

# Curriculum Vitae

## STEPHEN B. FOUNTAIN

### Contact Information:

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- <http://www.personal.kent.edu/~sfountai>

### Education:

- B.A., Baylor University, 1977 (Psychology)
- M.A., The Johns Hopkins University, 1979 (Biopsychology)
- Ph.D., The Johns Hopkins University, 1981 (Biopsychology); Advisor: Stewart H. Hulse
- Post-doc, The Johns Hopkins University School of Hygiene and Public Health, 1984 (Neurotoxicology); Advisor: Zoltan Annau

### Professional Experience:

- Graduate Research Assistant, Department of Psychology, The Johns Hopkins University, Baltimore, MD, 1977-1981
- Research Psychologist, Nat. Institute of Aging, Gerontology Research Center, Baltimore City Hospitals, Baltimore, MD, 1978
- Postdoctoral Fellow, Department of Environmental Health Sciences, The Johns Hopkins University School of Hygiene and Public Health, Johns Hopkins Medical Center, Baltimore, MD, 1981-1984
- Visiting Assistant Professor, Department of Psychology, Kent State University, Kent, OH, 1984-1985
- Research Assistant Professor, Department of Neurobiology, Northeastern Ohio Universities College of Medicine, Rootstown, OH, 1985-1993
- Assistant Professor, Department of Psychology, Kent State University, Kent, OH, 1988-1992
- Chair, Neurosciences Program, School of Biomedical Sciences, Kent State University, Kent, OH, 1992-1996
- Associate Professor, Department of Psychology, Kent State University, Kent, OH, 1992-2002.
- Research Associate Professor, Department of Neurobiology, Northeastern Ohio Universities College of Medicine, Rootstown, OH, 1993-2009
- Professor, Department of Psychology, Kent State University, Kent, OH, since 2002
- Honors College Faculty, Kent State University, Kent, OH, since 2009

### Research Interests:

- **Animal Cognition:** Animal models of complex learning and memory processes
- **Neurobehavioral Teratology:** Animal models of adult cognitive impairments caused by exposure to drugs such as nicotine during adolescence
- **Behavioral Neuroscience:** Brain correlates of complex cognition in animals, especially the role of cholinergic and glutamatergic neurotransmitter systems in cognition
- **Cognitive Science:** Computational modeling of complex cognitive behavior

**Professional Affiliations:**

- Society for Neuroscience
- Neurobehavioral Teratology Society
- Comparative Cognition Society
- Pavlovian Society
- Psychonomic Society
- Midwestern Psychological Association
- American Association for the Advancement of Science

**Extramural Grant Support:**

- 1981-1984 "Serial Learning, Memory, and Cognition in Animals." NIMH National Research Service Award MH08759. Funded Project Period: 3 years.
- 1987-1989 "Neural Basis of Serial Pattern Learning." NIMH Small Grant MH43576. Funded Project Period: December 1, 1987 – May 31, 1989.
- 1991-1993 "Development of an *In Vitro* Hippocampal Brain Slice Screen for Neurotoxicity." Johns Hopkins Center for Alternatives to Animal Testing. Funded Project Period: February 1, 1991 – January 31, 1993.
- 1991-1994 "Serial Pattern Learning in Rats." NIMH Small Grant MH48402. Funded Project Period: August 1, 1991 – July 31, 1994.
- 1997-1998 "Animal Models of Alzheimer's Disease." (Co-PI with Michael D. Bunsey, and David C. Riccio, PI) Subcontract from Case Western Reserve Alzheimer's Disease Research Center (National Institute on Aging). Period: July 1, 1997 – June 30, 1998.
- 2001-2004 "REU Site: Research Experiences in Psychology". NSF SES-0097619. Funded Project Period: April 15, 2001 – April 14, 2005.
- 2008-2012 "Adolescent Nicotine Exposure and Adult Cognitive Processes in Rats". NIDA AREA Grant R15DA023349. Funded Project Period: September 19, 2008 – September 18, 2012.

**Intramural Grant Support:**

- 1989-1990 "Behavioral Toxicity of Carbon Monoxide." Biomedical Research Support Grant. Funded Project Period: 1 year.
- 1990-1991 "Development of an *In Vitro* Assay for Detecting CNS Dysfunction." Biomedical Research Support Grant. Funded Project Period: 1 year.
- 1991-1992 "Effects of MK-801 on Serial Pattern Learning and Motivation." Biomedical Research Support Grant. Funded Project Period: 1 year.
- 1994 "Neural Basis of Serial-Pattern Learning." Biomedical Research Support Grant NCCR 2 S07 RR7208. Funded Project Period: 1 year.
- 1996-2000 "The Role of Hippocampus and Frontal Cortex in Rat Serial-Pattern Learning" (with Michael D. Bunsey, Co-PI). Research Challenge. Funded Project Period: November 1996 – June 2000.
- 2008-2009 "Role of NMDAR and mAChR in Cognitive Processes Mediating Sequential Learning." Kent State University Research Council, Research/Scholarly Activity Award. Funded Project Period: 1 year.

**Awards/Fellowships:**

1978	NIH Summer Traineeship, National Institute of Aging
1977-1981	Johns Hopkins University Fellowship
1981	Behavioral Toxicology Training Grant, NIEHS
1989	Kent State University Applied Psychology Center Faculty Fellowship
1990	Kent State University Teaching Development Award
1991	Kent State University Applied Psychology Center Faculty Fellowship
1993	Kent State University Research and Creative Activity Award
1995	Kent State University Applied Psychology Center Faculty Fellowship
1995	Kent State University Applied Psychology Center Publication Productivity Award
2002	Kent State University Applied Psychology Center Faculty Fellowship
2004	Kent State University Applied Psychology Center Publication Productivity Award
2006	Kent State University Faculty Fellowship
2006	Kent State University Summer Research and Creative Activity Award
2007	Kent State University Applied Psychology Center Summer Faculty Fellowship
2008	Kent State University Applied Psychology Center Publication Productivity Award
2010	Kent State University Applied Psychology Center Publication Productivity Award
2010	Kent State University Applied Psychology Center Faculty Fellowship (Fall 2010)
2010	Kent State University Applied Psychology Center Summer Undergraduate Internship Award (support for an undergraduate intern for Summer 2010)

