman, E. A. (2005). Associative learning in animals and humans. Interdisciplines web conference on causality, G. Origgi & A. Reboul (Eds.).
171. Peissig, J. J., Kirkpatrick, K., Young, M. E., Wasserman, E. A., & Biederman, I. (2006). Effects of varying stimulus size on object recognition in pigeons. *Journal of Experimental Psychology: Animal Behavior Processes, 32,* 419-430.
172. Lazareva, O. F., Vecera, S. P., & Wasserman, E. A. (2006). Object discrimination in pigeons: Effects of local and global cues. *Vision Research, 46*, 1361-1374.
173. Lazareva, O. F., Levin, J. I., Vecera, S. P., & Wasserman, E. A. (2006). The search for object-based attention in pigeons: Failure and success. In K. Fujita & S. Imamura (Eds.), *Diversity of cognition*. Kyoto: Kyoto University Academic Press, pp. 3-37.
174. Gibson, B. M., Wasserman, E. A., & Cook, R. G. (2006). Not all same-different discriminations are created equal: Evidence contrary to a unidimensional account of same-different learning. *Learning and Motivation, 37,* 189-208.
175. Lazareva, O. F., & Wasserman, E. A. (2006). Effect of stimulus orderability and reinforcement history on transitive responding in pigeons. *Behavioural Processes, 72,* 161-172.
176. Lazareva, O. F., Castro, L., Vecera, S. P., & Wasserman, E. A. (2006). Figure-ground assignment in pigeons: Evidence for a figural benefit. *Perception & Psychophysics*, *68*, 711-724.
177. Wasserman, E. A., & Zentall, T. R. (2006). *Comparative cognition: Experimental explorations of animal intelligence.* New York: Oxford University Press. [Winner: Honorable Mention, Psychology & Cognitive Science, Professional and Scholarly Publishing Division (PSP) of Association of American Publishers (AAP).]
178. Wasserman, E. A., & Zentall, T. R. (2006). Comparative cognition: A natural science approach to the study of animal intelligence. In E. A. Wasserman & T. R. Zentall (Eds.), *Comparative cognition: Experimental explorations of animal intelligence.* New York: Oxford University Press.
179. Cook, R. G., & Wasserman, E. A. (2006). Relational discrimination learning in pigeons. In E. A. Wasserman & T. R. Zentall (Eds.), *Comparative cognition: Experimental explorations of animal intelligence.* New York: Oxford University Press.
180. Lazareva, O. F., Freiburger, K. L., & Wasserman, E. A. (2006). Effects of stimulus manipulations on visual categorization in pigeons, *Behavioural Processes, 72*, 224-233.
181. Young, M. E., Beckmann, J. S., & Wasserman, E. A. (2006). Pigeons' discrimination of Michotte's launching effect. *Journal of the Experimental Analysis of Behavior, 86,* 223-237.
182. Castro, L., Young, M. E., & Wasserman, E. A. (2006). Effects of number of items and visual display variability on same-different discrimination behavior. *Memory & Cognition, 34,* 1689-1703.
183. Wasserman, E. A., & Blumberg, M. S. (2006). Designing minds. *Association for Psychological Science: Observer, 19,* 25-26, https://www.psychologicalscience.org/observer/designing-minds
184. Lazareva, O. F., Wasserman, E. A., & Biederman, I. (2007). Pigeons' recognition of partially occluded objects depends on specific training experience, *Perception, 36,* 33-48.

185. Gibson, B. M., Lazareva, O. F., Gosselin, F., Schyns, P., & Wasserman, E. A. (2007). Non-accidental properties underlie shape recognition in mammalian and non-mammalian vision. *Current Biology, 17,* 336-340.
186. Katagiri, M., Kao, S. F., Simon, A. M., Castro, L., & Wasserman, E. A. (2007). Judgments of causal efficacy under constant and changing interevent contingencies, *Behavioural Processes, 74,* 251-264.
187. Gibson, B. M., Wasserman, E. A., & Kamil, A. C. (2007). Pigeons and people select efficient routes when solving a one-way "traveling salesperson" task. *Journal of Experimental Psychology: Animal Behavior Processes, 33,* 244-261.
188. Nagasaka, Y., Lazareva, O. F., & Wasserman, E. A. (2007). Prior experience affects amodal completion in pigeons. *Perception & Psychophysics, 69,* 596-605.
189. Castro, L., & Wasserman, E. A. (2007). Discrimination blocking: Acquisition versus performance deficits in human contingency learning. *Learning & Behavior, 35,* 149-162.
190. Wasserman, E. A. (2007). The rational mind: Thin colonies of reason amid a savage world. *Psychological Science Agenda*, *21*, 2, 13-16.
191. Young, M. E., Wasserman, E. A., & Ellefson, M. R. (2007). A theory of variability discrimination: Finding differences. *Psychonomic Bulletin & Review, 14,* 805-822.
192. Wasserman, E. A., & Frank, A. J. (2007). Concrete versus abstract stimulus control: The yin and yang of same-different discrimination behavior. In S. Watanabe & M. A. Hofman (Eds.). *Integration of comparative neuroanatomy and cognition.* Tokyo, Japan: Keio University.
193. Cook, R. G., & Wasserman, E. A. (2007). Learning and transfer of relational matching-to-sample by pigeons. *Psychonomic Bulletin & Review, 14,* 1107-1114.
194. Vadillo, M. A., Castro, L., Matute, H., & Wasserman, E. A. (2008). Backward blocking: The role of within-compound associations and interference between cues trained apart. *Quarterly Journal of Experimental Psychology, 61,* 185-193.
195. Lazareva, O. F., Wasserman, E. A., & Biederman, I. (2008). Pigeons and humans are more sensitive to nonaccidental than to metric changes in visual objects. *Behavioural Processes, 77,* 199-209.
196. Castro, L., & Wasserman, E. A. (2008). Further challenges to elemental and configural accounts of associative learning. *Behavioural Processes, 77,* 428-430.
197. Zentall, T. R., Wasserman, E. A., Lazareva, O. F., Thompson, R. K. R., & Rattermann, M. J. (2008). Concept learning in animals. *Comparative Cognition & Behavior Reviews, 3,* 13-45.
198. Nagasaka, Y., & Wasserman, E. A. (2008). Amodal completion of moving objects by pigeons. *Perception, 37,* 557-570.
199. Lazareva, O. F., & Wasserman, E. A. (2008). Categories and concepts in animals. In R. Menzel (Ed.), *Learning theory and behavior. Learning and memory: A comprehensive reference, Vol. 1* (J. Byrne, Ed.), pp. 197-226. Oxford: Elsevier.
200. Brooks, D. I., & Wasserman, E. A. (2008). Same/different discrimination learning with trial-unique stimuli. *Psychonomic Bulletin & Review, 15,* 644-650.
201. Wasserman, E. A., & Hall, G. (Eds.). (2008). A tribute to K. W. Spence (1907-1967). *Learning & Behavior (Special Edition), 36,* 167-265.
202. Lazareva, O. F., Miner, M., Wasserman, E. A., & Young, M. E. (2008). Multiple-pair training enhances transposition in pigeons. *Learning & Behavior, 36,* 174-187.
203. Wasserman, E. A. (2008). On possible discontinuities between human and nonhuman minds. *Behavioral and Brain Sciences, 31,* 151-152.
204. Wasserman, E. A. (2008). Development and evolution of cognition: One doth not fly into flying! *Behavioral and Brain Sciences, 31,* 400-401.
205. Lazareva, O. F., & Wasserman, E. A. (2009). Effects of stimulus duration and choice delay on visual categorization in pigeons. *Learning and Motivation, 40,* 132-146.
206. Castro, L., & Wasserman, E. A. (2009). Rats and infants as propositional reasoners: A plausible

possibility? *Behavioral and Brain Sciences, 32,* 203-204.
207. Castro, L., Wasserman, E. A., & Matute, H. (2009). Learning about absent events in human contingency judgments. In S. Watanabe, A. P. Blaisdell, L. Huber, & A. Young (Eds.), *Rational animals, irrational humans* (pp. 83-99). Tokyo: Keio University Press.
208. Wasserman, E. A., & Blumberg, M. S. (2009). Evolution of the monkey crouch. *Science, 325,* 812.
209. McMurray, B., & Wasserman, E. (2009). Variability in languages, variability in learning? *Behavioral and Brain Sciences, 32,* 459-460.
210. Wasserman, E. A. (2009). Humans, animals, and computers: Minding machines? *Revista de Psicología, 18,* 25-42.
211. Brooks, D. I., & Wasserman, E. A. (2009). The pigeon as art critic: How a bird can discriminate between good art and bad. Retrieved from: *Scientific American Mind Matters*: http://www.scientificamerican.com/article.cfm?id=the-pigeon-as-art-critic.
212. Lazareva, O. F., & Wasserman, E. A. (2010). Nonverbal transitive inference: Effects of task and awareness on performance. *Behavioural Processes, 83,* 99-112.
213. Castro, L., & Wasserman, E. A. (2010). Effects of stimulus size and spatial organization on pigeons' conditional same-different discrimination. *Behavioural Processes, 83,* 162-171.
214. Castro, L., Lazareva, O. F., Vecera, S. P., & Wasserman, E. A. (2010). Changes in area affect figure-ground assignment in pigeons. *Vision Research, 50,* 497-508.
215. Brooks, D. I., & Wasserman, E. A. (2010). Contrasting object-based and texture-based accounts of Same/Different discrimination learning with trial-unique stimuli. *Journal of Experimental Psychology: Animal Behavior Processes, 36,* 158-163.
216. Castro, L., Kennedy, P. L., & Wasserman, E. A. (2010). Conditional same-different discrimination by pigeons: Acquisition and generalization to novel and few-item displays. *Journal of Experimental Psychology: Animal Behavior Processes, 36,* 23-28.
217. Wasserman, E. A., & Young, M. E. (2010). Same-different discrimination: The keel and backbone of thought and reasoning. *Journal of Experimental Psychology: Animal Behavior Processes, 36,* 3-22.
218. Lazareva, O. F., & Wasserman, E. A. (2010). Category learning and concept learning in birds. In D. Mareschal, P. C. Quinn, & S. E. G. Lea (Eds.), *The making of human concepts.* Oxford: Oxford University Press.
219. Wasserman, E. A., & Blumberg, M. S. (2010). Designing minds: How should we explain the origins of novel behaviors? *American Scientist, 98,* 183-185. https://www.americanscientist.org/article/designing-minds
220. Brooks, D. I., & Wasserman, E. A. (2010). Monitoring same/different discrimination behavior in time and space: Finding differences and anticipatory discrimination behavior. *Psychonomic Bulletin & Review, 17,* 250-256.
221. Soto, F. A., & Wasserman, E. A. (2010). Integrality/separability of stimulus dimensions and multidimensional generalization in pigeons. *Journal of Experimental Psychology: Animal Behavior Processes, 36,* 194-205.
222. Castro, L., & Wasserman, E. A. (2010). Animal learning. In L. Nadel (Ed.), *Wiley Interdisciplinary Reviews: Cognitive Science* (Volume 1, Issue 1, pp. 89-98). Hoboken, NJ: Wiley-Blackwell. http://www3.interscience.wiley.com/cgi-bin/fulltext/123216869/PDFSTART
223. Soto, F. A., & Wasserman, E. A. (2010). Error-driven learning in visual categorization and object recognition: A common elements model. *Psychological Review, 117,* 349-381.
224. Nagasaka, Y., Brooks, D. I., & Wasserman, E. A. (2010). Amodal completion in bonobos. *Learning and Motivation, 41,* 174-186.
225. Wasserman, E. A. (2010). Yoked control procedure. In N. J. Salkind (Ed.), *Encyclopedia of research design*. Thousand Oaks, CA: Sage.
226. Soto, F. A., & Wasserman, E. A. (2010). Comparative vision science: Seeing eye to eye?

Comparative Cognition & Behavior Reviews, 5, 148-154.
227. Soto, F. A., & Wasserman, E. A. (2010). Missing the forest for the trees: Object discrimination learning blocks categorization learning. *Psychological Science, 21,* 1510-1517.
228. Lazareva, O. F., Soto, F. A., & Wasserman, E. A. (2010). Effect of between-category similarity on basic-level superiority in pigeons. *Behavioural Processes, 85,* 236-245.
229. Wasserman, E. A. The evolution of language: Hardwired? (2011). *On the human.* http://onthehuman.org/2011/01/human-language-human-consciousness/comment-page-1/#comment-4215
230. Soto, F. A., & Wasserman, E. A. (2011). Asymmetrical interactions in the perception of face identity and emotional expression are not unique to the primate visual system. *Journal of Vision, 11,* 1-18.
231. Castro, L., & Wasserman, E. A. (2011). The dimensional nature of same-different discrimination behavior in pigeons. *Journal of Experimental Psychology: Animal Behavior Processes, 37,* 361-367.
232. Gibson, B. M., Wasserman, E. A., & Luck, S. J. (2011). Qualitative similarities in the visual working memory of pigeons and people. *Psychonomic Bulletin & Review, 18,* 979-984.
233. Wasserman, E. A., & Castro, L. (2012). Categorical discrimination in humans and animals: All different and yet the same? *Psychology of Learning and Motivation, 56,* 145-184.
234. Soto, F. A., & Wasserman, E. A. (2012). Visual object categorization in birds and primates: Integrating behavioral, neurobiological, and computational evidence within a "general process" framework. *Cognitive, Affective, & Behavioral Neuroscience, 12,* 220-240.
235. Lazareva, O. F., & Wasserman, E. A. (2012). Transitive inference in pigeons: Measuring the associative values of Stimuli B and D. *Behavioural Processes, 89,* 244-255.
236. Soto, F. A., & Wasserman, E. A. (2012). Categorical learning in pigeons. In Norbert M. Seel (Ed.), *Encyclopedia of the sciences of learning*. Heidelberg: Springer-Verlag.
237. Wasserman, E. A., Castro, L., & Freeman, J. H. (2012). Same-different categorization in rats. *Learning & Memory, 19,* 142-145.
238. Soto, F. A., Siow, J. Y. M., & Wasserman, E. A. (2012). View-invariance learning in object recognition by pigeons depends on error-driven associative learning processes. *Vision Research, 62,* 148-161.
239. Soto, F. A., & Wasserman, E. A. (2012). A category-overshadowing effect in pigeons: Support for the common elements model of object categorization learning. *Journal of Experimental Psychology: Animal Behavior Processes, 38,* 322-328.
240. Acerbo, M. J., Lazareva, O. F., McInnerney, J., Leiker, E., Wasserman, E. A., & Poremba, A. (2012). Figure-ground discrimination in the avian brain: The nucleus rotundus and its inhibitory complex, *Vision Research, 70,* 18-26.
241. Wasserman, E. A. (2012). Species, tepees, Scotties, and jockeys: Selected by consequences. *Journal of the Experimental Analysis of Behavior, 98,* 213-226.
242. Wasserman, E. A., & Castro, L. (2012). How special is sameness for pigeons and people? *Animal Cognition, 15,* 891-902.
243. Castro, L., Wasserman, E. A., & Young, M. E. (2012). Variations on variability: Effects of display composition on same-different discrimination in pigeons. *Learning & Behavior, 40,* 416-426.
244. Wasserman, E. A., & Castro, L. (2012). Animal intelligence: How we discover how smart animals really are. *Encyclopedia Britannica Blog:* http://blogs.britannica.com/2012/10/animal-intelligence-how-we-discover-how-smart-animals-really-are
245. Lazareva, O. F., Shimizu, T., & Wasserman, E. A. (2012). *How animals see the world.* New York: Oxford University Press.
246. Lazareva, O. F., & Wasserman, E. A. (2012). Figure-ground segregation and object-based attention in pigeons. In O. F. Lazareva, T. Shimizu, & E. A. Wasserman (Eds.), *How animals see the world.* New York: Oxford University Press.