**Other Professional Activities:**

1985-1989	Ad hoc reviewer for the National Science Foundation, Psychobiology Section.
1986-1989	Panelist, American Institute of Biological Sciences -- US Army Medical Research Institute Peer Review Panel for Extramural Neurotoxicology Grants
1989	Panelist, World Health Organization Planning Meeting on the Use of <i>In Vitro</i> Cells to Screen Chemicals for Neurotoxicity, May 1989, Geneva, Switzerland.
1995-1997	Program Committee, Midwestern Psychological Association Annual Meeting
1996	Organizer, Kent State University Applied Psychology Center Forum entitled "Animal Cognition: Implications for Biomedical Research."
1997-1998	Program Moderator, Annual Meeting of the Midwestern Psychological Association
1998-2000	Consulting Editor, <i>Animal Learning &amp; Behavior</i>
2001-2004	Editor, <i>Behavioral Neuroscience and Comparative Psychology</i> , Newsletter of American Psychological Association Division 6 (Behavioral Neuroscience and Comparative Psychology)
2004	Organizer, Tri-State+ Conference on Animal Learning & Behavior
2009	Member, NIH Study Section BRLE ZRG BBBP-C(02)M review panel
2008-2010	Acting Editor for the two Stewart H. Hulse memorial special issues of the journal, <i>Learning and Motivation</i>
2011	Program Committee, 18 <sup>th</sup> Annual International Conference on Comparative Cognition
2012	Program Committee, 19 <sup>th</sup> Annual International Conference on Comparative Cognition
2012	Organizer, 25 <sup>th</sup> Annual Tri-State+ Conference on Animal Learning & Behavior
2012	Program Committee, International Conference on Comparative Cognition Fall meeting (Society for Neuroscience Satellite meeting)
2013	Program Committee, 19 <sup>th</sup> Annual International Conference on Comparative Cognition

Occasional ad hoc reviewer for:

- Animal Cognition
- Behavioral Processes
- Behavior Research Methods
- Experimental Brain Research
- International Journal of Comparative Psychology
- Journal of Experimental Psychology: Animal Behavior Processes
- Journal of Experimental Analysis of Behavior
- Learning & Behavior
- Learning and Motivation
- Neurotoxicology and Teratology
- Pharmacology, Biochemistry and Behavior
- Proceedings of the National Academy of Sciences
  
- Brooks/Cole Publishers, Inc.
- Prentice Hall
- Wadsworth CENGAGE Learning

**Publications:**

(\* indicates undergraduates)

1. Fountain, S. B., & Hulse, S. H. (1981). Extrapolation of serial stimulus patterns by rats. *Animal Learning & Behavior*, 9, 381-384.
2. Fountain, S. B., Evensen, J. C., & Hulse, S. H. (1983). Formal structure and pattern length in serial pattern learning by rats. *Animal Learning & Behavior*, 11, 186-192.
3. Fountain, S. B., Henne, D. R. \*, & Hulse, S. H. (1984). Phrasing cues and hierarchical organization in serial pattern learning by rats. *Journal of Experimental Psychology: Animal Behavior Processes*, 10, 30-45.
4. Fountain, S. B., & Annau, Z. (1984). Chunking, sorting, and rule-learning from serial patterns of brain-stimulation reward by rats. *Animal Learning & Behavior*, 12, 265-274.
5. Fountain, S. B., Schenk, D. E. \*, & Annau, Z. (1985). Serial-pattern-learning processes dissociated by trimethyltin exposure in rats. *Physiological Psychology*, 13, 53-62.
6. Fountain, S. B. (1986). Serial-pattern learning: A unitary process? *Physiological Psychology*, 14, 67-70.
7. Fountain, S. B., Raffaele, K. C., & Annau, Z. (1986). Behavioral consequences of intraperitoneal carbon monoxide administration in rats. *Toxicology and Applied Pharmacology*, 83, 546-555.
8. Fountain, S. B., & Teyler, T. J. (1987). Characterizing neurotoxicity using the *in vitro* hippocampal slice preparation: Heavy metals. In A. Shahar & A. M. Goldberg (Eds.), *Model systems in neurotoxicology: Alternative approaches to animal testing* (pp. 19-31). New York: Alan R. Liss, Inc.
9. Teyler, T. J., & Fountain, S. B. (1987). Neuronal plasticity in the mammalian brain: Relevance to behavioral learning and memory. *Child Development*, 58, 698-712.
10. Fountain, S. B., Hennes, S. K., & Teyler, T. J. (1988). Aspartame exposure and *in vitro* hippocampal slice excitability and plasticity. *Fundamental and Applied Toxicology*, 11, 221-228.
11. Fountain, S. B., Ting, Y. L. T., Hennes, S. K., & Teyler, T. J. (1988). Triethyltin exposure suppresses synaptic transmission in area CA1 of the rat hippocampal slice. *Neurotoxicology and Teratology*, 10, 539-548.
12. Fountain, S. B. (1990). Rule abstraction, item memory, and chunking in rat serial-pattern tracking. *Journal of Experimental Psychology: Animal Behavior Processes*, 16, 96-105.
13. Bruinink, A., Fountain, S., Kasuya, M., MacPhail, R., Smith, R., Walum, E., & Zbinden, G. (1990). *Report of planning meeting: In vitro techniques for the assessment of neurotoxic chemicals*. Geneva: International Programme on Chemical Safety, World Health Organization. (Technical Report.)
14. Fountain, S. B., Rowan, J. D., & Ting, Y.-L. T. (1990). Threshold procedures for assessing the impact of agents on brain reward systems. *Neurotoxicology and Teratology*, 12, 469-475.
15. Rowan, J. D., & Fountain, S. B. (1991). Carbon monoxide exposure reduces the rewarding quality of brain-stimulation reward in rats. *Neurotoxicology and Teratology*, 13, 175-179.

16. Fountain, S. B., Ting, Y.-L. T., & Teyler, T. J. (1992). The *in vitro* hippocampal slice preparation as a screen for neurotoxicity. *Toxicology In Vitro*, 6, 77-87.
17. Ting, Y.-L. T., Fountain, S. B., & Teyler, T. J. (1992). Extracellular Ca<sup>2+</sup> modulation of triethyltin neurotoxicity in area CA1 of the rat hippocampal slice. *Toxicology In Vitro*, 6, 159-164.
18. Fountain, S. B., & Rowan, J. D. (1993). Development of an *in vitro* hippocampal brain slice screen for neurotoxicity. In A. M. Goldberg (Ed.), *In vitro Toxicology: Tenth Anniversary Symposium of the Center for Alternatives to Animal Testing* (pp. 27-40). New York: Mary Ann Liebert.
19. Fountain, S. B., & Rowan, J. D. (1995). Sensitivity to violations of "run" and "trill" structure in rats. *Journal of Experimental Psychology: Animal Behavior Processes*, 21, 78-81.
20. Fountain, S. B., & Teyler, T. J. (1995). Brain slice techniques in neurotoxicology. In L. W. Chang and W. Slikker (Eds.), *Neurotoxicology: Approaches and Methods* (pp. 517-535). New York: Academic Press.
21. Fountain, S. B. & Rowan, J. D. (1995). Coding of hierarchical versus linear pattern structure in rats and humans. *Journal of Experimental Psychology: Animal Behavior Processes*, 21, 187-202.
22. Danks J. H., Shreve, G. M., Fountain, S. B., & McBeath M. K. (Eds.). (1997). *Cognitive Processes in Translation and Interpreting*. Thousand Oaks, CA: Sage Publications.
23. Stempowski, N. K., Carman, H. M., & Fountain, S. B. (1999). Temporal phrasing and overshadowing in rat serial-pattern learning. *Learning and Motivation*, 30, 74-100.
24. Fountain, S. B., Rowan, J. D., & Benson, D. M., Jr. (1999). Rule learning in rats: Serial tracking in interleaved patterns. *Animal Cognition*, 2, 41-54.
25. Fountain, S. B., Krauchunas, S. M., & Rowan, J. D. (1999). Serial-pattern learning in mice: Pattern structure and phrasing. *Psychological Record*, 49, 173-192.
26. Fountain, S. B., & Rowan, J. D. (2000). Differential impairments of rat serial pattern learning and retention induced by MK-801, an NMDA receptor antagonist. *Psychobiology*, 28, 32-44.
27. Fountain, S. B., & Rowan, J. D. (2000). Effects of sequential exposure to multiple concentrations of methylmercury in the rat hippocampal slice. *Ecotoxicology and Environmental Safety*, 47, 130-136.
28. Fountain, S. B., Benson, A. M.\*, & Wallace, D. G. (2000). Number, but not rhythmicity, of temporal cues determines phrasing effects in rat serial-pattern learning. *Learning and Motivation*, 31, 301-322.
29. Fountain, S. B., & Teyler, T. J. (2001). Suppression of hippocampal slice excitability by 2-, 3-, and 4-methylpyridine. *Ecotoxicology and Environmental Safety*, 48, 301-305.
30. Rowan, J. D., Fountain, S. B., Kundey, S. M. A., & Miner, C. L.\* (2001). A multiple species approach to sequential learning: Are you a "man or a mouse"? *Behavior Research Methods, Instruments, and Computers*, 31, 435-439.
31. Fountain, S. B., Bunsey, M. D., Danks, J. H., & McBeath, M. K. (Eds.). (2002). *Animal Cognition and Sequential Behavior: Behavioral, Biological, and Computational Perspectives*. Boston, MA: Kluwer Academic Publishers.

32. Fountain, S. B., Wallace, D. G., & Rowan, J. D. (2002). The organization of sequential behavior. In S. B. Fountain, M. D. Bunsey, J. H. Danks, and M. K. McBeath (Eds.), *Animal Cognition and Sequential Behavior: Behavioral, Biological, and Computational Perspectives* (pp. 115-150). Boston, MA: Kluwer Academic Publishers.
33. Fountain, S. B., & Bunsey, M. (2002). Animal cognition today and tomorrow: Diverse themes. In S. B. Fountain, M. D. Bunsey, J. H. Danks, and M. K. McBeath (Eds.), *Animal Cognition and Sequential Behavior: Behavioral, Biological, and Computational Perspectives* (pp. 317-332). Boston, MA: Kluwer Academic Publishers.
34. Wallace, D. G., & Fountain, S. B. (2002). What is learned in sequential learning? An associative model of reward magnitude serial-pattern learning. *Journal of Experimental Psychology: Animal Behavior Processes*, *28*, 43-63.
35. Wallace, D. G., & Fountain, S. B. (2003). An associative model of rat serial pattern learning in three-element sequences. *Quarterly Journal of Experimental Psychology Section B: Comparative and Physiological Psychology*, *56*, 301-320.
36. Fountain, S. B. (2006). The structure of sequential behavior. In E. A. Wasserman and T. R. Zentall (Eds.), *Comparative Cognition: Experimental Explorations of Animal Intelligence* (pp. 439-458). Oxford: Oxford University Press.
37. Fountain, S. B., & Benson, D. M. (2006). Chunking, rule learning, and multiple item memory in rat interleaved serial pattern learning. *Learning and Motivation*, *37*, 95-112.
38. Fountain, S. B., Rowan, J. D., Muller, M. D., Smith, D. P. A., Chenoweth, A. M., & Wallace, D. G. (2006). Sequence production paradigms for exploring the organization of sequential behavior. In M. J. Anderson (Ed.), *Tasks and Techniques: A Sampling of Methodologies for the Investigation of Animal Learning, Behavior, and Cognition* (pp. 245-260). Hauppauge, NY: Nova Science Publishers.
39. Fountain, S. B., Rowan, J. D., & Carman, H. M. (2007). Encoding structural ambiguity in rat serial pattern learning: The role of phrasing. *International Journal of Comparative Psychology*, *20*, 25-34.
40. Wallace, D. G., Rowan, J. D., & Fountain, S. B. (2008). Determinants of phrasing effects in rat serial pattern learning. *Animal Cognition*, *11*, 199-214. DOI: 10.1007/s10071-007-0110-7
41. Fountain, S. B. (2008). Pattern structure and rule induction in sequential learning. *Comparative Cognition & Behavior Reviews*, *3*, 66-85.
42. Fountain, S. B., Rowan, J. D., Kelley, B. M., Willey, A. R.\*, & Nolley, E. P.\* (2008). Adolescent exposure to nicotine impairs adult serial pattern learning in rats. *Experimental Brain Research*, *187*, 651-656. doi: 10.1007/s00221-008-1346-4
43. Kunder, S. M. A., & Fountain, S. B. (2010). Blocking in rat serial pattern learning. *Journal of Experimental Psychology: Animal Behavior Processes*, *36*, 307-312.
44. Fountain, S. B. (2010). Stewart H. Hulse. *Learning and Motivation*, *41*, 153-155.
45. Muller, M. D., & Fountain, S. B. (2010). Concurrent cognitive processes in rat serial pattern learning: Item memory, serial position, and pattern structure. *Learning and Motivation*, *41*, 252-272.
46. Kunder, S. M. A., & Fountain, S. B. (2011). Irrelevant relations and the active search for pattern structure in rat serial pattern learning. *Animal Cognition*, *14*, 359-368.