247. Wasserman, E. A. (2012). Illusory perception in animals: Observations and interpretations. In O. F. Lazareva, T. Shimizu, & E. A. Wasserman (Eds.), *How animals see the world.* New York: Oxford University Press.
248. Wasserman, E. A., & Biederman, I. (2012). Recognition by components: A bird's eye view. In O. F. Lazareva, T. Shimizu, & E. A. Wasserman (Eds.), *How animals see the world.* New York: Oxford University Press.
249. Zentall, T. R., & Wasserman, E. A. (2012). *Oxford handbook of comparative cognition.* New York: Oxford University Press.
250. Wasserman, E. A., & Zentall, T. R. (2012). Comparative cognition: A natural science approach to the study of animal intelligence. In T. R. Zentall & E. A. Wasserman (Eds.), *Oxford handbook of comparative cognition.* New York: Oxford University Press.
251. Cook, R. G., & Wasserman, E. A. (2012). Relational discrimination learning in pigeons. In T. R. Zentall & E. A. Wasserman (Eds.), *Oxford handbook of comparative cognition.* New York: Oxford University Press.
252. Wasserman, E. A., & Castro, L. (2012). Comparative cognition. In R. J. Nelson & S. Mizumori (Ed.), *Handbook of Psychology, Volume 3, Biological Psychology and Neuroscience*. New York: Wiley.
253. Castro, L., & Wasserman, E. A. (2012). Animal cognition. In V. S. Ramachandran (Ed.), *Encyclopedia of human behaviour, second edition*. Oxford: Elsevier.
254. Brooks, D. I., Ng, K. H., Buss, E. W., Marshall, A. T., Freeman, J. H., & Wasserman, E. A. (2013). Categorization of photographic images by rats using shape-based image dimensions. *Journal of Experimental Psychology: Animal Behavior Processes, 39,* 85-92.
255. Castro, L., & Wasserman, E. A. (2013). Information-seeking behavior: Exploring metacognitive control in pigeons. *Animal Cognition, 16,* 241-254.
256. Castro, L., & Wasserman, E. A. (2013). Humans deploy diverse strategies in learning same-different discrimination tasks. *Behavioural Processes, 93,* 125-139.
257. Jitsumori, M., Nakamura, N., & Wasserman, E. A. (2013). Discrimination of coherent and incoherent motion by pigeons: An investigation using a same-different motion discrimination task. *Behavioural Processes, 93,* 116-124.
258. Wasserman, E. A., Nagasaka, Y., Castro, L., & Brzykcy, S. J. (2013). Pigeons learn virtual patterned-string problems in a computerized touchscreen environment. *Animal Cognition, 16,* 737-753.
259. Lazareva, O. F., Young, M. E., & Wasserman, E. A. (2014). A three-component model of relational responding in the transposition paradigm. *Journal of Experimental Psychology: Animal Learning and Cognition, 40,* 63-80.
260. Castro, L., & Wasserman, E. A. (2014). Pigeons' tracking of relevant attributes in categorization learning. *Journal of Experimental Psychology: Animal Learning and Cognition, 40,* 195-211.
261. Zentall, T. R., Wasserman, E. A., & Urcuioli, P. J. (2014). Associative concept learning in animals. *Journal of the Experimental Analysis of Behavior, 101,* 130-151. [2017 Joseph V. Brady Significant Research Contribution Award for the highest impact empirical article published in the *Journal of the Experimental Analysis of Behavior* in the 3 prior years]
262. Urcuioli, P. J., Wasserman, E. A., & Zentall, T. R. (2014). Associative concept learning in animals: Issues and opportunities. *Journal of the Experimental Analysis of Behavior, 101,* 165-170.
263. Maugard, A., Wasserman, E. A., Castro, L., & Fagot, J. (2014). Effects of training condition on the contribution of specific items to relational processing in baboons (*Papio papio*). *Animal Cognition, 17,* 911-924.
264. Wasserman, E. A., Teng, Y., & Castro, L. (2014). Pigeons exhibit contextual cueing to both simple and complex backgrounds. *Behavioural Processes, 104,* 44-52.
265. Vyazovska, O. V., Teng, Y., & Wasserman, E. A. (2014). Attentional tradeoffs in the pigeon. *Journal of the Experimental Analysis of Behavior, 101,* 337-354.

266. Wasserman, E. A., Teng, Y., & Brooks, D. I. (2014). Scene-based contextual cueing in pigeons. *Journal of Experimental Psychology: Animal Learning and Cognition, 40,* 401-418.
267. Soto, F. A., & Wasserman, E. A. (2014). Mechanisms of object recognition: What we have learned from pigeons. *Frontiers in Neural Circuits*, doi: 10.3389/fncir.2014.00122.
268. Brzykcy, S. J., Wasserman, E., A., Nagasaka, Y., & Perez-Acevedo, S. (2014). Validating the virtual string task with the gap test. *Animal Cognition, 17,* 1427-1431.
269. Wasserman, E. A., Brooks, D. I., & McMurray, B. (2015). Pigeons acquire multiple categories in parallel via associative learning: A parallel to human word learning? *Cognition, 136,* 99-122.
270. Smirnova, A., Zorina, Z., Obozova, T., & Wasserman, E. (2015). Crows spontaneously exhibit analogical reasoning. *Current Biology, 25,* 256-260.
271. Castro, L., Wasserman, E. A., Fagot, J., & Maugard, A. (2015). Object-specific and relational learning in pigeons. *Animal Cognition, 18,* 205-218.
272. Teng, Y., Vyazovska, O. V., & Wasserman, E. A. (2015). Selective attention and pigeons' multiple necessary cues discrimination learning. *Behavioural Processes, 112,* 61-71.
273. Castro, L., & Wasserman, E. A. (2015). Crows understand analogies: What birds can teach us about animal intelligence. *Scientific American Mind Matters.* Available: http://www.scientificamerican.com/article/crows-understand-analogies/.
274. Wasserman, E. A., & Brzykcy, S. J. (2015). Pre-crastination in the pigeon. *Psychonomic Bulletin & Review, 22,* 1130-1134.
275. Peissig, J. J., Nagasaka, Y., Young, M. E., Wasserman, E. A., & Biederman, I. (2015). Using the reassignment procedure to test object representation in pigeons and people. *Learning and Behavior, 43,* 188-207.
276. Weisman, R. G., Bouton, M. E., Spetch, M. L., & Wasserman, E. A. (2015). A social history of the founding of the Conference on Comparative Cognition and the Comparative Cognition Society. *Comparative Cognition & Behavior Reviews, 10,* 109-110.
277. Rosenbaum, D. A., & Wasserman, E. A. (2015). Pre-crastination: The opposite of procrastination. *Scientific American Mind Matters.* Available: http://www.scientificamerican.com/article/pre-crastination-the-opposite-of-procrastination/
278. Obozova, T., Smirnova, A., Zorina, Z., & Wasserman, E. (2015). Analogical reasoning in amazons. *Animal Cognition, 18,* 1363-1371.
279. Levenson, R. M., Krupinski, E. A., Navarro, V. M., & Wasserman, E. A. (2015). Pigeons (*Columba livia*) as trainable observers of pathology and radiology breast cancer images. *PLoS ONE*. http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0141357
280. Castro, L., & Wasserman, E. A. (2016). Executive control and task switching in pigeons. *Cognition, 146,* 121-135.
281. Navarro, V. M., & Wasserman, E. A. (2016). Stepwise conceptualization in pigeons. *Journal of Experimental Psychology: Animal Learning and Cognition, 42,* 44-50.
282. Wasserman, E. A., & Cullen, P. (2016). Evolution of the violin: The Law of Effect in action. *Journal of Experimental Psychology: Animal Learning and Cognition, 42,* 116-122.
283. Couto, K. C., Navarro, V. M., Smith, T. R., & Wasserman, E. A. (2016). Concept learning without differential reinforcement in pigeons by means of contextual cueing. *Journal of Experimental Psychology: Animal Learning and Cognition, 42,* 221-227.
284. Wasserman, E. A. (Ed.). (2016). Comparative cognition. *Journal of the Experimental Analysis of Behavior, 105,* 1-229. *(Special Issue)*.
285. Wasserman, E. A. (2016). Conceptualization in pigeons: The evolution of a paradigm. *Behavioural Processes, 123,* 4-14.
286. Castro, L., & Wasserman, E. A. (2016). Attentional shifts in categorization learning: Perseveration but not learned irrelevance. *Behavioural Processes, 123,* 63-73.
287. Lazareva, O. F., & Wasserman, E. A. (2016). No evidence for feature binding by pigeons in a change detection task. *Behavioural Processes, 123,* 90-106.

288. Soto, F. A., & Wasserman, E. A. (2016). Promoting rotational-invariance in object recognition despite experience with only a single view. *Behavioural Processes, 123,* 107-113.
289. Kim, J., Wasserman, E. A., Castro, L., & Freeman, J. H. (2016). Anterior cingulate cortex inactivation impairs rodent visual selective attention and prospective memory. *Behavioral Neuroscience, 130,* 75-90.
290. Wasserman, E. A. (2016). What we make and do can evolve with no end in sight. *This View of Life,* https://www.prosocial.world/posts/what-we-make-and-do-can-evolve-with-no-end-in-sight#content.
291. Wasserman, E. A. (2016). Thinking abstractly like a duck(ling). *Science, 353,* 222-223.
292. Vyazovska, O. V., Navarro, V. M., & Wasserman, E. A. (2016). Stagewise multidimensional visual discrimination by pigeons. *Journal of the Experimental Analysis of Behavior, 106,* 58-74.
293. Roembke, T. C., Wasserman, E. A., & McMurray, B. (2016). Learning in rich networks involves both positive and negative associations. *Journal of Experimental Psychology: General, 145,* 1062-1074.
294. Wasserman, E. A. (2016). Face facts: Even nonhuman animals discriminate human faces. *Learning and Behavior, 44,* 307-308.
295. Lauffer, M. C., Castro, L., & Wasserman, E. A. (2017). Chrysippus' pigeon: Exclusion-based responding in an avian model. *Journal of Experimental Psychology: Animal Learning and Cognition, 43,* 139-146.
296. Wasserman, E., Castro, L., & Fagot, J. (2017). Relational thinking in animals and humans: From percepts to concepts. In J. Call, G. M. Burghardt, I. M. Pepperberg, C. T. Snowdon, & T. Zentall (Eds.), *APA handbook of comparative psychology: Perception, learning, and cognition* (pp. 359–384). American Psychological Association. https://doi.org/10.1037/0000012-017
297. Wasserman, E. A., & Thompson, R. K. R. (2017). Capuchin monkeys can make and use stone tools. *Learning and Behavior, 45,* 103-104.
298. García-Gallardo, D., Navarro, V. M., & Wasserman, E. A. (2017). Assessing the acquisition of anticipatory responding in the pigeon using reaction time. *Journal of Experimental Psychology: Animal Learning and Cognition, 43,* 197-203.
299. Castro, L., & Wasserman, E. A. (2017). Feature predictiveness and selective attention in pigeons' categorization learning. *Journal of Experimental Psychology: Animal Learning and Cognition, 43,* 231-242.
300. Wasserman, E. A., & Scerri, E. R. (2017). Forget the insight of a lone genius – innovation is an evolving process of trial and error. *The Conversation*. https://theconversation.com/forget-the-insight-of-a-lone-genius-innovation-is-an-evolving-process-of-trial-and-error-77760
301. Castro, L., & Wasserman, E. A. (2017). Relational concept learning in birds. In C. ten Cate & S. D. Healy (Eds.), *Avian cognition.* Cambridge, UK: Cambridge University Press, pp. 229-248.
302. Castro, L., & Wasserman, E. A. (2017). Perceptual and abstract category learning in pigeons. In *Handbook of categorization in cognitive science.* In H. Cohen & C. Lefebvre (Eds.). Cambridge, MA: Elsevier. Pp. 709-732.
303. De Corte, B. J., Navarro, V. M., & Wasserman, E. A. (2017). Non-cortical magnitude coding of space and time by pigeons. *Current Biology, 27,* R1249–R1267.
304. Wasserman, E. A. (2017). He's Pavlov and we're the dogs: How Pavlovian conditioning really works in human psychology. *The Conversation*. https://theconversation.com/hes-pavlov-and-were-the-dogs-how-associative-learning-really-works-in-human-psychology-86191
305. Lazareva, O. F., & Wasserman, E. A. (2017). Categories and concepts in animals. In R. Menzel (Ed.), *Learning theory and behavior. Learning and memory: A comprehensive reference 2e, Vol. 1* (J. Byrne, Ed.), pp. 111-139. Oxford: Elsevier.
306. Castro, L., Wasserman, E. A., & Lauffer, M. C. (2018). Unsupervised learning of complex associations in an animal model. *Cognition, 178,* 28-33.
307. Castro, L., & Wasserman, E. A. (2018). Retrospective revaluation. In J. Vonk & T. K. Shackelford

(Eds.), Encyclopedia of animal cognition and behavior. Heidelberg: Springer-Verlag.
308. Vyazovska, O. V., Navarro, V. M., & Wasserman, E. A. (2018). Pigeons deploy selective attention to efficiently learn a stagewise multidimensional visual discrimination task. *Journal of Experimental Psychology: Animal Learning and Cognition, 44,* 162-167.
309. Darby, K. P., Castro, L., Wasserman, E. A., & Sloutsky, V. M. (2018). Cognitive flexibility and memory in pigeons, human children, and adults. *Cognition, 177,* 30-40.
310. Kim, J., Castro, L., Wasserman, E. A., & Freeman, J. H. (2018). Dorsal hippocampus is necessary for visual categorization in rats. *Hippocampus, 28,* 392-405.
311. Wasserman, E. A. (2018). Are there minding machines? *International Journal of Comparative Psychology*. https://escholarship.org/uc/item/8pr291fx
312. Peissig, J. J., Young, M. E., Wasserman, E. A., & Biederman, I. (2019). Pigeons spontaneously form three-dimensional shape categories. *Behavioural Processes, 158,* 70-76.
313. Broschard, M. B., Kim, J., Love, B. C., Wasserman, E. A., & Freeman, J. H. (2019). Selective attention in rat visual category learning. *Learning and Memory, 26,* 84-92.
314. Wasserman, E., Levenson, R., & Navarro, V. (2019). Principle behind Google's April Fools' pigeon prank proves more than a joke. *The Conversation.* https://theconversation.com/principle-behind-googles-april-fools-pigeon-prank-proves-more-than-a-joke-99565
315. Navarro, V. M., Jani, R., & Wasserman, E. A. (2019). Pigeon category learning: Revisiting the Shepard, Hovland, and Jenkins (1961) tasks. *Journal of Experimental Psychology: Animal Learning and Cognition, 45,* 174-184.
316. Rosenbaum, D. A., Fournier, L. R., Levy-Tzedek, S., McBride, D. M., Rosenthal, R., Sauerberger, K., VonderHaar, R. L., Wasserman, E. A., & Zentall, T. R. (2019). Sooner rather than later: Precrastination rather than procrastination. *Current Directions in Psychological Science, 28,* 229-233.
317. Sheridan, C. L., Castro, L., Fonseca, S., & Wasserman, E. A. (2019). The role of category density in pigeons' tracking of relevant information. *Learning and Behavior, 47,* 234-244.
318. De Corte, B. J., & Wasserman, E. A. (2019). Nonhuman sequence learning findings argue against Hoerl and McCormack's two systems of temporal cognition. *Behavioral and Brain Sciences, 42,* e248.
319. Wasserman, E. A. (2019). Precrastination: The fierce urgency of now. *Learning and Behavior, 47,* 7-28.
320. Navarro, V. M., & Wasserman, E. A. (2020). Bidirectional conditioning: Revisiting Asratyan's 'alternating' training technique. *Neurobiology of Learning and Memory, 171,* 1-9.
321. Navarro, V. M., Wasserman, E. A., & Slomka, P. (2020). Taking pigeons to heart: Birds proficiently diagnose human cardiac disease. *Learning and Behavior, 48,* 9-21.
322. Castro, L., Savic, O., Navarro, V. M., Sloutsky, V., & Wasserman, E. (2020). Selective and distributed attention in human and pigeon category learning. *Cognition, 204,* 104350.
323. O'Donoghue, E. M., Broschard, M. B., & Wasserman, E. A. (2020). Pigeons exhibit flexibility but not rule formation in dimensional learning, stimulus generalization, and task switching. *Journal of Experimental Psychology: Animal Learning and Cognition, 46,* 107-123.
324. Hochmann, J-R., Wasserman, E., & Carey, S. (2021). Editorial overview: Same-different conceptualization. *Current Opinion in Behavioral Sciences, 37,* iii-v.
325. Wasserman, E. A., Young, M. E., & Castro, L. (2021). Mechanisms of same–different conceptualization: entropy happens! *Current Opinion in Behavioral Sciences, 37,* 19-28.
326. Smirnova, A. A., Obozova, T. A., Zorina, Z. A., & Wasserman, E. A. (2021). How do crows and parrots come to spontaneously perceive relations-between-relations? *Current Opinion in Behavioral Sciences, 37,* 109-117.
327. Wasserman, E. A. (2021). *As if by design: How creative behaviors really evolve.* Cambridge University Press.
328. Chandel, H., Boring, M., Zentall, T. R., & Wasserman, E. A. (2021). Should I stay or should I go?