47. Fountain, S. B., & Doyle, K. E. (2011). Association and abstraction in sequential learning: "What is learned?" revisited. *International Journal of Comparative Psychology*, 24, 437-459.
48. Fountain, S. B., Rowan, J. D., Muller, M. D., Kundey, S. M. A., Pickens, L. R. G., & Doyle, K. E. (2012). The organization of sequential behavior: Conditioning, memory, and abstraction. In T. R. Zentall and E. A. Wasserman (Eds.), *Handbook of Comparative Cognition* (pp. 594-614). Oxford: Oxford University Press.
49. Fountain, S. B. & Doyle, K. E. (2012). Learning by chunking. In N. Seel (Ed.), *Encyclopedia of the Sciences of Learning* (p. 616). New York/Heidelberg: Springer.
50. Pickens, L. R., Rowan, J. D., Bevins, R. A., & Fountain, S. B. (2013). Sex differences in adult cognitive deficits after adolescent nicotine exposure in rats. *Neurotoxicology and Teratology*, 38, 72-78. doi: 10.1016/j.ntt.2013.05.001
51. Fountain, S. B., Rowan, J. D., & Wollan, (2013). Impairments of performance by atropine in a serial multiple choice task for rats. *Neurobiology of Learning and Memory*, 106, 118-126. doi: 10.1016/j.nlm.2013.07.009.

### Invited Addresses/Presentations:

- Fountain, S. B., & Teyler, T. J. (1986, October). Characterizing neurotoxicity using the *in vitro* hippocampal slice preparation: Heavy metals. Invited address presented at the 31st OHOLO International Biological Research Conference on Model Systems in Neurotoxicology, Tiberias, Israel.
- Fountain, S. B. (1989, May). The hippocampal brain slice as an *in vitro* neurotoxicity assay system. Presentation at the World Health Organization Planning Meeting on the Use of *In Vitro* Neurotoxicity Assays, Geneva, Switzerland.
- Fountain, S. B., & Rowan, J. D. (1989, October). Threshold procedures for assessing the impact of agents on brain reward systems. Invited address at the Methods in Behavioral Toxicology/Teratology Conference, Little Rock, Arkansas.
- Fountain, S. B., & Rowan, J. D. (1992, April). Development of an *in vitro* hippocampal brain slice screen for neurotoxicity. Invited address at the 10th Anniversary Symposium of the Johns Hopkins Center for Alternatives to Animal Testing, Baltimore, Maryland.
- Fountain, S. B. (1995, May). What is learned in rat serial learning? Invited paper presented the annual meeting of the Midwestern Psychological Association, Chicago, Illinois.
- Fountain, S. B. (2000, May). Animal cognition and reductionism. Invited symposium presentation at the annual meeting of the Midwestern Psychological Association, Chicago, Illinois.
- Fountain, S. B. (2001, March). Constructing sequential behavior. Invited symposium presentation at the annual meeting of the Comparative Cognition Society, Melbourne, Florida.
- Fountain, S. B. (2005, May). Multiple behavioral and brain processes in rat sequential learning. Invited paper presented the annual meeting of the Midwestern Psychological Association, Chicago, Illinois.
- Fountain, S.B., Kundery, S. M. A., & Doyle, K. E. (2010, February). The organization of sequential behavior: Association and abstraction. Invited Focus Session talk presented at the Winter Conference on Animal Learning and Behavior, Winter Park, CO.
- Fountain, S.B. (2012, May). Nicotine as neurobehavioral teratogen: Persistent adult sequential learning impairments caused by adolescent nicotine exposure in rats. Invited paper presented the annual meeting of the Midwestern Psychological Association, Chicago, Illinois.

### Invited Colloquia:

- Fountain, S. B. (1988, May). Cognition, brain, and "neuronal apocalypse": An animal model of cognitive function and dysfunction. Department of Psychology, University of Texas at El Paso.
- Fountain, S. B. (1990, March). Toxic chemicals: Effects on brain and behavior. Department of Psychology, Denison University.
- Fountain, S. B. (1991, March). Animal models for studying motivation and cognition. Department of Pharmacology, Northeastern Ohio Universities College of Medicine.
- Fountain, S. B. (2001, May). Deconstructing animal cognitive processes: Behavioral, computational, and psychobiological approaches. Department of Neurobiology and Pharmacology, Northeastern Ohio Universities College of Medicine.
- Fountain, S. B. (2002, March). Do animals think? Some thoughts regarding non-primate thinking. Department of Psychology, Baldwin-Wallace College.

**Research Presentations:**

(\* indicates graduate students; \*\* indicates undergraduates)

- Fountain, S. B., Ross, D. L.\*\*, & Hulse, S. H. (1979). Phrasing of serial stimulus patterns by rats. Paper presented at the annual meeting of the Psychonomic Society, Phoenix, Arizona.
- Fountain, S. B., & Hulse, S. H. (1980). Extrapolation of serial patterns by rats. Paper presented at the annual meeting of the Eastern Psychological Association, Hartford, Connecticut.
- Fountain, S. B., Ross, D. L.\*\*, & Hulse, S. H. (1980). The role of phrasing in serial pattern learning by rats. Paper presented at the annual meeting of the American Psychological Association, Montreal, Canada.
- Fountain, S. B., & Hulse, S. H. (1981). Pattern length and complexity determine serial pattern learning in rats. Paper presented at the annual meeting of the Eastern Psychological Association, New York, New York.
- Fountain, S. B., Mactutus, C. F., & Valdes, J. J. (1982). Effects of trimethyltin on two-way avoidance conditioning. Paper presented at the first annual meeting of the Behavioral Toxicology Society, Baltimore, Maryland.
- Fountain, S. B. (1982). Phrasing and hierarchical organization in rat serial pattern learning. Paper presented at the annual meeting of the Psychonomic Society, Minneapolis, Minnesota.
- Fountain, S. B., & Annau, Z. (1983). Organizational factors in rat serial pattern learning. Paper presented at the annual meeting of the Eastern Psychological Association, Philadelphia, Pennsylvania.
- Fountain, S. B., Schenk, D. E.\*\*, & Annau, Z. (1983). Sequential stimuli and the organization of sequential behavior. Paper presented at the annual meeting of the Psychonomic Society, San Diego, California.
- Fountain, S. B., & Annau, Z. (1984). Trimethyltin exposure retards serial pattern anticipation learning in rats. *Toxicologist*, 4, 116. (Poster presented at the annual meeting of the Society of Toxicology, Atlanta, Georgia, 1984.)
- Fountain, S. B., & Zaragoza, M. S. (1984). Structural ambiguity and the extrapolation of letter series. Paper presented at the annual meeting of the Eastern Psychological Association, Baltimore, Maryland.
- Fountain, S. B., Raffaele, K. C.\*, & Annau, Z. (1985). Behavioral consequences of intraperitoneal carbon monoxide administration. *Toxicologist*, 5, 25. (Poster presented at the annual meeting of the Society of Toxicology, San Diego, California.)
- Fountain, S. B., Schenk, D. E.\*\*, & Annau, Z. (1985). A selective serial pattern learning deficit following trimethyltin exposure. Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago, Illinois.
- Fountain, S. B., Schenk, D. E.\*\*, & Annau, Z. (1985). Impaired associative learning and spared rule-learning in a serial learning task following trimethyltin exposure in rats. *Society for Neuroscience Abstracts*, 11, 633. (Poster presented at the annual meeting of the Society for Neuroscience, Dallas, Texas.)
- Fountain, S. B., & Teyler, T. J. (1986). Characterization of potentially neurotoxic effects using an *in vitro* hippocampal slice test battery. *Toxicologist*, 6, 303. (Poster presented at the annual meeting of the Society of Toxicology, New Orleans, Louisiana.)
- Fountain, S. B., Bradler, J. E.\*\*, & Teyler, T. J. (1986). Aspartame exposure and *in vitro* hippocampal slice excitability and plasticity. *Society for Neuroscience Abstracts*, 12, 93. (Poster presented at the annual meeting of the Society for Neuroscience, Washington, D.C.)

- Fountain, S. B., Ting, Y. L. T.\*, Hennes, S. K., Zuga, J. A.\*\*, & Teyler, T. J. (1987). Triethyltin neurotoxicity in area CA1 of the hippocampal slice. *Society for Neuroscience Abstracts*, 13, 695. (Poster presented at the annual meeting of the Society for Neuroscience, New Orleans, Louisiana.)
- Fountain, S. B. (1987). Do multiple neurobehavioral systems underlie serial-pattern learning? Paper presented at the annual meeting of the Psychonomic Society, Seattle, Washington.
- Ting, Y. L. T., Fountain, S. B., Andre, H. L.\*\*, & Teyler, T.J. (1988). Early versus delayed behavioral effects of acute triethyltin exposure. *Toxicologist*, 8, 73. (Poster presented at the annual meeting of the Society of Toxicology, Dallas, Texas.)
- Spanos, L. J.\*, Yamamoto, B. K., & Fountain, S. B. (1988). Behavioral analysis of chronic methylenedioxymethamphetamine. *Proceedings of the Eastern Psychological Association*, 50, 47. (Poster presented at the annual meeting of the Eastern Psychological Association, Buffalo, New York.)
- Ting, Y. L. T.\*, Fountain, S. B., & Teyler, T. J. (1988). HPLC evaluation of TET-induced neurochemical changes *in vivo*: Correlation with behavioral observations. *Psychopharmacology*, 96, S57. (Poster presented at the annual meeting of the European Pharmacology Society, Athens, Greece.)
- Ting, Y. L. T.\*, Fountain, S. B., & Teyler, T. J. (1988). Triethyltin neurotoxicity is not mediated by extracellular  $CA^{2+}$ . *Society for Neuroscience Abstracts*, 14, 1082. (Poster presented at the annual meeting of the Society for Neuroscience, Toronto, Canada.)
- Fountain, S. B. (1988). Phrasing and structural ambiguity in pattern tracking by rats. *Bulletin of the Psychonomic Society*, 26, 508. (Paper presented at the annual meeting of the Psychonomic Society, Chicago, Illinois.)
- Fountain, S. B., & Rowan, J. D.\* (1989). Structural ambiguity and rat serial-pattern tracking. *Proceedings of the Eastern Psychological Association*, 60, 50. (Poster presented at the annual meeting of the Eastern Psychological Association, Boston, MA.)
- Fountain, S. B., & Rowan, J. D.\* (1989). Violations of pattern structure and rat pattern tracking. *Bulletin of the Psychonomic Society*, 27, . Paper presented at the annual meeting of the Psychonomic Society, Atlanta, GA.
- Rowan, J. D.\*, & Fountain, S. B. (1990). Acute carbon monoxide effects on brain-stimulation reward in rats. *Toxicologist*, 10, 304. (Poster presented at the annual meeting of the Society of Toxicology, Miami Beach, FL.)
- Rowan, J. D.\*, & Fountain, S. B. (1990). Rats' response to violations of pattern structure. Poster presented at the annual meeting of the Midwestern Psychological Association, Chicago, IL.
- Fountain, S. B., & Rowan, J. D.\* (1990). Hierarchical organization and rat serial pattern learning. *Bulletin of the Psychonomic Society*, 28, 485. (Paper presented at the annual meeting of the Psychonomic Society, New Orleans, LA.)
- Nering, M. L.\*\*, Rowan, J. D.\*, & Fountain, S. B. (1991). Phrasing and chunk length as determinants of rat serial pattern learning. Poster presented at the annual meeting of the Midwestern Psychological Association, Chicago, IL.
- Fountain, S. B., & Teyler, T. J. (1991). Suppression of hippocampal slice excitability by 2-, 3-, and 4-methylpyridine. *Society for Neuroscience Abstracts*, 17, 1460. (Poster presented at the annual meeting of the Society for Neuroscience, New Orleans, LA.)
- Fountain, S. B., Rowan, J. D.\*, & Nering, M. L.\*\* (1991). Hierarchical and nonhierarchical organization and rat serial pattern learning. *Bulletin of the Psychonomic Society*, 29, 540. (Poster presented at the annual meeting of the Psychonomic Society, San Francisco, CA.)
- Fountain, S. B. (1992). The problem of serial order in animal behavior. Paper presented at the Tenth Annual Winter Conference on Animal Learning, Winter Park, CO.