Pigeons' *(Columba livia)* performance of a foraging task has implications for optimal foraging theory and serial pattern learning. *Journal of Comparative Psychology, 135,* 266-272.
329. O'Donoghue, E. M., & Wasserman, E. A. (2021). Pigeons proficiently switch among four tasks without cost. *Journal of Experimental Psychology: Animal Learning and Cognition, 47,* 150-162.
330. Castro, L., Yang, S., Savic, O., Sloutsky, V., & Wasserman, E. (2021). Not all exceptions are created equal: Learning of exceptions in pigeons' categorization. *Psychonomic Bulletin & Review, 28,* 1344-1353.
331. Broschard, M. B., Kim, J., Love, B. C., Wasserman, E. A., & Freeman, J. H. (2021). Prelimbic cortex maintains attention to category-relevant information and flexibly updates category representation. *Neurobiology of Learning and Memory, 185,* 1-14.
332. Delamater, A. R., & Wasserman, E. A. (2021). Comparative cognition—Conceptual and methodological advancements. *Journal of Experimental Psychology: Animal Learning and Cognition, 47,* 219-222.
333. Castro, L., Wiger, E. R., & Wasserman, E. A. (2021). Focusing and shifting attention in pigeon category learning. *Journal of Experimental Psychology: Animal Learning and Cognition, 47,* 371-383.
334. Diaz, F., O'Donoghue, E. M., & Wasserman, E. A. (2021). Two-item conditional same-different categorization in pigeons: Finding differences. *Journal of Experimental Psychology: Animal Learning and Cognition, 47,* 455-463.
335. Wasserman, E. (2021). What Paul McCartney's 'The Lyrics' can teach us about harnessing our creativity. *The Conversation.* https://theconversation.com/what-paul-mccartneys-the-lyrics-can-teach-us-about-harnessing-our-creativity-170987
336. Wasserman, E. A., & Castro, L. (2021). Assessing attention in category learning by animals. *Current Directions in Psychological Science, 30,* 495-502.
337. O'Donoghue, E. M., Broschard, M. B., Freeman, J. F., & Wasserman, E. A. (2022). The Lords of the Rings: People and pigeons take different paths mastering the Concentric-Rings categorization task. *Cognition, 218,* 104920.
338. O'Donoghue, E. M., Diaz, F., Navarro, V. M. & Wasserman, E. A. (2022). It's not all the same to pigeons: Representations of difference may be shared across species. *Psychonomic Bulletin & Review, 29,* 882-890.
339. Wasserman, E. A., & Castro, L. (2022). The Rescorla-Wagner Model: The culmination of Hume's theory of causation. *Journal of Experimental Psychology: Animal Learning and Cognition, 48,* 315-320.
340. O'Donoghue, E. M., Castro, L., & Wasserman, E. A. (2022). Hierarchical and configural control in conditional discrimination learning. *Journal of Experimental Psychology: Animal Learning and Cognition, 48,* 370-382.
341. Wasserman, E. A. (2023). Minding behavior. *Journal of the Experimental Analysis of Behavior, 119,* 203-208.
342. Wasserman, E. A. (2023). A deep dive into innovation. *American Scientist, 111,* 50-54. https://www.americanscientist.org/article/a-deep-dive-into-innovation
343. Wasserman, E. A., Kain, A. G., & O'Donoghue, E. M. (2023). Resolving the associative learning paradox by category learning in pigeons. *Current Biology, 33,* 1112-1116.e2. https://doi.org/10.1016/j.cub.2023.01.024
344. Wasserman, E. A. (2023). On the origin of the Post-it note: Intelligently designed? *Skeptical Inquirer, 47,* 52-56. https://skepticalinquirer.org/2023/06/on-the-origin-of-the-post-it-note-intelligently-designed/
345. Wasserman, E. A. (2023). The lightbulb moment, innovation's most misleading meme. *Association for Psychological Science Observer*, https://www.psychologicalscience.org/observer/the-lightbulb-moment
346. Turner, B. M., & Wasserman, E. A. (2023). The pigeon as a machine: Complex category

structures can be acquired by a simple associative model. *iScience, 26,* 107998.
347. Diaz, F., & Wasserman, E. A. (2023). The role of numerical and nonnumerical magnitudes in pigeons' conditional discrimination behavior. *Journal of Experimental Psychology: Animal Learning and Cognition, 49,* 253-272.
348. Navarro, V. M., Boehme, N., Wasserman, E. A., & Harper, M. M. (2024). Enhanced attention in rats following blast-induced traumatic brain injury. *Heliyon, 10,* e25661.
349. Wasserman, E. A., Turner, B. M., & Güntürkün, O. (2024). The pigeon as a model of complex visual processing and category learning. *Neuroscience Insights, 29,* 1-5.
350. Wasserman, E. A. (2024). The oldest living land animal teaches a master class in Pavlovian conditioning. *Association for Psychological Science Observer*, https://www.psychologicalscience.org/publications/observer/oldest-land-animal-pavlovian-conditioning.html
351. Navarro, V. M., & Wasserman, E. A. (2025). Humans exhibit associative symmetry in the absence of backward training and stimulus overlap. *Journal of the Experimental Analysis of Behavior, 124,* 1-11.
352. Wasserman, E. A. (2025). Decoupling design from Darwinian and Skinnerian selection. *Perspectives on Behavior Science.* https://doi.org/10.1007/s40614-025-00476-y
353. O'Donoghue, E. M., & Wasserman, E. A. (2026). A comparative investigation of task switching performance in category learning paradigms. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 52*, 1543-1561.
354. Castro, L., Albrecht-Buehler, A., & Wasserman, E. A. (2026). Focused and distributed: Diverse attentional profiles in pigeon category learning. *Learning and Behavior, 54,* 272-287. https://doi.org/10.3758/s13420-026-00706-6
355. Orr, O. R. P., Navarro, V. M., Wasserman, E. A., & Ouyang, D. (2026). Categorization of echocardiograms by humans and pigeons. *Frontiers in Psychology*. https://doi.org/10.3389/fpsyg.2025.1680346
356. Wasserman, E. A., Orr, O. R. P., & Li, S. (2026). Variability, stability, and the Law of Effect. *Journal of Experimental Psychology: Animal Learning and Cognition, 52,* 129-138.
357. Wasserman, E. A. (2026). The siren song of animal consciousness. *Comparative Cognition & Behavior Review, 21,* 71-75. https://comparative-cognition-and-behavior-reviews.org/vol21_Wasserman/
358. Orr, O. R. P., Wasserman, E. A., & Nosofsky, R. M. (in press). A psychological-scaling approach to unraveling the nature of pigeons' categorization of natural visual objects. *Psychological Review*.
359. Diaz, F., Castro, L., Qu, C., Brannon, E. M., & Wasserman, E. A. (in press). Humans and pigeons overestimate numerosity in coherent visual displays. *Journal of Vision*.
360. Diaz, F., & Wasserman, E. A. (2026). Nonnumerical stimuli exert surprisingly strong behavioral control in an unconstrained numerical discrimination learning task. *Cognition, 274*. 106552. https://doi.org/10.1016/j.cognition.2026.106552
361. Yim, H., Castro, L., Myung, J. I., Wasserman, E. A., & Sloutsky, V. M. (in press). Supervision, category structure, and selective attention in category learning: A comparative approach. *Journal of Comparative Psychology*.

Papers Presented

1. Wasserman, E. A., & Jensen, D. D. Pheromones and the "pseudo-extinction" effect. Midwestern Psychological Association, 1969.
2. Browne, M. P., Wasserman, E. A., & Dinsmoor, J. A. Selective observing during auditory discrimination learning. Psychonomic Society, 1971.
3. Dinsmoor, J. A., Browne, M. P., Lawrence, C. E., & Wasserman, E. A. A new analysis of Wyckoff's observing response. American Psychological Association, 1971.
4. Wasserman, E. A., Markman, B., & Hearst, E. Auto-shaping and contextual illumination: Selection of behavior and its orientation toward the most predictive cue. Psychonomic Society, 1971.
5. Wasserman, E. A. Key-peck persistence on autoshaping procedures. American Psychological Association, 1973.
6. Wasserman, E. A. Pavlovian conditioning of stimulus-directed pecking in chicks with thermal reinforcement. Animal Behavior Society, 1973.
7. Wasserman, E. A. Selective discrimination learning in pigeons. Midwestern Psychological Association, 1973.
8. Wasserman, E. A. Temporal locus of reinforcement during no-CS and approach-withdrawal to CS in pigeons. Psychonomic Society, 1974.
9. Wasserman, E. A. On-key and off-key pecking under autoshaping and omission schedules. Midwestern Psychological Association, 1975.
10. Deich, J. D., & Wasserman, E. A. Key pecking under autoshaping and selective omission schedules. Midwestern Association of Behavior Analysis, 1975.
11. Nelson, K. R., & Wasserman, E. A. Effects of partial reinforcement on autoshaped key pecking under response-independent and omission schedules. Midwestern Psychological Association, 1976.
12. Deich, J. D., & Wasserman, E. A. Autoshaping the chick's key peck: Trace conditioning at short and long interstimulus intervals. Midwestern Psychological Association, 1976.
13. Wasserman, E. A. Studying response-reinforcer influences on autoshaped behavior. Midwestern Psychological Association, 1977. *Invited paper.*
14. Taylor, F. F., & Wasserman, E. A. Autoshaping the pigeon's key peck with increasing CS-US intervals: Inhibition of delay. Midwestern Psychological Association, 1977.
15. Nelson, K. R., & Wasserman, E. A. Temporal factors influencing the pigeon's successive matching-to-sample performance: Sample duration, intertrial interval, and retention interval. Midwestern Psychological Association, 1977.
16. Deich, J. D., & Wasserman, E. A. Reinforcement of observing behavior. Midwestern Psychological Association, 1977.
17. Wasserman, E. A., Carr, D. L., & Deich, J. D. Association of conditioned stimuli during serial conditioning. Psychonomic Society, 1977.
18. Wasserman, E. A. The occurrence of motor and secretory behaviors during classical appetitive conditioning. Psychonomic Society, 1977.
19. Lucas, G. A., & Wasserman, E. A. Autoshaping: The interaction of stimulus-reinforcer and response-reinforcer dependencies. Midwestern Psychological Association, 1978.
20. Wasserman, E. A., & Larew, M. B. The retention of stimulus order by pigeons. American Psychological Association, 1978.
21. Lucki, I., Nelson, K. R., & Wasserman, E. A. Rate-dependent effects of amphetamine on successive matching-to-sample performance in the pigeon. Midwestern Psychological Association, 1979.
22. Nelson, K. R., & Wasserman, E. A. Proactive effects on associative memory in the successive matching procedure. Midwestern Psychological Association, 1979.
23. Wasserman, E. A. Delayed simple and conditional discrimination in the pigeon. Psychonomic Society, 1979.
24. Wasserman, E. A. Successive matching-to-sample: Application of Konorski's paradigm to

processes of memory in animals. Association for Behavior Analysis, 1980. *Invited symposium paper.*

25. Wasserman, E. A., Deich, J. D., & Cox, K. E. The learning and memory of response sequences. Harvard Symposium on Quantitative Analyses of Behavior: Acquisition, 1980. *Invited paper.*
26. Wasserman, E. A. The effects of time tags on pigeon short-term memory. Psychonomic Society, 1980.
27. Wasserman, E. A. Memory and the operant. Association for Behavior Analysis, 1981. *Invited address.*
28. Wasserman, E. A., & DeLong, R. E. Prospection and retrospection in animal memory. American Psychological Association, 1981.
29. Wasserman, E. A., & Olson, M. W. Delayed control by prior excitatory and inhibitory stimuli. American Psychological Association, 1981.
30. Wasserman, E. A., & Shaklee, H. Perceiving the relationship between responses and outcomes. Psychonomic Society, 1981.
31. Wasserman, E. A. Animal intelligence: Understanding the minds of animals through their behavioral "ambassadors." Harry Frank Guggenheim Conference on Animal Cognition, 1982. *Invited paper.*
32. Wasserman, E. A. Is cognitive psychology behavioral? Association for Behavior Analysis, 1982. *Invited symposium paper.*
33. Neunaber, D. J., Wasserman, E. A., & O'Hara, M. W. Judgment of control and operant responding in depressed and nondepressed college students. Association for the Advancement of Behavior Therapy, 1982.
34. Wasserman, E. A., Schlapkohl, R. J., & Olson, M. W. Do pigeons forage optimally from progressive and fixed ratio alternatives? Psychonomic Society, 1982.
35. Wasserman, E. A., DeLong, R. E., & Larew, M. B. Temporal order and duration: Their discrimination and retention by pigeons. New York Academy of Sciences Conference on Timing and Time Perception, 1983. *Invited paper.*
36. Wasserman, E. A., Neunaber, D. J., Chatlosh, D. L., & O'Hara, M. W. Judgment of cause-effect relations by college students. Psychonomic Society, 1983.
37. Wasserman, E. A. Response to and judgment of operant schedules by college students. Association for Behavior Analysis, 1984. *Invited address.*
38. Olson, M. W., & Wasserman, E. A. The pigeon's response to foraging contingencies. Association for Behavior Analysis, 1984. *Invited symposium paper.*
39. Wasserman, E. A. Animal rights and behavior analysis: Perspectives from comparative psychology. Association for Behavior Analysis, 1984. *Invited symposium paper.*
40. Wasserman, E. A., Bhatt, R. S., Neunaber, D. J., Chatlosh, D. L., & Dorfman, D. D. Relative contiguity: Toward a time-based theory of operant behavior. Psychonomic Society, 1984.
41. Shaklee, H., & Wasserman, E. A. Judging interevent contingencies: Being right for the wrong reasons. Psychonomic Society, 1984.
42. Wasserman, E. A. Do animals have minds? Exploring the concept of mind. Humanities symposium, The University of Iowa, 1985.
43. Wasserman, E. A., & Chatlosh, D. L. Temporal discrimination: Pigeons' performance under two different procedures. American Psychological Association, 1985.
44. Wasserman, E. A., & Neunaber, D. J. Different rating procedures affect judgments of causal relations. American Psychological Association, 1985.
45. Chatlosh, D. L., & Wasserman, E. A. Differential reinforcement expectancies as a source of stimulus control in pigeons' successive matching-to-sample performance. Midwestern Psychological Association, 1985.
46. Chatlosh, D. L., Guttenberger, V. T., Morgan, S., & Wasserman, E. A. Delayed position and stimulus discriminations in pigeons. Midwestern Psychological Association, 1985.

47. Wasserman, E. A. The effects of contingency and contiguity on causal perception: Implications for helplessness and depression. Association for Advancement of Behavior Therapy, 1985.
48. Neunaber, D. J., Wasserman, E. A., & O'Hara, M. W. Perception of response-outcome relations by depressed and nondepressed individuals. Association for Advancement of Behavior Therapy, 1985.
49. Solomon, R. E., Wasserman, E. A., & Gebhart, G. F. Dissociation of functional tolerance from other types of tolerance to the effects of morphine on schedule-controlled behavior. Society for Neuroscience, 1985.
50. Wasserman, E. A., Hussar, K. A., & Bhatt, R. S. Disentangling effects of delay of reinforcement from rate of reinforcement. Psychonomic Society, 1985.
51. Wasserman, E. A., & Moore, J. Some comments on the temporal law of effect. Association for Behavior Analysis, 1986. *Invited address.*
52. Wasserman, E. A. Animal memory: Evaluating the cornerstone of the science of nonhuman cognition. Midwestern Psychological Association, 1986. *Symposium organizer.*
53. Wasserman, E. A. Short-term memory of dimension and value information in pigeons. Midwestern Psychological Association, 1986. Symposium paper.
54. Neunaber, D. J., Chatlosh, D. L., & Wasserman, E. A. Discriminating contingent from noncontingent reinforcement: Response to and report of changing and unchanging schedules of reinforcement. Association for Behavior Analysis, 1986. *Invited symposium paper*.
55. Chatlosh, D. L., & Wasserman, E. A. Three-dimensional discrimination learning and selective attention in pigeons. Psychonomic Society, 1986.
56. Chatlosh, D. L., Elek, S. M., & Wasserman, E. A. Causal judgment: Mapping the response-outcome contingency space. Midwestern Psychological Association, 1987.
57. Bhatt, R. S., & Wasserman, E. A. Acquisition and generalization of a four-category discrimination by pigeons. Psychonomic Society, 1987.
58. Olson, M. W., & Wasserman, E. A. Sensitivity to within-patch food parameters. American Psychological Association, 1987. *Invited symposium paper.*
59. Wasserman, E. A., & Bhatt, R. S. Memory and concepts in pigeons. International Congress of Psychology, 1988. *Invited symposium paper.*
60. Chatlosh, D. L., & Wasserman, E. A. Compound stimulus control in pigeons: A new test of blocking. Midwestern Psychological Association, 1988.
61. Bhatt, R. S., & Wasserman, E. A. Effects of category size on categorization learning and generalization. Psychonomic Society, 1988.
62. Bhatt, R. S., & Wasserman, E. A. Selective attention, secondary generalization, and categorization in pigeons. Midwestern Psychological Association, 1989.
63. Gormezano, I., & Wasserman, E. A. Learning and memory: The behavioral and biological substrates. Second biennial symposium organizers. The University of Iowa, 1989.
64. Wasserman, E. A., & Chatlosh, D. L. Memory and expectancy in delayed discrimination procedures. Second biennial symposium on learning and memory. The University of Iowa, 1989.
65. West, J. R., Goodlett, C. R., Bonthius, D. J., & Wasserman, E. A. Learning deficits in a radial maze task in adult rats exposed to alcohol during the neonatal brain growth spurt. Research Society on Alcoholism, 1989.
66. Wasserman, E. A. Conceptualization of natural and artificial stimuli by pigeons. Conference on cognitive aspects of stimulus control. Dalhousie University, 1989. *Invited paper.*
67. Wasserman, E. A. Conceptualization in animals: Evidence from the pigeon. American Psychological Association, 1989. *New Fellow address.*
68. Goodlett, C. R., Bonthius, D. J., Wasserman, E. A., & West, J. R. Deficits in radial maze learning in adult rats following alcohol exposure during the brain growth spurt: Association of working memory impairments with CA1 neuron loss. Society for Neuroscience, 1989.
69. Wasserman, E. A., Tassinary, L. G., Bhatt, R. S., & Sayasenh, P. Pigeons discriminate emotion and identity from photographs of the human face. Psychonomic Society, 1989.