- Rowan, J. D.\*, Toner, B. S.\*, & Fountain, S. B. (1992). MK-801 enhances brain-stimulation reward and impairs serial pattern learning in rats. *Toxicologist*, 12, 273. (Poster presented at the annual meeting of the Society of Toxicology, Seattle, WA.)
- Fountain, S. B., Toner, B. S., & Rowan, J. D. (1992). Evaluation of acrylamide neurotoxicity using the *in vitro* hippocampal slice preparation. *Toxicologist*, 12, 323. (Poster presented at the annual meeting of the Society of Toxicology, Seattle, WA.)
- Fountain, S. B., & Rowan, J. D. (1992). Cumulative dose response functions for lead acetate, triethyllead, and methylmercury in the rat hippocampal slice. *Society for Neuroscience Abstracts*, 18, 1609. (Poster presented at the annual meeting of the Society for Neuroscience, Anaheim, CA.)
- Rowan, J. D., & Fountain, S. B. (1992). MK-801 impairs serial learning but not retention for serial patterns in rats. *Society for Neuroscience Abstracts*, 18, 1060. (Poster presented at the annual meeting of the Society for Neuroscience, Anaheim, CA.)
- Carman, H. M., Rowan, J. D., Dobis, W.\*\*\*, & Fountain, S. B. (1993). "Run" vs. "trill" rules in rat serial pattern learning. Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago, Illinois.
- Rowan, J. D., & Fountain, S. B. (1993). Chunking items from non-adjacent serial positions in rat serial-pattern learning. Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago, Illinois.
- Wollan, M. O., Rowan, J. D., & Fountain, S. B. (1993). Atropine effects on serial pattern retention in rats. Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago, Illinois.
- Krauchunas, S. M., Rowan, J. D., & Fountain, S. B. (1993). Cumulative dose response functions for lead acetate and triethyllead in the rat hippocampal slice. Poster presented at the annual meeting of the Midwestern Psychological Association, Chicago, Illinois.
- Benson, D. M., Rowan, J. D., & Fountain, S. B. (1993). Characteristics of chunking nonadjacent items in rat serial-pattern learning. Poster presented at the annual meeting of the Psychonomic Society, Washington, D.C.
- Carman, H. M., Newberry, B. H., & Fountain, S. B. (1993). Bacterial lipopolysaccharide reduces general activity, consumption, and temperature in Long-Evans rats. *Society for Neuroscience Abstracts*, 19, 503. (Poster presented at the annual meeting of the Society for Neuroscience, Washington, D.C.)
- Rowan, J. D., Fowler, M. S.\*\*\*, & Fountain, S. B. (1993). MK-801 impairments of pattern tracking under transfer from highly structured to less structured serial patterns in rats. *Society for Neuroscience Abstracts*, 19, 1232. (Poster presented at the annual meeting of the Society for Neuroscience, Washington, D.C.)
- Wollan, M. O., & Fountain, S. B. (1993). Cholinergic involvement in retention of serial pattern structure in rats. *Society for Neuroscience Abstracts*, 19, 1232. (Poster presented at the annual meeting of the Society for Neuroscience, Washington, D.C.)
- Fountain, S. B., & Rowan, J. D. (1994). Coding of hierarchical organization in rat and human serial-pattern learning. Paper presented at the first annual meeting of the Conference on Comparative Cognition, Melbourne, Florida.
- Carman, H. M., Sullivan, K., & Fountain, S. B. (1994). Good gestalt grouping is not necessary for good temporal phrasing in rat serial-pattern learning. Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago, Illinois.
- Benson, D. M., Jr., & Fountain, S. B. (1994). Chunking elements of interleaved patterns in rat serial-pattern learning. Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago, Illinois.
- Wollan, M. O., & Fountain, S. B. (1994). Atropine effects on rats' retention of unphrased serial patterns. Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago, Illinois.

- Fountain, S. B., Rowan, J. D., & Krauchunas, S. M. (1995). Serial-pattern learning in rodents: Are mice "little rats?" Paper presented at the second annual meeting of the Conference on Comparative Cognition, Melbourne, Florida.
- Benson, D. M.\*, & Fountain, S. B. (1995). Chunking interleaved patterns in rat serial pattern learning. Paper presented at the Tristate Psychological Conference, Columbus, Ohio.
- Carman, H. M.\*, & Fountain, S. B. (1995). Pattern induction in rats: Serial vs. parallel processing of sequential information. Paper presented at the Tristate Psychological Conference, Columbus, Ohio.
- Benson, D. M.\*, & Fountain, S. B. (1995). Chunking interleaved patterns in rat serial pattern learning. Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago, Illinois.
- Krauchunas, S. M.\*, Rowan, J. D.\*, & Fountain, S. B. (1995). Serial-pattern learning in the CF1 mouse. Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago, Illinois.
- Fountain, S. B. (1996). Temporal organization in sequential behavior. Paper presented at the Kent State University Applied Psychology Center Forum, Kent, Ohio.
- Carman, H. M.\*, & Fountain, S. B. (1996). Violations of formal structure and pattern induction in rat serial-pattern learning. Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago, Illinois.
- Stempowski, N. K.\*, Carman, H. M.\*, & Fountain, S. B. (1996). Temporal phrasing in rat serial-pattern learning: Cues or processing time? Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago, Illinois.
- Fountain, S. B., Stempowski, N. K.\*, Benson, A. M.\*, Wallace, D. G.\* (1996). Temporal phrasing in rat serial-pattern learning. *Abstracts of the Psychonomic Society, 1*, 56. Paper presented at the annual meeting of the Psychonomic Society, Chicago, IL.
- Benson, D. M.\*, & Fountain, S. B. (1997). How do rats track interleaved serial patterns? Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago, Illinois.
- Wallace, D. G.\*, & Fountain, S. B. (1997). Do rats learn rules? A computational model of food quantity pattern learning. Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago, Illinois.
- Stempowski, N. K.\*, & Fountain, S. B. (1997). Temporal phrasing in rat serial-pattern learning. Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago, Illinois.
- Wallace, D. G.\*, & Fountain, S. B. (1997). "Rule generalization" behavior can be simulated by an associative computational model. *Society for Neuroscience Abstracts, 23*, 1602. (Poster presented at the annual meeting of the Society for Neuroscience, New Orleans, LA.).
- Wallace, D. G.\*, & Fountain, S. B. (1998). "Rule generalization" and associative transfer can be simulated by an associative computational model. Poster presented at the Tri-State Conference on Animal Learning and Behavior, Lexington, KY, March 27, 1998.
- Wallace, D. G.\*, & Fountain, S. B. (1998). A computational model of rat serial-pattern learning: Phrasing effects. Paper presented at the Tri-State Conference on Animal Learning and Behavior, Lexington, KY, March 28, 1998.
- Krauchunas, S. M.\*, & Fountain, S. B. (1998). Differential effects of MK-801 and atropine on serial-pattern tracking in mice. *Society for Neuroscience Abstracts, 24*, 2120. (Poster presented at the annual meeting of the Society for Neuroscience, Los Angeles, CA, November, 1998).
- Wallace, D. G.\*, & Fountain, S. B. (1999, March). Behavioral tests of a computational model of rat serial-pattern learning. Paper presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL, March 1999.