70. DeVolder, C. L., Wasserman, E. A., & Biederman, I. Perceptual processes of visual categorization in pigeons: Recognition-by-components? Midwestern Psychological Association, 1990.
71. Kao, S. F., Levin, I. P., & Wasserman, E. A. Contingency judgment: Unequal effects of cell information. Midwestern Psychological Association, 1990.
72. Wasserman, E. A. Origin of directed action: The role of stimulus-reinforcer relations. Midwestern Psychological Association, 1990. *Invited symposium paper.*
73. Thomas, J. D., Gionet, T. X., Goodlett, C. R., Warner, D. S., Todd, M. M., Wasserman, E. A., & West, J. R. Forebrain ischemia induces selective behavioral impairments associated with hippocampal CA1 injury. Society for Neuroscience, 1990.
74. Wasserman, E. A., DeVolder, C. L., Van Hamme, L. J., & Biederman, I. Recognition by components: Comparative evaluations of visual discriminations by pigeons. Psychonomic Society, 1990.
75. Levin, I. P., Wasserman, E. A., & Kao, S. F. Multiple methods for examining contingency judgments. Psychonomic Society, 1990.
76. Wasserman, E. A. Conceptual coherence in pigeons: Assessing the structure of visual categories. Midwestern Psychological Association, 1991. *Invited paper.*
77. Levin, I. P., Kao, S. F., & Wasserman, E. A. Biased information usage in contingency judgments. Midwestern Psychological Association, 1991.
78. DeVolder, C. L., & Wasserman, E. A. Strategic shift in the retrospective and prospective processing of visual forms. Midwestern Psychological Association, 1991.
79. Chatlosh, D. L., Franson, D. K., & Wasserman, E. A. Operant learning in college students: Behavioral effects of unsignaled changes in the controllability of outcomes. Midwestern Psychological Association, 1991.
80. Thomas, J. D., Goodlett, C. R., Wasserman, E. A., & West, J. R. Motor coordination deficits associated with cerebellar damage in adult rats induced by alcohol exposure during the brain growth spurt. Research Society on Alcoholism, 1991.
81. Wasserman, E. A., & Astley, S. L. A Spencian model of categorization. Psychonomic Society, 1991.
82. Wasserman, E. A. Comparative cognition: Toward a general understanding of cognition in behavior. Psychonomic Society, 1991. *Invited symposium paper.*
83. Levin, I. P., Kao, S. F., & Wasserman, E. A. Learning effects and cell information use in contingency judgments. Society for Judgment and Decision Making, 1991.
84. Chatlosh, D. L., & Wasserman, E. A. Multidimensional stimulus control in pigeons: Selective attention and other issues. Animal cognition: A conference honoring Donald A. Riley, 1991. *Invited paper.*
85. Thomas, J. D., Goodlett, C. R., Andersen, K. H., Wasserman, E. A., & West, J. R. Behavioral deficits induced by short-term exposure to alcohol during the brain growth spurt. Research Society on Alcoholism, 1992.
86. Thomas, J. D., Coppage, D. J., & Wasserman, E. A. Generalization and discrimination of natural stimuli by pigeons. Midwestern Psychological Association, 1992.
87. Astley, S. L., & Wasserman, E. A. Discrimination of simulated human faces by pigeon subjects. Midwestern Psychological Association, 1992.
88. Wasserman, E. A. Similarity- and nonsimilarity-based conceptualization. Harvard Symposium on Quantitative Analyses of Behavior: Stimulus Relations, 1992. *Invited paper.*
89. Biederman, I., & Wasserman, E. A. Processes of visual object conceptualization. Psychonomic Society, 1993. *Invited symposium organizers.*
90. Wasserman, E. A. Object conceptualization by pigeons. Psychonomic Society, 1993. *Invited symposium paper.*
91. Wasserman, E. A., Kirkpatrick-Steger, K., Oden, G. C., & Biederman, I. Pigeons differentially observe drawings that differ only in spatial organization. Psychonomic Society, 1993.

92. Wasserman, E. A. Conceptualization in animals: A behavioral analysis. American Psychological Association, 1993. *Invited address.*
93. Thomas, J. D., Goodlett, C. R., Wasserman, E. A., & West, J. R. Long-lasting learning deficits in rats depend on timing of alcohol exposure during the brain growth spurt. Research Society on Alcoholism, 1993.
94. Wasserman, E. A. Conceptual behavior in pigeons. Midwestern Psychological Association, 1993. *Invited paper.*
95. Kirkpatrick-Steger, K., Wasserman, E. A., Van Hamme, L. J., & Biederman, I. Pigeons are sensitive to the spatial organization of complex visual stimuli. Midwestern Psychological Association, 1993.
96. Van Hamme, L. J., & Wasserman, E. A. Associative mechanisms of causality judgments. Midwestern Psychological Association, 1993.
97. Gagliardi, J. L., Wasserman, E. A., & Biederman, I. Pigeons recognize objects rotated in depth. Midwestern Psychological Association, 1993.
98. Kao, S. F., & Wasserman, E. A. Applicability of information integration theory to contingency judgment. Midwestern Psychological Association, 1993.
99. Wasserman, E. A. Short-term memory: Long-term remembrances. Midwestern Psychological Association, 1993. *Invited symposium paper.*
100. Wasserman, E. A. Strategies for revitalizing the field of comparative cognition. Conference on Comparative Cognition, 1994.
101. Wasserman, E. A. Causal perception: The meeting ground of cognitivism and associationism. Midwestern Psychological Association, 1994. *Symposium organizer.*
102. Kirkpatrick-Steger, K., Wasserman, E. A., & Betti, C. The development of temporal responding on the peak procedure. Midwestern Psychological Association, 1994.
103. Wasserman, E. A. Basic level and superordinate concepts in pigeons and people. Association for Behavior Analysis, 1994. *Invited symposium paper*.
104. Kirkpatrick-Steger, K., Wasserman, E. A., & Biederman, I. Effects of spatial rearrangement of object components on picture recognition in pigeons. Psychonomic Society, 1994.
105. Wasserman, E. A. Peristeronic cognition: Basic, superordinate, and abstract concepts in pigeons. Conference on Comparative Cognition, 1995.
106. Wasserman, E. A. Conceptual behavior in pigeons: Basic, superordinate, and abstract concepts. Rocky Mountain Psychological Association, 1995. *Invited address*.
107. Kirkpatrick-Steger, K., Hall, F. D., & Wasserman, E. A. The what and the where of the pigeon's processing of complex visual stimuli. Midwestern Psychological Association, 1995.
108. DeVolder, C. L., Tranel, D., & Wasserman, E. A. Disruption in memory performance following frontal or temporal lobe damage. Psychonomic Society, 1995.
109. Kirkpatrick-Steger, K., Wasserman, E. A., & Biederman, I. Effects of deletion, movement, and scrambling of object components on picture perception in pigeons. Psychonomic Society, 1995.
110. Wasserman, E. A. Behavior and cognition: The case for conceptualization in pigeons. Southeastern Association for Behavior Analysis, 1995. *Invited address*.
111. Wasserman, E. A. Much ado about nothing: The role of nonpresented stimuli in human causal judgment. Conference in honor of Eliot Hearst, 1996.
112. Wasserman, E. A. Contingency judgment: Data, theory, and implications for psychological science. XXVI International Congress of Psychology, 1996. *Invited symposium convener.*
113. Kao, S. F., & Wasserman, E. A. Information integration and associative learning as accounts of human contingency judgment. XXVI International Congress of Psychology, 1996.
114. Katagiri, M., Kao, S. F., Wasserman, E. A., & Simon, A. Ratings of causal efficacy under constant and changing interevent contingencies. XXVI International Congress of Psychology, 1996.
115. Kirkpatrick-Steger, K., & Wasserman, E. A. Picture perception in pigeons. Conference on Comparative Cognition, 1996.

116. Young, M. E., Johnson, J. L., & Wasserman, E. A. Positive and negative patterning in a human causal judgment task. Psychonomic Society, 1996.
117. Wasserman, E. A., & Young, M. E. Abstraction in people and pigeons. Conference on Comparative Cognition, 1997.
118. Peissig, J. J., Young, M. E., Wasserman, E. A., & Biederman, I. The pigeon's discrimination of single geons rotated in depth. Midwestern Psychological Association, 1997.
119. Astley, S. L., & Wasserman, E. A. Transfer from novel to familiar stimuli in superordinate category formation. Midwestern Psychological Association, 1997.
120. Astley, S. L., Wasserman, E. A., & Hawkins, J. Superordinate categories: Is association with a common delay to reinforcement sufficient for their creation? Midwestern Psychological Association, 1997.
121. Wasserman, E. A. Comparing human and animal behavior: A key component for unifying psychological science. American Psychological Society, 1997. *Invited symposium organizer*.
122. Wasserman, E. A. Interrelations between associative learning in animals and causal judgment in humans. American Psychological Society, 1997.
123. Wasserman, E. A., & Rovee-Collier, C. Linking human and animal behavior: Concepts and categories in human infants and pigeons. American Psychological Association, 1997.
124. Wasserman, E. A., & Young, M. E. Abstraction in people and pigeons. American Psychological Association, 1997. *Invited address*.
125. Young, M. E., Johnson, J. L., & Wasserman, E. A. Occasion setting in a causal induction task. Psychonomic Society, 1997.
126. Wasserman, E. A., & Young, M. E. The classification of display variability by people and pigeons. Psychonomic Society, 1997.
127. Wasserman, E. A. Conceptualization in humans and animals. Congress of the Spanish Society of Comparative Psychology, 1997. *Invited address*.
128. Wasserman, E. A. Conceptualization: It's not just for humans anymore. Eastern Psychological Association, 1998. *Invited address*.
129. Young, M. E., & Wasserman, E. A. Successive same-different discrimination in pigeons: Data and theory. Conference on Comparative Cognition, 1998.
130. Wasserman, E. A. Conceptualization by pigeons. Southwestern Psychological Association, 1998. *Invited address*.
131. Astley, S., & Wasserman, E. A. Superordinate categorization via association with differential delays and probabilities of reinforcement. Midwestern Psychological Association, 1998.
132. Wilson, J. M., Young, M. E., & Wasserman, E. A. Attentional tradeoffs in pigeons learning to discriminate complex visual stimuli. Society for Neuroscience, 1998.
133. Young, M. E., Johnson, J. L., & Wasserman, E. A. Occasion setting in causal induction: The importance of temporal relations among the candidate causes. Judgment and Decision Making Society, 1998.
134. Young, M. E. & Wasserman, E. A. Discriminating differences in categorical variability. Psychonomic Society, 1998.
135. Peissig, J. J., Young, M. E., Wasserman, E. A., & Biederman, I. The pigeon's discrimination of single geons rotated in depth. Psychonomic Society, 1998.
136. Wasserman, E. A. Entropy detection by pigeons and people. Southwestern Psychological Association, 1999. *Invited paper*.
137. Peissig, J. J., Young, M. E., Wasserman, E. A., & Biederman, I. The pigeon's ability to form a generalized structural description. Cognitive Neuroscience Society, 1999.
138. Wasserman, E. A., Peissig, J. J., & Astley, S. L. Reinforcement mechanisms of superordinate category formation by pigeons. Conference on Comparative Cognition, 1999.
139. Astley, S. L., Wasserman, E. A., & Peissig, J. J. Binding of categorical stimuli by different numbers of pellet reinforcers: Will categorization transfer to the reinforcers themselves? Midwestern

Psychological Association, 1999.

140. Young, M. E. & Wasserman, E. A. Entropy detection by pigeons and people. Midwestern Psychological Association, 1999. *Invited paper*.
141. Elek, S. M., Chatlosh, D. L., & Wasserman, E. A. Detecting response-consequence contingency in social and nonsocial settings. Small group meeting on classic and connectionist approaches to causal inference and social judgment (Sponsored by the European Association of Experimental Social Psychology and the Belgian FWO Research Community), 1999. *Invited paper*.
142. Wasserman, E. A. Configural and elemental processing in complex discrimination learning. Special-interest meeting on cue competition in associative learning (Sponsored by the European Association of Experimental Social Psychology and the Belgian FWO Research Community), 1999. *Invited paper*.
143. Young, M. E., Wasserman, E. A., & Dierking, K. L. Faster learning of causal interactions when causes are presented serially. Psychonomic Society, 1999.
144. Peissig, J. J., Young, M. E., Wasserman, E. A., & Biederman, I. Stimulus size and the pigeon's ability to recognize objects. Psychonomic Society, 1999.
145. Peissig, J. J., Young, M. E., Wasserman, E. A., & Biederman, I. Object recognition in pigeons: The role of stimulus features. Annual workshop on Object Perception and Memory (OPAM), 1999.
146. Wasserman, E. A. Same-different conceptualization by pigeons and baboons. International Symposium on the "Phylogeny of Cognition and Language," 2000. *Invited plenary presentation*.
147. Wasserman, E. A., Fagot, J., & Young, M. E. Same-different conceptualization by baboons (*Papio papio*): The role of entropy. Conference on Comparative Cognition, 2000.
148. Fagot, J., Young, M. E., & Wasserman, E. A. Relational matching by baboons. Conference on Comparative Cognition, 2000.
149. Shu, S., Young, M.E., & Wasserman, E. A. Number interpolation and extrapolation by pigeons. Psychonomic Society, 2000.
150. Young, M.E., & Wasserman, E. A. Predictive learning: The effects of attentional capacity and cue order. Psychonomic Society, 2000.
151. Wasserman, E. A. Instructed and uninstructed relational perception by pigeons. Conference on Comparative Cognition, 2001.
152. Peissig, J. J., Wasserman, E. A., Young, M. E., & Biederman, I. Object recognition in pigeons: The effects of a dynamic light source. Conference on Comparative Cognition, 2001.
153. Young, M.E., & Wasserman, E. A. Visual variability discrimination in the pigeon is not determined by spatial regularity. Vision Sciences Society, 2001.
154. Wasserman, E. A., DiPietro, N. T., & Young, M. E. The effects of occlusion on pigeons' object recognition. Vision Sciences Society, 2001.
155. Wasserman, E. A., & Neuringer, A. Adapting to a changing world: Variability of stimuli, responses, and strategies. American Psychological Association, 2001. *Invited symposium organizers*.
156. Wasserman, E. A., & Young, M. E. Stimulus variability and the control of human and animal behavior. American Psychological Association, 2001. *Invited symposium paper*.
157. Peissig, J. J., Young, M. E., Wasserman, E. A., & Biederman, I. The pigeon's recognition of depth rotated objects. Psychonomic Society, 2001.
158. Young, M. E., Ellefson, M. R., & Wasserman, E. A. Spatial organization and perceived variety. Judgment and Decision Making Society, 2001.
159. Frank, A. J., Murphy, M. W., & Wasserman, E. A. Same-different discrimination of 2-icon displays using differential reinforcement of response rate schedules. Conference on Comparative Cognition, 2002.
160. Gibson, B. M., & Wasserman, E. A. Pigeons learn both stimulus identity and stimulus relations during a same-different discrimination task. Conference on Comparative Cognition, 2002.

161. Young, M. E., & Wasserman, E. A. A computational model of variability discrimination: Finding differences. Society for the Quantitative Analysis of Behavior, 2002. *Invited paper*.
162. Peissig, J. J., Young, M.E., Wasserman, E. A., & Biederman, I. Object recognition in pigeons: The effects of spatial frequencies. Vision Sciences Society, 2002.
163. Wasserman, E. A. Creating equivalent stimuli through conditioning. Midwestern Psychological Association, 2002. *Invited symposium paper*.
164. Castro, L., Young, M. E., & Wasserman, E. A. Aprendizaje del concepto igual-diferente en palomas: Entropía y similitude. La Sociedad Española de Psicología Experimental, 2002.
165. Wasserman, E. A. Nature's Turing test: Perceptual classes. Cognitive Science Society, 2002. Symposium paper.
166. Wasserman, E. A., & Castro, L. Much ado about nothing: Reassessing absent stimuli in causal learning. American Psychological Association, 2002. *Invited symposium paper*.
167. Lazareva, O. F., Levin, J., Vecera, S. P., & Wasserman, E. A. Object-based attention in pigeons? Annual workshop on Object Perception and Memory (OPAM), 2002.
168. Lazareva, O. F., & Wasserman, E. A. Transposition in pigeons and people? Psychonomic Society, 2002.
169. Frank, A. J., & Wasserman, E. A. Associative symmetry in the pigeon. Conference on Comparative Cognition, 2003.
170. Lazareva, O. F., & Wasserman, E. A. Transposition in pigeons. Conference on Comparative Cognition, 2003.
171. Lazareva, O. F., & Wasserman, E. A. Transitive responding in pigeons with reinforcement history controlled. Conference on Comparative Cognition, 2003.
172. Frank, A. J., & Wasserman, E. A. Associative symmetry: A demonstration in the pigeon. Workshop on Stimulus Equivalence, 2003. *Invited paper*.
173. Frank, A. J., & Wasserman, E. A. Bidirectional conditioning in the pigeon. Russian Academy of Science Conference on Fundamental and Clinical Aspects of the Integrative Activity of the Brain, 2003. *Invited paper*.
174. Wasserman, E. A. The rational mind: "Thin colonies of reason amid a savage world." American Psychological Association, 2003. *Invited keynote address*.
175. Lazareva, O. F., Freiburger, K. L., & Wasserman, E. A. Concurrent basic and superordinate categorization of photographic images by pigeons. Psychonomic Society, 2003.
176. Wasserman, E. A., & Castro, L. Surprise and change: Variations in the strength of present and absent cues in causal learning. Psychonomic Society, 2003. *Invited symposium presentation*.
177. Wasserman, E. A., Lazareva, O. F., & Vecera, S. P. Object perception by pigeons. Symposium on the "Diversity of Cognition: Evolution, Development, Domestication, and Pathology. Kyoto, Japan, 2003. *Invited paper*.
178. Wasserman, E. A. Same-different discrimination learning in pigeons, baboons, and people. Symposium on the "Cognitive Neuroscience of Category Learning," 2003. *Invited paper*.
179. Lazareva, O. F., Vecera, S. P., & Wasserman, E. A. Pigeons perform object discrimination using both local and global cues. Annual workshop on Object Perception and Memory (OPAM), 2003.
180. Wasserman, E. A., Lazareva, O. F., & Vecera S. P. Object discrimination in pigeons: The roles of global and local cues. Conference on Comparative Cognition, 2004. *Invited symposium presentation*.
181. Lazareva, O. F., Freiburger, K. L., & Wasserman, E. A. Pigeons concurrently categorize photographs at both basic and superordinate levels. Conference on Comparative Cognition, 2004.
182. Gibson, B. M., Wasserman, E. A., & Kamil, A. C. Pigeons are efficient travelers. Conference on Comparative Cognition, 2004**.**
183. Lazareva, O. F., Young, M. E., & Wasserman, E. A. Pigeon's recognition of occluded objects: Differential effects of training experience. Vision Sciences Society, 2004.

184. Wasserman, E. A., Lazareva, O. F., Gibson, B. M., Gosselin, F., Schyns, P. G., & Biederman, I. Geons and Bubbles: Object recognition by pigeons. Vision Sciences Society, 2004.
185. Frank, A. J., & Wasserman, E. A. Associative symmetry in the pigeon through arbitrary and identity training. Association for Behavior Analysis, 2004. *Invited symposium presentation*.
186. Wasserman, E. A. Transposition in discrimination learning: The problem of relational stimulus control. American Psychological Association, 2004. *Division 6 Presidential Address*.
187. Wasserman, E. A., Lazareva, O. F., & Young, M. E. Factors affecting the pigeon's recognition of occluded objects. International Congress of Psychology, 2004. *Invited paper*.
188. Castro, L., Young, M. E., & Wasserman, E. A. Effects of number of items on humans' discrimination of same from different visual displays. Joint international meeting of the International Society for Comparative Psychology and the Spanish Society for Comparative Psychology, 2004.
189. Ringen, J., & Wasserman, E. A. Nonhuman communication about private states: A second look. Joint meeting of the Society for Philosophy and Psychology and the European Society for Philosophy and Psychology, July, 2004.
190. Cook, R. G., & Wasserman, E. A. Relational matching by pigeons. Psychonomic Society, 2004.
191. Lazareva, O. F., & Wasserman, E. A. Nonverbal transitive inference: Effects of task and awareness on performance. Psychonomic Society, 2004.
192. Young, M. E., Beckmann, J. S., Wasserman, E. A. The pigeon's discrimination of Michotte's launching effect. Conference on Comparative Cognition, 2005.
193. Lazareva, O. F., Vecera, S. P., & Wasserman, E. A. Figure-ground assignment in pigeons. Conference on Comparative Cognition, 2005.
194. Castro, L., Lazareva, O. F., Vecera, S. P., & Wasserman, E. A. Figure-ground assignment in pigeons: The effect of different sizes. Conference on Comparative Cognition, 2005.
195. Frank, A. J., Wasserman, E. A., & Young, M. E. Item and relation control in same-different discrimination. Conference on Comparative Cognition, 2005.
196. Wasserman, E. A. Relational responding by people and pigeons. Society of Experimental Psychologists, 2005.
197. Wasserman, E. A. Sensitivity to metric and invariant changes in pigeons: Effects of different behavioral techniques. Vision Sciences Society, 2005.
198. Gibson, B. M., Lazareva, O. F., Wasserman, E. A., Gosselin, F., Schyns, P. G., & Biederman, I. Use of the Bubbles Procedure to isolate visual features controlling categorical behavior in people and pigeons. Vision Sciences Society, 2005.
199. Lazareva, O. F., Castro, L., Vecera, S. P., & Wasserman, E. A. Figure-ground assignment in pigeons: Effect of object area. Vision Sciences Society, 2005.
200. Lazareva, O. F., Freiburger, K., & Wasserman, E. A. Effects of stimulus manipulations on basic-level and superordinate-level categorization. Society for the Quantitative Analysis of Behavior, 2005. *Invited paper*.
201. Lazareva, O. F., Miner, M., Wasserman, E. A., & Young, M. E. Transposition in pigeons and people using multiple-pair discrimination training. Association for Behavioral Analysis, 2005.
202. Frank, A. J., & Wasserman, E. A. The necessity of identity training for emergent symmetry in pigeons. Association for Behavior Analysis, 2005.
203. Castro, L., Lazareva, O. F., Vecera, S. P., & Wasserman, E. A. Figure-ground assignment in pigeons. Spanish Society for Comparative Psychology, 2005.
204. Castro, L. & Wasserman, E. A. Causal Learning: Cue competition with two vs. three-cue compounds. Psychonomic Society, 2005.
205. Wasserman, E. A., Lazareva, O. F., & Young, M.E. Transposition in pigeons: Reassessing Spence's (1937) associative learning theory. Paper presented at the conference to honor Shepard Siegel, McMaster University, 2005. *Invited paper*.

206. Racey, D. E., Young, M. E., & Wasserman, E. A. Discriminating continuous variability: Evidence for the Finding Differences Model. Conference on Comparative Cognition, 2006.
207. Young, M. E. & Wasserman, E. A. A theory of variability discrimination: Finding differences. Conference on Comparative Cognition, 2006.
208. Nagasaka, Y., & Wasserman, E. A. Concept discrimination with the reassignment paradigm in pigeons. Conference on Comparative Cognition, 2006.
209. Frank, A. J., & Wasserman, E. A. Pigeons process both items and relations in multi-element visual arrays. Conference on Comparative Cognition, 2006.
210. Lazareva, O. F., Miner, M., Wasserman, E. A., & Young, M. E. Transposition in pigeons: Multiple-pair training facilitates relational responding. Conference on Comparative Cognition, 2006.
211. Brooks, D. I., & Wasserman, E. A. Same/Different concept learning with trial-unique stimuli in pigeons. Conference on Comparative Cognition, 2006.
212. Wasserman, E. A., Lazareva, O. F., & Luck, S. J. Change detection in pigeons: Stimulus attributes and binding. Vision Sciences Society, 2006.
213. Lazareva, O. F., Castro, L., Vecera, S. P., & Wasserman, E. A. Figure-ground assignment in pigeons: Smaller area and longer pre-exposure enhance figural advantage. Vision Sciences Society, 2006.
214. Nagasaka, Y., Lazareva, O. F., & Wasserman, E. A. Prior experience affects amodal completion in pigeons. Vision Sciences Society, 2006.
215. Brooks, D. I., Lazareva, O. F., Gosselin, F., Schyns, P. G., & Wasserman, E. A. Stimulus control in categorization: An application of the Bubbles procedure. Vision Sciences Society, 2006.
216. Lazareva, O. F., & Wasserman, E. A. Nonverbal transitive inference: Effects of task and awareness on performance. Midwestern Psychological Association, 2006.
217. Wasserman, E. A. & Castro, L. Causation and association: Parallels between human and animal cognition. Midwestern Psychological Association, 2006.
218. Fagot, J., Wasserman, E. A., & Davidoff, J. Cross-species differences in perceptual processing. Experimental Psychology Society, 2006.
219. Wasserman, E. A., Nagasaka, Y., & Lazareva, O. F. Seeing the unseen: Visual completion in pigeons? American Psychological Association, 2006. *Invited symposium paper*.
220. Wasserman, E. A. Same-different discrimination and abstraction. International Symposium on the Integration of Comparative Neuroanatomy and Cognition. Keio University, Tokyo, Japan, 2006. *Invited symposium paper*.
221. Lazareva, O. F., Young, M. E., & Wasserman, E. A. A three-component model of relational learning in the transposition paradigm. Winter Conference on Animal Learning & Behavior, 2007.
222. Castro, L., Kemp, H., & Wasserman, E. A. Nonidentical items from the same category: Are they same or different? Conference on Comparative Cognition, 2007.
223. Frank, A. J., & Wasserman, E. A. Factors affecting pigeons' processing of items and relations in multi-element visual arrays. Conference on Comparative Cognition, 2007.
224. Lazareva, O. F., Doyle, J., & Wasserman, E. A. Pigeons' perception of similarity among different basic-level categories. Conference on Comparative Cognition, 2007.
225. Brooks, D. I., & Wasserman, E. A. Connectionist account of item set and relation discrimination in multi-element arrays. Conference on Comparative Cognition, 2007.
226. Acerbo, M. J., Lazareva, O. F., Frank, A., Poremba, A., & Wasserman, E. A. Metabolic mapping of brain structures involved in figure-ground assignment in pigeons. Conference on Comparative Cognition, 2007.
227. Castro, L., & Wasserman, E. A. Can pigeons learn to complete an analogy? Conference on Comparative Cognition, 2007.
228. Wasserman, E. A., Lazareva, O. F., & Biederman, I. Pigeons are more sensitive to nonaccidental than to metric changes in visual objects. Conference on Comparative Cognition, 2007.

229. Wasserman, E. A. Humans, animals, and computers: Minding machines? American Psychological Association, 2007. *Master Lecture*.
230. Lazareva, O. F., Acerbo, M. J., Poremba, A., & Wasserman, E. A. Metabolic mapping of figure-ground segregation in pigeons: Subregions of the nucleus rotundus. Society for Neuroscience, 2007.
231. Castro, L., Soto, F. A., & Wasserman, E. A. Associations between absent events in contingency judgment. Psychonomic Society, 2007.
232. Wasserman, E. A. Development and evolution of cognition. Special paper session. Psychonomic Society, 2007. *Session organizer*.
233. Wasserman, E. A., Brooks, D. I., Lazareva, O. F., & Miner, M. A. A vocabulary test for pigeons *(Columba livia)*. Psychonomic Society, 2007.
234. Wasserman, E. A. Conceptual behavior in humans and animals: All different and yet the same. Eastern Psychological Association, 2008. *Richard L. Solomon Lecture*.
235. Castro, L., Soto, F. A., & Wasserman, E. A. Associations between absent events in contingency judgment. Eastern Psychological Association, 2008.
236. Brooks, D. I., & Wasserman, E. A. Same/Different discrimination with trial-unique stimuli by pigeons. Conference on Comparative Cognition, 2008.
237. Brooks, D. I., Rasmussen, I. P., Hollingworth, A., & Wasserman, E. A. Contextual cueing in the pigeon. Conference on Comparative Cognition, 2008.
238. Lazareva, O. F., Soto, F. A., & Wasserman, E. A. Basic-level superiority: Effect of between-category similarity. Conference on Comparative Cognition, 2008.
239. Kennedy, P. L., Castro, L., & Wasserman, E. A. Conditional same-different discrimination in pigeons. Conference on Comparative Cognition, 2008.
240. Acerbo, M. J., Lazareva, O. F., Poremba, A., & Wasserman, E. A. Metabolic mapping of figure-ground segregation in pigeons: Subregions of the nucleus rotundus. Conference on Comparative Cognition, 2008.
241. Soto, F. A., & Wasserman, E. A. Application of an elemental model of associative learning to perceptual categorization in pigeons. Society for Quantitative Analyses of Behavior, 2008.
242. Nagasaka, Y., Brooks, D. I., & Wasserman, E. A. Prior experience affects amodal completion in bonobos. Vision Sciences Society, 2008.
243. Wasserman, E. A. The yin and yang of same-different discrimination learning: Concrete versus abstract stimulus control. American Psychological Association, 2008. *Division 3 Presidential Address.*
244. Castro, L., Kennedy, P. L., & Wasserman, E. A. Conditional same-different discrimination in pigeons: Effects of number of items and stimulus mixtures. Conference on Comparative Cognition, 2008.
245. Brooks, D. I., & Wasserman, E. A. Mechanisms of same/different discriminations by pigeons. Conference on Comparative Cognition, 2008.
246. Soto, F. A., & Wasserman, E. A. Stimulus generalization in two axes of rotation of a three-dimensional object by pigeons. Conference on Comparative Cognition, 2008.
247. Lazareva, O. F., & Wasserman, E. A. Nonverbal transitive inference in adults: Effects of task and awareness on performance. Conference on Comparative Cognition, 2008.
248. Wasserman, E. A., & Castro, L. Nonidentical items from the same category: *Same* or *different*? Psychonomic Society, 2008.
249. Lazareva, O. F., Soto, F., & Wasserman, E. A. Between-category similarity determines basic-level superiority. Psychonomic Society, 2008.
250. Soto, F. A., & Wasserman, E. A. Competition between stimulus- and category-specific attributes in pigeons' categorization of natural images. Psychonomic Society, 2008.
251. Wasserman, E. A. Minding machines: Humans, animals, and computers. First National Congress of Ethology and Comparative Psychology of Chile, 2008.

252. Wasserman, E. A. Comparative cognition: The science of mental evolution. American Association for the Advancement of Science, 2009. *Symposium organizer*.
253. Wasserman, E. A. Abstraction in pigeons and baboons. American Association for the Advancement of Science, 2009.
254. Brooks, D. I., & Wasserman, E. A. A measure of pigeons' continuous discrimination in the simultaneous S/D task. Conference on Comparative Cognition, 2009.
255. Soto, F. A., & Wasserman, E. A. A common-elements model of visual category learning in pigeons. Conference on Comparative Cognition, 2009.
256. Wasserman, E. A., & Soto, F. A. Blocking of categorical control by prior individual exemplar learning. Conference on Comparative Cognition, 2009.
257. Soto, F. A., & Wasserman, E. A. Pigeons' discrimination of identity and emotion in photographs of human faces. Conference on Comparative Cognition, 2009.
258. Lazareva, O. F., & Wasserman, E. A. Transitive inference in pigeons: Measuring the associative values of B and D. Conference on Comparative Cognition, 2009.
259. Wasserman, E. A. Roots of analogy: Relational matching-to-sample behavior in pigeons, baboons, and people. Mid-American Association for Behavior Analysis, 2009.
260. Wasserman, E. A. Conceptual behavior in humans and animals: All different and yet the same? Delta Center/Cognitive Development Society, 2009.
261. Soto, F. A., & Wasserman, E. A. The relative-validity effect in natural image categorization by pigeons. Conference on Comparative Cognition, 2009.
262. Brooks, D., Ng, K., Buss, E., Freeman, J., & Wasserman, E. Visual discrimination in rats using a touchscreen. Conference on Comparative Cognition, 2009.
263. Wasserman, E. A., Castro, L., & Young, M. E. Same and different: Keel and backbone. Psychonomic Society, 2009.
264. Castro, L., Ramasay, D., & Wasserman, E. A. Two-item versus 16-item same-different discrimination in humans. Psychonomic Society, 2009.
265. Soto, F. A., & Wasserman, E. A. Associative learning in human natural image categorization. Psychonomic Society, 2009.
266. Soto, F. A., & Wasserman, E. A. Interaction between identity and emotional expression in pigeons' perception of human faces. Conference on Comparative Cognition, 2010.
267. Soto, F. A., & Wasserman, E. A. Pigeons' use of spatial frequency information in the discrimination of identity and emotion of human faces. Conference on Comparative Cognition, 2010.
268. Wasserman, E. A., Castro, L., & Lancaster, J. Identity and category matching-to-sample in pigeons. Conference on Comparative Cognition, 2010.
269. Castro, L., & Wasserman, E. A. 2-item vs. 16-item same-different discrimination in humans: perceptual vs. conceptual strategies. Midwestern Psychological Association, 2010.
270. Wasserman, E. A., Castro, L., & Young, M. E. Same and different: Keel and backbone. Midwestern Psychological Association, 2010.
271. Soto, F. A., & Wasserman, E. A. Perception of human face identity and expression by a non-primate biological vision system. Psychonomic Society, 2010.
272. Lazareva, O. F., Young, M. E., & Wasserman, E. A. Modeling relational learning in transposition: Joint effects of generalization gradients, relational disparity, and novelty. Conference on Comparative Cognition, 2011.
273. Acerbo, M. J., Lazareva, O. F., Poremba, A., & Wasserman, E. A. The role of nucleus rotundus in figure-ground, color, and shape discrimination. Conference on Comparative Cognition, 2011.
274. Soto, F. A., & Wasserman, E. A. Spatial frequency use in categorizing human faces: Comparing people and pigeons. Conference on Comparative Cognition, 2011.
275. Wasserman, E. A., Castro, L., & Freeman, J. H. Same-different concept learning in the rat. Conference on Comparative Cognition, 2011.