- Benson, D. M., Jr.\* & Fountain, S. B. (1999, April). Tracking shifted subpatterns: New evidence for rule sensitivity in rat interleaved serial pattern learning. Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago, Illinois.
- Wallace, D. G.\*, Benson, A. M.\*\* & Fountain, S. B. (1999, April). Temporal phrasing in rat serial-pattern learning: Rhythmicity versus overshadowing. Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago, Illinois.
- Benson, D. M.\* , Jr., & Fountain, S. B. (1999, May). Comparing predictive values of theories explaining rat serial performance. Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago, Illinois.
- Wallace, P. S.\* , Wallace, D. G.\* , Flavelle, J. P.\*\* , Fountain, S. B., & Riccio, D. C. (1999, November). The effects of a benzodiazepine on brain stimulation reward thresholds. *Society for Neuroscience Abstracts*, 25, 1874. (Poster presented at the annual meeting of the Society for Neuroscience, Miami, FL, November, 1999).
- Muller, M. D.\* , Wallace, D. G.\* , Novak, C. L.\* , Smith, D. P.\* , & Fountain, S. B. (1999, November). Anticipation of "exceptions-to-the-rule" in rat sequential learning. *Society for Neuroscience Abstracts*, 25, 85. (Poster presented at the annual meeting of the Society for Neuroscience, Miami, FL, November, 1999).
- Wallace, D. G.\* , Lewis, C. F.\* , Fountain, S. B., & Block, C. H. (1999, November). Rat "rule induction" can be modeled by a neural network with supervised learning. *Society for Neuroscience Abstracts*, 25, 85. (Poster presented at the annual meeting of the Society for Neuroscience, Miami, FL, November, 1999).
- Lewis, C. F.\* , McBeath, M. K., & Fountain, S. B. (1999, November). Finding the missing fundamental: A connectionist model of harmonic detection. Paper presented at the annual meeting of the Acoustical Society of America, Columbus, OH, November 1999.
- Rowan, J. D., Fountain, S. B., Kundey, S.\*\* , & Miner, C.\*\* (2000, August). A multiple species approach to sequential learning: Are you a man or a mouse? Presentation at the 3rd International Conference on Methods and Techniques in Behavioral Research, Nijmegen, The Netherlands.
- Wallace, D.G.\* , Muller, M.D.\* , Smith, D.P.\* , & Fountain, S.B. (2000, November). Stimulus control of serial behavior in a three-level hierarchical sequence. *Society for Neuroscience Abstracts*, 26, 2218. (Poster presented at the annual meeting of the Society for Neuroscience, New Orleans, LA, November, 2000).
- Muller, M.D.\* , Wallace, D.G.\* , Smith, D.P.\* , & Fountain, S.B. (2000, November). Predicting pattern violations using serial position in rat sequential learning. *Society for Neuroscience Abstracts*, 26, 2244. (Poster presented at the annual meeting of the Society for Neuroscience, New Orleans, LA, November, 2000).
- Muller, M.D.\* , & Fountain, S.B. (2001, May). Stimulus control of responding at chunk boundary, within-chunk, and violation elements in rat serial pattern learning. Paper presented at the Tri-State Animal Learning & Behavior Conference, Columbus, OH.
- Muller, M.D.\* , Wallace, D.G.\* , Fountain, S.B., & Joynes, R.L. (2001, November). Control by multiple cognitive processes in rat serial pattern learning. Poster presented at the annual meeting of the Society for Neuroscience, San Diego, CA.
- Smith, D.P.\* , Anderson, M.J.\* , Flavelle, J.P.\*\* , & Fountain, S.B. (2001, November). Hippocampal lesions impair anticipation of chunk boundaries in rat serial pattern learning. Poster presented at the annual meeting of the Society for Neuroscience, San Diego, CA.
- Smith, D.P.\* , & Fountain, S.B. (2002, April). A comparison of hippocampal lesions and MK-801 effects on rat serial pattern learning. Paper presented at the Tri-State Conference on Animal Learning & Behavior, Lexington, KY.

- Smith, D.P.\* , & Fountain, S.B. (2003, March). Medial frontal cortex lesions and rat serial pattern learning. Paper presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Muller, M.D.\* , Smith, D.P.\* , & Fountain, S.B. (2003, April). Mutant patterns reveal how rats anticipate violations in structured serial patterns. Paper presented at the Tri-State Conference on Animal Learning & Behavior, Bloomington, IN.
- Smith, D.P.\* , & Fountain, S.B. (2003, April). Serial pattern learning in rats with lesions of dorsal hippocampus or medial frontal cortex. Paper presented at the Tri-State Conference on Animal Learning & Behavior Conference, Bloomington, Indiana.
- Muller, M.D.\* , Smith, D.P.\* , & Fountain, S.B. (2003, September). Rats use compound cues to anticipate chunk boundaries in a serial learning task. Poster presented at the annual meeting of the Pavlovian Society, Bloomington, Indiana.
- Smith, D.P.\* , Muller, M.D.\* , & Fountain, S.B. (2003, September). Chunk formation in rat serial pattern learning. Poster presented at the annual meeting of the Pavlovian Society, Bloomington, IN.
- Smith, D.P.A.\* , & Fountain, S.B. (2003, November). Interleaved serial pattern learning in medial frontal cortex lesioned rats. Poster presented at the annual meeting of the Society for Neuroscience, San Diego, CA.
- Fountain, S.B., Muller, M.D.\* , & Smith, D.P.A.\* (2004, March). Multiple processes in rat sequential learning. Paper presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Smith, D.P.\* , Anderson, M.J.\* , Flavell, J.P.\*\* , & Fountain, S.B. (2004, April). Hippocampal lesions impair anticipation of chunk boundaries in rat serial pattern learning. Poster presented at the 2004 Kent State University Biomedical Science Research Conference (same as that presented at the annual meeting of the Society for Neuroscience, San Diego, CA, November, 2001).
- Smith, D.P.\* , Muller, M.D.\* , & Fountain, S.B. (2004, April). Chunk formation in rat serial pattern learning. Poster presented at the 2004 Kent State University Biomedical Science Research Conference (same as that presented at the annual meeting of the Pavlovian Society, Bloomington, IN, September, 2003).
- Smith, D.P.A.\* , & Fountain, S.B. (2004, April). Interleaved serial pattern learning in medial frontal cortex lesioned rats. Poster presented at the 2004 Kent State University Biomedical Science Research Conference (same as that presented at the annual meeting of the Society for Neuroscience, San Diego, CA, November, 2003).
- Fountain, S.B. (2004, May). Chunking in rat interleaved serial pattern learning. Paper presented at the Tri-State Conference on Animal Learning & Behavior, Kent, OH.
- Muller, M. D.\* , & Fountain, S.B. (2004, May). Acquisition rates of chunk boundary, within chunk, and violation elements in three patterns. Paper presented at the Tri-State Conference on Animal Learning & Behavior, Kent, OH.
- Smith, D.P.A.\* , & Fountain, S.B. (2004, May). Serial pattern learning after excitotoxic lesion of the medial caudate putamen. Paper presented at the Tri-State Conference on Animal Learning & Behavior, Kent, OH.
- Chenoweth, A.\* , Muller, M.D.\* , Owens, J.\*\* , Moore, Z.\* , Smith, D.P.A.\* , & Fountain, S.B. (2005, March). Contextual coding in rat serial pattern learning: Serial position as context for temporal phrasing cues. Poster presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Muller, M. D.\* , Moore, Z.\* , Smith, D. P. A.\* , & Fountain, S.B. (2005, March). Do rats use rules or associations in serial pattern learning? Poster presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.