276. Soto, F. A., & Wasserman, E. A. The role of error-driven learning in object categorization by primates and birds. Vision Science Society, 2011.
277. Wasserman, E. A. Unhinging design: Reconsidering the role of planning and foresight in the origin of adaptive behavior, American Psychological Association, 2011. *D. O. Hebb Award Address*.
278. Castro, L., & Wasserman, E. A. Information seeking behavior in the pigeon. Psychonomic Society, 2011.
279. Soto, F. A., & Wasserman, E. A. View-invariant object recognition is learned by pigeons through reward prediction error. Psychonomic Society, 2011.
280. Wasserman, E. A. Human invention: Bye design! TEDx Iowa City, 11/11/11.
281. Brooks, D. I., Buss, E. W., Marshall, A. T., Ng, K. H., Freeman, J. H., & Wasserman, E. A. Categorization of photographic images by rats using shape-based image dimensions. Conference on Comparative Cognition, 2012.
282. Acerbo, M., Lazareva, O., McInnerney, J., Leiker, E., Poremba, A., & Wasserman, E. Metabolic activity of nucleus rotundus and its inhibitory complex associated with figure-ground discrimination in pigeons. Conference on Comparative Cognition, 2012.
283. Brooks, D. I., Freeman, J. H., & Wasserman, E. A. Categorization of photographic images by rats using shape-based image dimensions. Conference on Comparative Cognition, 2013.
284. Brzykcy, S. J., Wasserman, E. A., Nagasaka, Y., & Perez-Acevedo, S. Do pigeons (*Columba livia*) demonstrate behavioral sensitivity to connectedness and effort in the virtual string task? Conference on Comparative Cognition, 2013.
285. Wasserman, E. A., Nagasaka, Y., Castro, L., & Brzykcy, S. J. Pigeons learn virtual patterned-string problems in a computerized touchscreen environment. Conference on Comparative Cognition, 2013.
286. Wasserman, E. A., Teng, Y., & Brooks, D. I. Scene-based contextual cueing in pigeons: Responding on cue. Conference on Comparative Cognition, 2013.
287. Wasserman, E. A. Building a bird's vocabulary. Society of Experimental Psychologists, 2013.
288. Wasserman, E. A. Thought without language: Locked in no more! Workshop: What can we do with 500 billion words? Indiana University. 2013.
289. Wasserman, E., Teng, Y., & Castro, L. Contextual cueing in the pigeon. Society for the Quantitative Analysis of Behavior, 2013.
290. Yim, H., Castro, L., Wasserman, E., & Sloutsky, V. The interaction of supervision and category structure in category learning: Adults, children, and pigeons. Society for Research in Child Development, 2013.
291. Vyazovska, O. V., Teng, Y., Pavlenko, D. V, & Wasserman, E. A. Multidimensional visual discrimination by pigeons. European Conference on Visual Perception, 2013.
292. Wasserman, E. A. Problem solving in a virtual world. Expert meeting on animal reasoning. University of Ghent, Belgium, 2013.
293. Castro, L., & Wasserman, E. A. Pigeons' tracking of relevant attributes in category learning. Eastern Psychological Association, 2014.
294. Wasserman, E. A. From Keller and Schoenfeld to concepts and categories. Eastern Psychological Association, 2014. *Fred S. Keller Lecture*.
295. Wasserman, E. A. Categorical discrimination in humans and animals: All different and yet the same? Eastern Psychological Association, 2014. *Symposium presentation.*
296. Wasserman, E. A. Categorization: Insights from cognitive science, neuroscience, developmental psychology, and comparative psychology. Eastern Psychological Association, 2014. *Symposium organizer*.
297. Wasserman, E. A., & Teng, Y. Multiple Necessary Cue discrimination learning by pigeons. Comparative Cognition Society, 2014.
298. Teng, Y., & Wasserman, E. A. Global vs. local control of contextual cueing in pigeons. Comparative Cognition Society, 2014.
299. Casler, D. A., Hu, Z., & Wasserman, E. A. What do pigeons remember? Stimulus and category

memory in matching-to-sample. Comparative Cognition Society, 2014.

300. Yim, H., Castro, L., Wasserman, E. A., & Sloutsky, V. M. The interaction of supervision and category structure in category learning: A comparative approach. Cognitive Science Society, 2014.
301. Wasserman, E. A., Roembke, T. C., Casler, D. A., & McMurray, B. Many to many category learning: Building or pruning? Implications for human word learning. Psychonomic Society, 2014.
302. Wasserman, E. A. Categorization in pigeons: The evolution of a paradigm. Comparative Cognition Society, 2015. *Research Award Address*.
303. Navarro, V. & Wasserman, E. A. Learning concepts, one step at a time. Comparative Cognition Society, 2015.
304. Castro, L. & Wasserman, E. A. Selective attention and attentional shifts in pigeons' categorization learning. Comparative Cognition Society, 2015.
305. Wasserman, E. A. From Keller and Schoenfeld to concepts and categories. Association for Behavior Analysis International, 2015. *B. F. Skinner Lecture.*
306. Castro, L., & Wasserman, E. A. Task switching and executive control in pigeons. Psychonomic Society, 2015.
307. Wasserman, E. A., Couto, K., Navarro, V., & Smith, T. Contextual cueing supports concept learning in pigeons. Psychonomic Society, 2015.
308. Krupinski, E. A., Levenson, R. M., Wasserman, E. A., & Navarro, V. The potential of pigeons as surrogate observers in medical image perception studies. Society of Photographic Instrumentation Engineers, 2015.
309. Lauffer, M., Castro, L., & Wasserman, E. Chrysippus' pigeon: Inference by exclusion in an avian model. Comparative Cognition Society, 2016.
310. Navarro, V. & Wasserman, E. A. Assessing pre-crastination in the pigeon (*Columba livia*) using a virtual environment. Comparative Cognition Society, 2016.
311. Wasserman, E. A., & Navarro, V. M., Krupinski, E. A., & Levenson, R. M. Pigeons (*Columba livia*) as trainable observers of pathology and radiology breast cancer images. Comparative Cognition Society, 2016.
312. Wasserman, E. A. Species and behaviors evolve by selection: Bye design! American Psychological Association, 2016. *Division 25, Med Associates Award Address.*
313. Lauffer, M., Castro, L., & Wasserman, E. Chrysippus' pigeon: Inference by exclusion in an avian model. Society for the Quantitative Analysis of Behavior, 2016.
314. Navarro, V. M., Vyazovska, O. V., & Wasserman, E. A. Stagewise discrimination of multidimensional visual stimuli by pigeons. Society for the Quantitative Analysis of Behavior, 2016.
315. Navarro, V. M., Wasserman, E. A., McMurray, B., & Roembke, T. C. The role of negative associations in learning rich associative networks. Pavlovian Society, 2016.
316. Kim, J., Wasserman, E. A., Castro, L., Sloutsky, V, & Freeman, J. H. Dorsal hippocampus is necessary for visual categorization in rats. Society for Neuroscience, 2016.
317. Lauffer, M., Castro, L., & Wasserman, E. Matchmaker, Matchmaker, make me a match: Unsupervised learning in pigeons. Comparative Cognition Society, 2017.
318. Navarro, V. M., & Wasserman, E. A. A contextual congruency effect in the absence of semantic knowledge: A pigeon model. Comparative Cognition Society, 2017.
319. Castro, L., & Wasserman, E. A. The role of within- and between-stimulus congruency on task switching in pigeons and humans. Comparative Cognition Society, 2017.
320. Wasserman, E. A. Strategies for revitalizing the field of comparative cognition: A reprise. Comparative Cognition Society, 2017.
321. Vyazovska, O. V., Navarro, V. M., & Wasserman, E. A. Selective attention in a stepwise discrimination task by pigeons. European Conference on Visual Perception, 2017.
322. Wasserman, E. A., Castro, L., & Sloutsky, V. M. Unsupervised learning in an animal model. Cognitive Science Society, 2017.

323. Freeman, J. H., Broschard, M. B., Kim, J., Castro, L., Wasserman, E. A., & Sloutsky, V. M. Comparative analysis of visual category learning. Cognitive Science Society, 2017.
324. Love, B. C., Guest, O., Slomka, P., Navarro, V. M., & Wasserman, E. A. Deep networks as models of human and animal categorization. Cognitive Science Society, 2017.
325. Broschard, M. B., Kim, J., Wasserman, E. A., & Freeman, J. H. Rule-based and information-integration visual category learning in rats. Comparative Cognition Society, 2018.
326. Navarro, V. M., Wasserman, E. A., & Slomka, P. Pigeon categorization of human cardiac images. Comparative Cognition Society, 2018.
327. Castro, L., Fonseca, S., Sheridan, C., & Wasserman, E. The role of category density in relevant feature tracking. Comparative Cognition Society, 2018.
328. Wasserman, E. A. Precrastination: The challenge it poses for theories of adaptive behavior. Workshop on precrastination. University of California, Riverside, 2018.
329. Wasserman, E. A. Concepts and behavior analysis: The legacy of Keller, Schoenfeld, Skinner, and Herrnstein. American Psychological Association, 2018. *Division 25 Presidential Address*.
330. Wasserman, E. A. Choice and adaptive behavior. American Psychological Association. *Symposium organizer*, 2018.
331. Wasserman, E. A. Precrastination: The challenge it poses for theories of adaptive behavior. American Psychological Association, 2018.
332. Kim, J., Broschard, M. B., Castro, L., Wasserman, E. A., & Freeman, J. H. Roles of medial prefrontal cortex in rodent visual categorization. Pavlovian Society, 2018.
333. Broschard, M. B., Kim, J., Love, B. C., Wasserman, E. A., & Freeman, J. H. Rule-based and information-integration category learning in rats. Pavlovian Society, 2018.
334. Castro, L., & Wasserman, E. A. Memory demands and cognitive flexibility in pigeons. Pavlovian Society, 2018.
335. Wasserman, E. A. Precrastination, anticipation, and signalization: Implications for adaptive action. Pavlovian Society, 2018.
336. Wasserman, E. A., & Castro, L. Same-different conceptualization by pigeons. International Convention of Psychological Science, 2019.
337. Castro, L., Savic, O., Navarro, V., Wasserman, E. A., & Sloutsky, V. M. Selective and distributed attention in human and pigeon category learning. International Convention of Psychological Science, 2019.
338. Wasserman, E. A. Comparative psychology of relational cognition. Society for Research in Child Development, 2019.
339. Wasserman, E. A., & Castro, L. Distribution of attention to perfect predictors, imperfect predictors, and irrelevant stimuli in pigeon category learning. Comparative Cognition Society, 2019.
340. Navarro, V., & Wasserman, E. Select- and reject-control in learning rich associative networks. Comparative Cognition Society, 2019.
341. O'Donoghue, E., & Wasserman, E. Pigeons show no evidence for dimensional rule formation. Comparative Cognition Society, 2019.
342. Vyazovska, O. V., Navarro, V. M., & Wasserman, E. A. Selective attention in stepwise discrimination of compound visual stimuli by pigeons. Comparative Cognition Society, 2019.
343. Wasserman, E. A. Behavior analysis and conceptualization. TxABA, 2020. *Invited address.*
344. Wasserman, E. A. Precrastination, anticipation, and signalization: Implications for adaptive action. Eastern Psychological Association, 2020. *Richard L. Solomon Lecture*.
345. Wasserman, E. A. As if by design: How creative behaviors really evolve. International Society of Comparative Psychology, 2021. *Invited address*.
346. Wasserman, E. A. Behavior analysis and conceptualization: The legacy of Keller, Schoenfeld, Skinner, and Herrnstein. Universidad Nacional Autónoma de México, 2022. *Invited address*.
347. Turner, B., Broschard, M., Freeman, J., O'Donoghue, E., Sloutsky, V., & Wasserman, E. A. Transfer analysis of rule-based and information integration switch tasks. Psychonomic Society,

2023.

348. Wasserman, E., & Turner, B. The pigeon as an associative machine. Comparative Cognition Society, 2024.
349. Diaz, F., & Wasserman, E. A. Discrimination of numerical and nonnumerical magnitudes in a multiple necessary cues task. Comparative Cognition Society, 2024.
350. Orr, O., Wasserman, E. A., & Nosofsky, R. N. Pigeons' representation of real-world hierarchical categories. Comparative Cognition Society, 2024.
351. Wasserman, E. A. The pigeon as an associative machine. International Society for Comparative Cognition, 2024. *Invited lecture*.
352. Wasserman, E. A. Perceptual and associative mechanisms in avian visual categorization. Avian Cognitive Neuroscience Conference, 2024. *Invited Keynote Lecture.*
353. Wasserman, E. A. Decoupling design from Darwinian and Skinnerian selection. Association for Behavior Analysis International Theory and Philosophy Conference, 2024. *Invited Address.*
354. Nosofsky, R. N., Orr, O., & Wasserman, E. A. A psychological-scaling approach to predicting pigeon classification in a high-dimensional scientific-category domain. Psychonomic Society, 2024.
355. Wasserman, E. A., Orr, O., & Li, S. Does reinforcement decrease the variability of response sequences? Comparative Cognition Society, 2025.
356. Orr, O., & Wasserman, E. A. Exploring pigeons' ability to develop expertise in dermatological categorization. Comparative Cognition Society, 2025.
357. Diaz, F., Castro, L., & Wasserman, E. A. Humans and pigeons overestimate numerosity in coherent visual displays. Comparative Cognition Society, 2025.
358. Wasserman, E. A. Unhinging design from Darwinian and Skinnerian selection. Association for Behavior Analysis International, 2025. *Invited Presidential Scholar Address.*

Description of Research Activities

I have researched five important topics in my 54 years at The University of Iowa. In the first, I investigated autoshaping in pigeons and chickens. In the second, I studied memory in pigeons. In the third, I explored the problem of causal judgment in people. In the fourth, I studied visual categorization in pigeons, nonhuman primates, and people. In the fifth, I'm now studying the variability of learned behavior—a lamentably neglected topic and one which is key to creative endeavor.

From 1972 to 1984, I researched autoshaping in birds. I found that pecking emerged and persisted even when the reinforcer—either infrared heat or water injected directly into the mouth—did not elicit pecking or when pecking cancelled the reinforcer altogether. I further found that the key light had to be the best predictor of the reinforcer for robust responding to emerge. Redundant illumination from the house light or from the feeder adversely affected autoshaped key pecking; when multiple key lights were available, the birds pecked the one that was most highly correlated with the reinforcer. Finally, the exact timing and duration of key illumination and reinforcer delivery strongly determined the autoshaped responses of both pigeons and chicks. Despite these clear stimulus-reinforcer influences on key pecking, I also found that the rate and temporal pattern of pecking is reliably affected by response-reinforcer relations, thereby testifying to the complex determination of this seemingly simple act.

From 1976 to 1992, I studied short-term memory in pigeons. That work began with my development of a go/no go method for studying short-term memory that capitalized on the pigeon's predilection to peck at signals for food and to withdraw from signals for no food. I later exploited that method and several others in projects that helped to elucidate the nature of memory for single events, for multiple events (both stimuli and responses), and for time. Parallel studies of response sequence learning showed how memory may participate in the learning and (temporal and spatial) organization of response sequences. Of special note is the work that I did with Vern Honig on prospective and retrospective memory processes. The

possibility that both forward-looking and backward-looking memories might participate in behavior was originally suggested by Konorski, but Honig and I were among the first to document such participation; later research in both animal and human memory has further developed this intriguing notion.

Notably, Hulse, Honig, and Wagner edited the highly influential volume *Cognitive Process in Animal Behavior*, which signaled both a broadening of the scope of animal behavior research and a liberalization of the theories that might be invoked to explain complex behavior. I reviewed this book for the *Journal of the Experimental Analysis of Behavior*. My 1981 review and my 1982 addendum in the same journal afforded me the opportunity to place research in animal learning and behavior into historical, biological, and philosophical context. Many of my later writings have further considered the place of comparative cognition in contemporary psychology as well as its relationship to the field of cognitive ethology. One of my most salient contributions to the field was a 35-chapter, 704-page edited volume canvassing the realm of comparative cognition [E. A. Wasserman & T. R. Zentall (Eds.), *Comparative cognition: Experimental explorations of animal intelligence.* New York: Oxford University Press.] That volume was updated and expanded as the *Oxford Handbook of Comparative Cognition*, 2012.

In 1983, I began a new line of research into human causal judgment. My initial work investigated: the method of presenting contingency information; people's weighting of different kinds of contingency information; the role of necessity, sufficiency, and temporal contiguity in causal judgment; and people's use of different strategies in making contingency judgments. My later research was more theoretically oriented. After replicating the relative validity effect with humans, I went on to show that people not only revalued reinforced and nonreinforced cues that were *presented* on training trials, but they also revalued other possible causes that were *not presented* on those trials. This result is not predicted by most associative learning theories; but, the modification of the Rescorla-Wagner model that Linda Van Hamme and I devised nicely did the trick. That theoretical modification also enables an associative account to explain the otherwise unexplainable phenomena of recovery from overshadowing and backward blocking. I have successfully documented both retrospective revaluation effects in human causal settings and have found that they may be mediated by within-compound associations. In collaboration with Mike Young, I also explored other animal conditioning phenomena in the realm of human causal judgment, particularly occasion setting plus positive and negative patterning.

In 1988, I began research into visual categorization by pigeons. Many years of teaching students about Herrnstein's studies of pigeons' discriminating photographic stimuli convinced me that much more could be learned about categorization processes by building on his initial methods and analyses. My own work developed in three directions. First, I explored the pigeon's categorization of four different classes of photographic stimuli: cats, cars, chairs, and flowers. Not only did pigeons accurately discriminate the original training stimuli, but they also reliably discriminated novel testing stimuli—the hallmark of conceptualization. Follow-up work elucidated many of the conditions that are conducive to the categorization of basic-level stimuli. Collaborative research with Irving Biederman, a human vision scientist at USC, pursued the possibility that pigeons process visual stimuli in accord with a componential analysis of an object's irreducible geometric parts or "geons." Other collaborative research with Shaun Vecera, here at The University of Iowa, with Philippe Schyns, at the University of Glasgow, and with Frédéric Gosselin, at the Université de Montréal, built on that work to provide a fuller understanding of the perceptual mechanisms of object categorization by pigeons. Subsequently, Fabián Soto and I extended the theoretical analysis of categorization in two major papers: one published in *Psychological Review* and the other published in *Cognitive, Affective, & Behavioral Neuroscience*. Second, with Sue Astley at Cornell College and Olga Lazareva at Drake University, I studied the pigeon's forming of higher-level or superordinate categories. Superordinate categories defy explanation in terms of primary stimulus generalization, but they are readily explicable by means of secondary stimulus generalization via mediated associative links. Among other things, we found that pigeons do form such superordinate

categories when exemplars from two basic-level categories are associated with the same response, delay of reward, probability of reward, or amount of reward. Third, with Mike Young, Brett Gibson, Dan Brooks, and Leyre Castro, I have studied the pigeon's forming an abstract same-different concept. Clear evidence of abstraction by nonhuman animals had proven to be extraordinarily difficult. Nonetheless, with arrays of 16 same or different pictures, we obtained unequivocal evidence that pigeons not only accurately discriminate the original training arrays, but they also reliably discriminate novel same and different arrays created from a palate of brand-new pictures. Follow-up research intriguingly suggests that the pigeons may not have learned a qualitative same-different category at all; rather, they may have based their discriminative responding on the variability or *entropy* in the stimulus array. This quantitative or dimensional possibility received empirical support from a series of pigeon experiments, from several analogous experiments on baboons conducted in collaboration with Joël Fagot at the CNRS in Marseille, France, and from experiments on college students here at The University of Iowa.

One avenue of my current collaborative research on categorization is with Vladimir Sloutsky and Brandon Turner (Ohio State University), John Freeman, and Leyre Castro. We are studying the ontogeny and phylogeny of visual categorization in pigeons, rats, college students, and children. Another avenue is with Onur Güntürkün in the Department of Biopsychology, Institute of Cognitive Neuroscience, Ruhr University Bochum, Germany studying pigeon brain and behavior. In still other work, together with Ellen O'Donoghue and Brandon Turner, we completed a series of empirical and computational projects revealing the key associative foundations of categorization in both pigeons and people. This highly visible research was published in *Current Biology*, *Cognition*, and *Journal of Experimental Psychology: Animal Learning and Cognition*. And most recently, Odysseus Orr and I have collaborated with Rob Nosofsky (Indiana University) on the psychophysical bases of visual object categorization in pigeons and people. This work was just accepted for publication in *Psychological Review*.

I opened a new line of research into numerical cognition in pigeons a few years ago. Francisca Diaz, Leyre Castro, and Liz Brannon (University of Pennsylvania) have been my collaborators. This work has looked into the basic mechanisms of number discrimination in pigeons and people. One paper has recently been published in *Journal of Experimental Psychology: Animal Learning and Cognition*; two others have been very favorably reviewed and revisions submitted.

In a final line of research, I've begun studying the variability of learned behavior. This work was initially stimulated by library research I had done into behavioral creativity—the focus of my 2021 book, *As if by Design*. Odysseus Orr and I have just published the first empirical paper from our laboratory research with pigeons. We found that the form and frequency of consistently rewarded behavior involve a dynamic adaptive balance between stability produced by the Law of Effect and variability induced by a persistent exploratory predisposition. In collaboration with Michael Beran (Georgia State University), we're extending that research to rhesus and capuchin monkeys. Initial data suggest that we'll have an interesting story to tell concerning the generality of our initial findings with pigeons.

Description of Teaching Activities

Since coming to The University of Iowa in 1972, I have taught several courses at the Undergraduate and Graduate levels in the Experimental Psychology and Behavioral and Cognitive Neuroscience areas.

In the Undergraduate curriculum, I have taught 31:120 Experimental Psychology I. I have also taught sections of 31:121 Experimental Psychology II dealing with human and animal behavior. The last time that I offered this course, the class project yielded a published research paper [Wasserman, E. A., & Berglan, L. R. (1998). Backward blocking and recovery from overshadowing in human causal judgment: The role of within-compound associations. *Quarterly Journal of Experimental Psychology, 51B*, 121-138]. I have also taught 31:125 Introduction to Comparative Psychology and 31:135 Principles of Behavioral Analysis. More recently, I have taught 31:123 Psychology of Learning on several occasions. The 31:123 class is a broad course in the psychology of learning and adaptive behavior, organized around my own undergraduate textbook [Schwartz, B., Wasserman, E. A., & Robbins, S. J. (2002). *Psychology of learning and behavior (5th Ed.)*. New York: Norton]. I also teach the course Mind and Behavior, contrasting behavioral and cognitive approaches to psychological science. In my Undergraduate courses, my primary aims are: (a) to show that psychology is a science, (b) to show how the experimental method can reveal the basic principles of behavior, and (c) to elucidate how studying the behavior of nonhuman animals has disclosed fundamental insights into human nature. Beyond these activities, I have also lectured in 31:1 Elementary Psychology and in 31:3 General Psychology. I also offered a special class with Lisa Oakes, 31:180 Current Topics in Psychology: Cognition in Animals and Infants. I have offered sections of the 31:190 Psychology Seminar focused on behaviorism and cognitivism, creativity, and artificial intelligence. I've also taught two First Year Seminars: The Arrogant Animal and Do Animals Have Language?

In the Graduate curriculum, I offered the course 31:237 Experimental Analysis of Behavior when enrollments were sufficiently large. The aim of that course was to acquaint our graduate students with the fundamental concepts of operant learning. I also offered the Behavior Theory Seminar 31:331 to deal with both historical and contemporary issues in the analysis of behavior and learning. I enlisted the constructive collaboration of Drs. Hinrichs, Randall, and Rosenbaum to make this seminar relevant to several interest groups within the Department. In more recent years, I have also taught the seminar in Neuroscience and Behavior, 31:338, with Robinson and Freeman. I also organized and participated in course offerings that were designed to be of special relevance to graduate students in the Neuroscience Program. These classes included: 31:241 Behavioral and Cognitive Neuroscience I, 31:242 Behavioral and Cognitive Neuroscience II (with Robinson and Freeman), and 31:244 Behavioral Neuroscience. Most recently, I have taught a survey course 31:235 Foundations Learning, Memory & Cognition, which satisfies an APA requirement for our clinical graduate students.

As of now, my teaching portfolio includes PSY:3020 Mind and Behavior, PSY:3040 Psychology of Learning, PSY:3110 Animal Cognition, PSY:3160 Psychological Science of Creativity, and PSY:6230 Foundations of Learning, Memory, & Cognition.

In addition to these activities, I have supervised many high school, undergraduate, and graduate students, as well as postdoctoral investigators in research conducted in my laboratory. I have taken a special interest in SSTP, URP, SROP, SREP, USA, 31:091, and Honors Programs.

Finally, I have served as the Department's Coordinator of Undergraduate Studies, Coordinator of Graduate Studies, and Director of the Department's Honors Program.

Honors Theses Supervised:

Craig Waters. Autoshaped nose-poking in rats. 1973.
Jane Deitchler. Trial grouping effects on second-order autoshaping of the chick's key peck. 1979.
Mark Larew. Discrimination and retention of stimulus order by pigeons. 1979.
Kent Cox. The acquisition of two-peck sequences under discriminative control in pigeons. 1980.
David Slack. Measuring bursts and pauses in the pigeon's pecking response on variable interval schedules. 1981.
Lucretia Hughes. Effects of diazepam on pigeon discrimination learning. 1982 (with Hinrichs).
Roxanne Schlapkohl. Persistence of responding on an increasing ratio schedule contrasted with different fixed ratio schedules. 1983.
Kevin Gregg. Observing behavior by humans. 1983.
Steven Baldwin. Testing the trace theory of animal short-term memory. 1984.
Diane Franson. Effects of unsignaled changes in response-outcome contingency on human operant behavior. 1985.
DeAnn Lobmeyer. Preliminaries to foul shooting: Superstitious behavior? 1985.
John Becker. Human judgments of response-outcome contingency with two active responses. 1986.
William Reynolds. Categorization of familiar and novel pictorial stimuli by pigeons. 1987.
John Wallace. Increased punishment responses under counterproductive contingencies. 1987.
William Sauer. Is there an oddity preference in infants? 1988. (with Quinn).
Lynne Sebille. Role of good continuation in perceptual organization by human infants. 1988 (with Quinn).
David Marchant. Instance-to-category generalization as a critical test of equivalence set formation. 1988.
William Dorner. The influence of preconceptions on judging interevent contingencies. 1988.
Betsy Carlson. The effects of contour deletion on the discrimination of line drawings by pigeons. 1990.
Russ Christian. Discrimination of mirror images by pigeons. 1991.
Sonya Ulrich. Discrimination and generalization along the temporal dimension using the peak procedure. 1993.
Cathy Betti. Temporal discrimination and the peak procedure. 1994.
Brigette Cook. Stimulus generalization of depth-rotated drawings. 1994.
Stuart Miller. Temporal control under the peak procedure. 1995.
Heather Kingery. Depth invariance in pigeon perception. 1997.
Ingrid Gronstal. Categorical generalization in pigeons. 2005.
Haley Kemp. Same and different learning in pigeons and humans. 2007.
John Doyle. Categorical perception in pigeons. 2007.
Philip Kennedy. Same-different discrimination learning by pigeons. 2009.
Benjamin Johnson. Post-combat sexual expression concerns in active-duty women. 2009 (with Fraley).
Matthew Manning. Vocabulary learning in the pigeon. 2010.
Dhayashini Ramasamy. Cross national comparability of the Cognitive Abilities Test—Form 7. 2011.
Jeffrey Siow. View-invariance learning in object recognition by pigeons. 2012.
Zhaohui Hu. Do pigeons find snakes perceptually salient? 2014.
Keara Turkington. Crossed-string tasks may not be as difficult as once thought. 2014.
Tatiana Smith. The effect of target-background congruency on categorization in pigeons. 2016.
Yichong Cao. The effects of supervision and density on categorization learning in pigeons. 2017.
Xueying Zhao. Separability and integrality in pigeon discrimination learning. 2018.
Seunghye Yang. Rules and exceptions learning by pigeons. 2020.
Hanlong Fan. Complex rule learning in pigeons and people. 2023.

Students Supervised in the Graduate College's Research Opportunities Programs:

Kimberly Knauss. Categorization of trial-unique stimuli in pigeons. Summer, 1986.
Felicia Hall. Human and animal cognition. Summer, 1994.
Michelle Marion. Pigeons' recognition of complex object drawings. Summer, 1995.
Grace Muhammad. Pigeons' recognition of differently sized drawings of objects. Summer, 1995.
Rhonda Dalrymple. Successive same-different discrimination learning. Summer, 1996.
Kelvin Garner. Simultaneous same-different discrimination learning. Summer, 1996.
Rhonda Dalrymple. Successive same-different discrimination learning. Summer, 1997.
Tamara Barclay. Visual recognition of depth-rotated objects. Summer, 1997.
Neil Torbert. Visual memory in pigeons and people. Summer, 1999.
Farrasha Jones. Positive and negative patterning in college students. Summer, 1999.
Grisselle Betancourt. Same-different discrimination learning by pigeons. Summer, 1999.
Denise Alexander. Object-based attention in pigeons. Summer, 2003.
Cristal Martinez. Auditory categorization by pigeons. Summer, 2007.
Latisha Ramsey. Summer, 2009. Metacognition in pigeons: Do they know that they know?
Veronica Pacheco. Summer, 2009. Do pigeons show the "same-race" effect?
Liliana Díaz Plá. Summer, 2011. Transfer of metacognition in pigeons.
Sacha Pérez Acevedo. Summer, 2012. Virtual string pulling by pigeons.
Maku Orleans-Pobee, 2015. Proactive and retroactive interference in pigeons.
Sol Fonseca, 2017. Feature tracking in sparse and dense categorization tasks.

Students supervised in Undergraduate Scholars Programs (ICRU & USA):

Jane Auh. Causal perception. (Fall, 1986-Spring, 1987)
Andrew Baker. Fetal alcohol and learning. (Fall, 1987-Spring, 1988; with J. R. West)
William Dorner. Contingency perception. (Fall, 1987-Fall, 1988)
Leandro Torres. Fetal alcohol and learning. (Fall, 1989-Spring, 1990; with J. R. West)
Brad Tucker. Visual perception in pigeons. (Fall, 1990-Spring, 1991)
Janelle Johnson. Causal perception. (Fall, 1995-Fall, 1998)
B. J. Terrones. Visual perception in pigeons. (Fall, 1995-Spring, 1999)
Brigette Robinson. Visual perception in pigeons. (Fall, 1995-Spring, 1995)
Nicole Hill. Learning and perception in college students. (Fall, 1996-Spring, 1998)
Raquel Unser. Learning and perception in college students. (Fall, 1999)
Philip Kennedy. Same-different discrimination learning by pigeons. (Fall, 2007-Fall, 2009)
Matthew Manning. Vocabulary learning by pigeons. (Fall, 2009-Summer, 2010)
Jeffrey Siow. View-invariance learning in object recognition by pigeons. (2011-2012)
Yuejia Teng. Discrimination learning in pigeons. (2012-2014)
Yichong Cao. Interactions of category structure and supervision in category learning. (2016-2017)
Xueying Zhao. Separability and integrality in pigeon discrimination learning. (2016-2018)
Cassandra Sheridan. Categorical control by deterministic and probabilistic features. (2018-2020)
Seunghye Yang. Rules and exception learning by pigeons. (2019-2020)
Drew Kain. Pigeons master complex information integration tasks. (2020-2022)
Odysseus Orr. Pigeons master cardiac diagnostic tasks. (2020-2023)
Hanlong Fan. Biconditional discrimination by pigeons and people. (2021-2022)

Undergraduate Students supervised from other Institutions:

Tiffany Lawless, Cornell College (2014)
Ella Redmund Wiger, Coe College (2017)
Ananya Albrecht-Buehler, University of Oxford (2022-2024)

Graduate Students supervised from other Institutions:

Leyre Castro, University of Deusto, Spain (2001)
Daniel García, Universidad Nacional Autónoma de México (2012-2016)
Kalliu Couto, Oslo and Akershus University College, Norway (2015)

M.A. Theses Supervised:

Brian Y. Cooper. Interpolation of the UCS in a one trial per day procedure. 1976 (with Grisham).
James D. Deich. The acquisition and maintenance of observing responses in pigeons. 1977.
Keith R. Nelson. Successive matching-to-sample in the pigeon: Proactive and retroactive effects on associative memory. 1978.
Frederick F. Taylor. The effect of the CS-US interval and the percentage of reinforced trials upon the autoshaped key peck response in pigeons. 1979.
Danny J. Neunaber. Judgment of contingency and operant responding in depressed and nondepressed college students. 1983 (with O'Hara).
Gary W. Schroeder. Collateral and operant performance of depressed and nondepressed college students on DRL schedules of reinforcement. 1983 (with O'Hara).
Veronika T. Guttenberger. Effects of sample duration, retention interval, and time in the test on pigeons' matching-to-sample performance. 1983.
Ramesh S. Bhatt. Choice behavior of pigeons on progressive and multiple schedules: A test of optimal foraging theory. 1986.
Shu-Fang Kao. Contingency judgment: The nature of the noncontingency relation and a reexamination of strategy analysis. 1990.
Carol L. DeVolder. Strategic shift in the prospective and retrospective processing of visual forms. 1990.
Linda J. Van Hamme. Recognition by components: A comparative analysis of object recognition. 1991.
Jennifer D. Thomas. Long-term behavioral effects of alcohol exposure during the brain growth spurt in rats: A dose-response study. 1992.
Joseph L. Gagliardi. Pigeons' perception of stimuli rotated in depth. 1994.

Ph.D. Theses Supervised:

James D. Deich. Analysis of first- and second-order autoshaping of the chick's keypeck with heat as the unconditioned reinforcer. 1982.
Lynn Holmes. An experimental analysis of habitat selection in *Tegenaria domestica* (Araneida: Agelenidae). 1982 (with Bovbjerg).
Keith R. Nelson. A signal detection analysis of successive matching performance in pigeons. 1983.
Robert E. DeLong. Control of responding by stimulus duration. 1983.
Danny J. Neunaber. Behavioral and judgmental sensitivity to changes in response-outcome contingencies in depressed and non-depressed individuals. 1986 (with O'Hara).
Diane L. Chatlosh. Discriminative control by three dimensions of compound stimuli in pigeons: Is the blocking effect confined to redundant relevant cues? 1988. [Winner of the 1986 Don Lewis Dissertation Year Award.]
Ramesh S. Bhatt. Effects of category size, congruity of training categories with human language

categories, and selective attention on multiple-category classification in pigeons. 1988. [Winner of the 1987 Don Lewis Dissertation Year Award.]

Susan M. Elek. Response to and report of response-outcome contingencies: A developmental study. 1990.

Shu-Fang Kao. Information integration and associative learning as accounts of contingency judgment. 1993. [Winner of the 1993 Don Lewis Dissertation Year Award.]

Carol L. DeVolder. Retrospective and prospective memory processes depend on differently distributed neural systems. 1993 (with Tranel).

Linda J. Van Hamme. Associative and statistical accounts of cue competition in causality judgments. 1994. [Winner of the 1994 Don Lewis Dissertation Year Award and winner of the Outstanding Dissertation Award on Basic Learning Processes from Division 25, American Psychological Association.]

Kimberly K. Kirkpatrick-Steger. The role of object components and their spatial organization in the pigeon's visual recognition of complex line drawings. 1995. [Winner of the 1994 K. W. Spence Award and winner of the 1995 Don Lewis Dissertation Year Award. 1997 winner of the New Investigator Award for papers published in the *Journal of Experimental Psychology: Animal Behavior Processes* from Division 3 of the American Psychological Association. Co-winner of the 1999 Outstanding Dissertation Award on Basic Learning Processes from Division 25, American Psychological Association.]

Jennifer D. Thomas. Behavioral and neuroanatomical effects of brief episodes of alcohol exposure during the brain growth spurt in rats: The importance of time of exposure. 1995. [Winner of the 1994 K. W. Spence Award.]

Jessie J. Peissig. A study of object representation in the pigeon. 2001. [2004 Brenda A. Milner Award winning author of an outstanding paper in the field of behavioral neuroscience or comparative psychology that is written by a member of Division 6, American Psychological Association; 2015 Best Paper published in Psychonomic Society Journal, *Learning & Behavior*.]

Andrea J. Frank. An examination of temporal and spatial stimulus control in emergent symmetry in pigeons. 2006. [Winner of 2006 Don Lewis Dissertation Year Award; winner of 2006 Gormezano Research Award; 2007 Experimental Analysis of Behavior Dissertation Award from Division 25, American Psychological Association.]

Daniel I. Brooks. The dynamics of spatial anticipation in pigeons and rats. 2010. [Winner of 2010 Don Lewis Dissertation Year Award; 2013 winner of the Brenda A. Milner New Investigator Award for papers published in Comparative Psychology and Behavioral Neuroscience from Division 6, American Psychological Association.]

Fabian A. Soto. Experimental test of a common elements theory of visual categorization and object recognition in pigeons. 2011. [Winner of 2010 Don Lewis Dissertation Year Award from the Department of Psychology at the University of Iowa; 2011 winner of the New Investigator Award for papers published in the *Journal of Experimental Psychology: Animal Behavior Processes* from Division 3, American Psychological Association; 2012 winner of the Brenda A. Milner New Investigator Award for papers published in Comparative Psychology and Behavioral Neuroscience from Division 6, American Psychological Association; winner of the 2012 Spriestersbach Dissertation Prize in the Social Sciences from the Graduate College of the University of Iowa; 2013 Experimental Analysis of Behavior Dissertation Award from Division 25, American Psychological Association; named 2015 Rising Star, Association for Psychological Science; winner of 2016 American Psychological Association Distinguished Scientific Contribution Award for Early Contribution to Psychology in the area of animal learning and behavior.]

Victor M. Navarro. Acquisition and generalization of conditional choice value in pigeons and humans. 2020. Winner of the 2022 Experimental Analysis of Behavior Dissertation Award from Division 25 of the American Psychological Association; winner of the 2022 Brenda A. Milner New Investigator Award for papers published in Comparative Psychology and Behavioral Neuroscience

from Division 6, American Psychological Association.

Ellen M. O'Donoghue. A comparative investigation into the mechanisms that support multidimensional categorization. 2022. Winner of the 2024 Experimental Analysis of Behavior Dissertation Award from Division 25 of the American Psychological Association.

Francisca Diaz. The role of numerical and nonnumerical magnitudes in discriminative behavior: A comparative study. 2025. Winner of the 2026 Experimental Analysis of Behavior Dissertation Award from Division 25 of the American Psychological Association.

Postdoctoral Supervision:

Dr. G. A. Lucas (1977-1980)
Dr. R. A. Hancock (1979)
Dr. M. W. Olson (1980-1982)
Dr. M. Katagiri (1993)
Dr. S. L. Astley (1990-1998)
Dr. M. E. Young (1995-2000). [Received honorable mentions by Divisions 3 (Experimental Psychology) and 6 (Behavioral Neuroscience and Comparative Psychology) of the American Psychological Association for two different papers published in the *Journal of Experimental Psychology: Animal Behavior Processes*.]
Dr. B. M. Gibson (2001-2003)
Dr. O. F. Lazareva (2001-2008)
Dr. L. Castro (2004-)
Dr. Y. Nagasaka (2004-2006)

Other Research Supervision:

Steven Schectman (URP; 1973)
Karen Thompson (SSTP, 1973)
Linda Nagamatsu (SSTP, 1975)
Sarah Scher (SSTP, 1978)
Steven Manock (SSTP, 1979)
Julie Boland (SSTP, 1981)
Amy Roskin (SSTP, 1982)
Sylvia Morgan (SSTP, 1983)
David Levy (SSTP, 1985)
Mark Valera (SSTP, 1986)
Pic Sayasenh (SSTP, 1988)
Cybill Sigler (SSTP, 1990)
Jennifer Chan (SSTP, 1991)
Steven Shin (SSTP, 1992)
Cristina García (SSTP, 1994)
Shareena Mundodi (SSTP, 1995)
Chinazor Okasi (SSTP, 1997)
Lauren Feigenbaum (SSTP, 1999)
Ilana Jerud (SSTP, 2001)
Jonathan Levin (SSTP, 2002; Intel Semifinalist)
Morgan Figa (SSTP, 2004)
Diane Cai (SSTP, 2005)
Neel Doshi (SSTP, 2007)
Daniel Bialer (SSTP, 2010)
Julie Backstrom (SSTP, 1973)
Karen Gutowski (SSTP, 1974)
Steven Cohen (SSTP, 1977)
Virginia Whitney (SSTP, 1979)
Maria Moraniec (SSTP, 1980)
Maribel Valle (SSTP, 1981)
Jacqueline Freedman (SSTP, 1982)
Helene Fields (SSTP, 1984)
Lisa Streisfeld (SSTP, 1985)
David Shapiro (SSTP, 1987)
Tracey Carter (SSTP, 1989)
Kelley Burgess (SSTP, 1991)
Jerry Lin (SSTP, 1992)
Adam Simon (City High School, 1992-93)
Raylesha Burton (SSTP, 1995)
Rebecca Schiff (SSTP, 1996)
Sana Hong (SSTP, 1998)
Beki Cohen (SSTP, 2000)
Nicole Ambrosio (SSTP, 2002)
Jennifer Zhao (SSTP, 2003)
Jessica Wasserman (SSTP, 2004)
Marissa Fox (SSTP, 2006; Intel Semifinalist)
Chandini Reddi (SSTP, 2009)
Matthew Heiden (SSTP, 2011)

David Li (SSTP, 2013)
Alexandra Chan (SSTP, 2014)
Aarushi Dervesh (SSTP, 2016)
John Yuhan Fu (SSTP, 2022)
Sophia Li (SSTP, 2024)
Arun Velamuri (SSTP, 2014)
Sarah Cabeen (SSTP, 2015)
Rathna Ramesh (SSTP, 2018)
Jonathan Jose (SSTP, 2023)
Evan Yuan (SSTP, 2025)

Honors Committee Service:

M. Gaffey (Bechtoldt, 1974); E. Walker (Grisham, 1975); T. Mueller (Blumberg, 1995);

M.A. and Research Advisory Committee Service:

C. Kelley (Knutson, 1972); R. Swenson (Randall, 1974): J. Elbin (Randall, 1974); K. Simansky (Harvey, 1975); C. Gibbs (Gormezano, 1976); E. Shrager (Johnson, 1976); K. Wahlstrand (Knutson, 1977); DeLong (Grisham, 1978); M. Bensenberg (Gormezano, 1979); E. Anderson (Knutson, Routh, 1980); R. Viken (Knutson, 1981); D. Recher (Hegmann, 1981-Zoology); C. Gundaker (Hegmann, 1981-Zoology); L. Ohman (Johnson, 1982); L. Winsky (Harvey, 1983); T. Cunningham (Randall, 1984); S. Aicher (Randich, 1987); A. Nowak (Gormezano, 1988); D. Meyerson (Knutson, 1988); K. Kirkpatrick-Steger (Gormezano, 1992); M. Cicha (Johnson, 1993); M. Henry (Johnson, 1993); Ed Vogel (Luck, 1997); Greta Sokoloff (Blumberg, 1998); Dan Nicholson (Freeman, 2000);

Ph.D. Committee Service:

C. Poulos (Gormezano, 1974); R. Tait (Gormezano, 1974); M. Trulson (Randall, 1974); E. J. Kehoe (Gormezano, 1976); J. Sorenson (Harvey, 1976); N. Kane (Knutson, 1977); F. Gersh (Weerts, 1978); B. Cooper (Randall, 1978); K. Simansky (Harvey, 1979); E. Edmon (Grisham, 1978); Lucki (Grisham & Harvey, 1979); C. Gibbs (Gormezano, 1978); E. Shrager (Johnson, 1981); F. Gordon (Johnson, 1979); C. Hutz (Cantor, 1980-Ed. Psych. Comps.); K. Perkins (Fowles, 1981); R. Jones (Amada, 1981-Music); W. Lind (Johnson, 1981); D. Tranel (Fowles, 1982); R. Viken (Knutson & Johnson, 1982); B. Schreurs (Gormezano, 1983); L. Ohman (Johnson, 1984); L. Winsky (Harvey, 1984); C. Norton (Hegmann, 1985-Zoology); R. Johnson (Randall, 1985); D. Pierce (West, 1985-Anatomy); C. Kao (Baron, 1986); T. Cunningham (Johnson, 1988); S. Aicher (Randich, 1988); A. Nowak (Gormezano, 1990); B. Hallowell (Hurtig, 1991-Speech Pathology and Audiology); D. Meyerson (Knutson, 1992); Dean Yoshizumi (Levin, 2000); M. Campolattaro (Freeman, 2009); R. Danek (Mordkoff, 2010); J. Cosman (Vecera, 2011); J. Bigelow (Poremba, 2014); Z. Roper (Vecera, 2015); E. Emmons (Narayanan, 2018); K. Spalding (Tranel, 2019); K. Wahlstrom (La Lumiere, 2021); B. De Corte (Freeman & Parker, 2021); M. Broschard (Freeman, 2022); K. Moore (Traer, 2024);

Service

Departmental Administration:

General Experimental Psychology Committee	1972-1975
Shop Committee	1972-1973
Undergraduate Curriculum Committee	1972-1973
Animal Facilities and Care Committee	1972-1973
Shop and Animal Care Committee, Chair	1974-1976
Animal Care Committee	1976-1978
Animal Welfare	1989-
Chair	1989-2000
Behavioral and Cognitive Neuroscience Training Area	1975-
Coordinator	1977-1978
	1989-1995
Committee on Graduate Studies	1977-1978
	1989-1995
Coordinator of Graduate Studies	1990-1993
Shop and Equipment Committee	1979-1980
Chair	1984-1985
Committee on Undergraduate Studies	1980-1988
Coordinator of Undergraduate Studies	1986-1988
Associate Chair	1988-1989
Faculty Advisory Committee	1989-1990
	2003-2005
Ad Hoc Committee on Joint Appointments	1990
Ad Hoc Committee on Strategic Communication	2014
Teaching Observation Committee	2021-

College of Liberal Arts and Sciences Assignments:

Rhetoric Coordinating Committee	1981-1983
Quantitative or Formal Reasoning Coordinating Committee	1987-1990
Computer Science Review Committee	1989
Faculty Assembly (Elected member)	1991-2000
Advisory Committee on Faculty Promotion and Tenure	1991-1993
Scholarship Committee	1995-1997
Chair	1995-1996
Executive Committee	2000-2003
	2010-2013
Named Chairs/Professorships Ad Hoc Committee	2003-2008

University Assignments:

Neurobehavioral Sciences Program	1974-1985
Neuroscience Program	1988-
University Animal Care and Use Committee	1978-1982
	1991-1994
Ad Hoc Committee for Per Diem Rates	1994
University Research Council	1980-1983
Human Subjects Review Committee C	1982-1985
Computer Operations Working Committee	1982-1985
Hancher Auditorium Advisory Committee	1992-1995

	1996-1999
FIPSE Planning Committee	1994-1997
Faculty Scholar Review Committee	1996, 2003
Chair, Search Committee for Associate Provost for Faculty Personnel and Development	1998
Presidential Committee on Athletics	2004-2009
Academic Achievement Advisory Subcommittee	2004-2009
Finance and Facilities Subcommittee	2004-2009
CLAS Dean Search Committee	2011-2012
Honorary Degree Selection Committee	2025-2028

Faculty Governance:

Faculty Senate	1996-2002
	2008-2011
	2011-2014
	2016-2019
	2026-2029
Vice President	1996-1997
President	1997-1998
Past President	1998-1999
Faculty Council	1996-1999
	2010
	2011-2014
	2016-2019
Budget Planning Committee	1996-1999
Committee on Committees	1996-1999
Governmental Relations Committee	1996-1999
Post Tenure Effort Allocation Committee	1996-1997
President's Council on Institutional Advancement	1996-1998

Community Service:

Animal Protection League, Johnson County Humane Society	1974-1976
Pals Program	1977-1982
Big Brothers/Big Sisters--Finance and Planning Board	1982-1985
Chair, Finance and Planning Board	1984-1985
Executive Committee	1984-1985
Eastern Iowa Science and Engineering Fair (EISEF): High School Biology Judge	2003