- Smith, D.P.A.\* & Fountain, S.B. (2005, March). Medial and lateral caudate putamen lesions and rat serial pattern learning. Poster presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Willey, A.R.\*\*, Rowan, J.D., & Fountain, S.B. (2005, March). The role of correction in double alternation learning in rats. Poster presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Chenoweth, A. M.\* & Fountain, S. B. (2005, May). Serial position as an occasion setter for temporal phrasing cues in rat serial pattern learning. Paper presented at the Tri-State Conference on Animal Learning & Behavior, Windsor, Ontario, Canada.
- Chenoweth, A. M.\*, Smith, D. P. A.\*, & Fountain, S. B. (2005, November). Central cholinergic systems are necessary for learning “exceptions-to-the-rule” in rat serial pattern learning. *Abstract Viewer/Itinerary Planner* (Program No. 653.3). Washington, DC: Society for Neuroscience.
- Willey, A. R.\*\*, Nolley, E. P.\*\*, Rowan, J. D., Kelley, B. M., & Fountain, S. B. (2005, November). Adolescent exposure to methylphenidate (Ritalin) impairs learning of perfect serial patterns in adult rats. *Abstract Viewer/Itinerary Planner* (Program No. 884.2). Washington, DC: Society for Neuroscience.
- Chenoweth, A. M.\* & Fountain, S. B. (2006, March). Central cholinergic systems are necessary for learning and retaining “exceptions-to-the-rule” in rat serial pattern learning. Poster presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Chenoweth, A. M.\*, Wolfe, S. A.\*\*, & Fountain, S. B. (2006, March). “Extreme” serial pattern learning: Rats learn 60-element interleaved serial patterns. Poster presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Fountain, S. B., & Chenoweth, A. M.\* (2006, March). Central cholinergic systems are necessary for organized responses to cue changes in rat serial pattern learning. Paper presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Fountain, S. B., & Chenoweth, A. M.\* (2006, March). A serial reaction time task for rats: Individual differences in sequence encoding. Poster presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Rowan, J. D., Willey, A. R.\*\*, Nolley, E. P.\*\*, Kelley, B. M., & Fountain, S. B. (2006, March). Adolescence exposure to nicotine impairs adult serial-pattern learning in rats. Poster presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Smith, D. P. A.\* & Fountain, S. B. (2006, March). Medial caudate putamen lesions and rat serial pattern learning. Poster presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Chenoweth, A. M.\* & Fountain, S. B. (2006, April). Central cholinergic systems and sequential learning. Paper presented at the Tri-State Conference on Animal Learning & Behavior, Indianapolis, IN.
- Smith, D. P. A.\* & Fountain, S. B. (2006, October). Effects of MK-801 on encoding versus performance in rat serial pattern learning. *Abstract Viewer/Itinerary Planner* (Program No. 462.2). Atlanta, GA: Society for Neuroscience.
- Chenoweth, A. M.\* & Fountain, S. B. (2006, October). Differential effects of nicotine, mecamylamine, and scopolamine on rat serial pattern retention. *Abstract Viewer/Itinerary Planner* (Program No. 462.3). Atlanta, GA: Society for Neuroscience.
- Chenoweth, A. M.\* & Fountain, S. B. (2007, March). Acute nicotine exposure produces only mild impairments of adult rat serial pattern performance. Poster presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.

- Fountain, S. B., Smith, D. P. A.\*, Chenoweth, A. M.\*, Rowan, J. D., Muller, M. D., Glass, L. R.\*, & Kunder, S. M. A.\* (2007, March). Distinct behavioral and brain processes subserving serial pattern learning. Paper presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Kunder, S. M. A.\*, Rowan, J. D., & Fountain, S. B. (2007, March). Some limitations of the Sequential Pairwise Associative Memory (SPAM) model of rat serial pattern learning. Poster presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Chenoweth, A. M.\*, & Fountain, S. B. (2007, April). Differential drug effects on the performance of a well-learned serial pattern: Cholinergic and NMDA receptor manipulations. Paper presented at the Tri-State+ Conference on Animal Learning & Behavior, West Lafayette, IN.
- Fountain, S. B., Kunder, S. M. A.\*, & Rowan, J. D. (2008, March). Instrumental blocking and rule learning in rat serial pattern learning. Poster presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Kunder, S. M. A.\*, Polack, C.\*\*\*, Taylor, C. L.\*\*\*, & Fountain, S. B. (2008, March). Irrelevant relations and beginning-to-end serial pattern learning in rats. Poster presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Pickens, L. R. G.\*, & Fountain, S. B. (2008, March). Pattern structure and scopolamine effects in a serial reaction time task for rats. Poster presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Smith, D. P. A.\*, & Fountain, S. B. (2008, March). The role of medial caudate putamen in rat serial pattern learning. Poster presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Chenoweth, A. M.\*, & Fountain, S. B. (2008, March). The effects of atropine on rats' strategy development after cue changes in serial patterns. Paper presented at the Tri-State+ Conference on Animal Learning & Behavior, Lexington, KY.
- Doyle, K. E.\*, & Fountain, S. B. (2009, March). Two new methods for studying serial pattern learning in rats. Poster presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Kunder, S. M. A.\* & Fountain, S. B. (2009, March). Rats abstract rules from a response sequence lacking a consistent motor sequence. Paper presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Pickens, L. R. G.\*, & Fountain, S. B. (2009, March). Adolescent nicotine exposure procedures and adult rat serial pattern learning. Poster presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Chenoweth, A. M.\*, & Fountain, S. B. (2009, April). Scopolamine effects with water reward in rat serial pattern learning. Paper presented at the Tri-State+ Conference on Animal Learning & Behavior, Albion, MI.
- Pickens, L. R. G.\*, & Fountain, S. B. (2009, April). Effects of adolescent nicotine exposure via osmotic minipump on adult rat serial pattern learning. Paper presented at the Tri-State+ Conference on Animal Learning & Behavior, Albion, MI.
- Smith, D. P. A.\*, & Fountain, S. B. (2009, April). Deficits produced by MK-801 in rat serial pattern learning are not seen after dorsal hippocampal and medial frontal cortex lesions. Paper presented at the Tri-State+ Conference on Animal Learning & Behavior, Albion, MI.
- Chenoweth, A. M.\*, & Fountain, S. B. (2009, October). The effects of scopolamine on rat serial pattern learning with water reward. *Neuroscience Meeting Planner* (Program No. 887.13). Chicago, IL: Society for Neuroscience. Online.

- Chenoweth, A. M.\* & Fountain, S. B. (2010, March). Scopolamine dissociates cognitive processes responsible for phrasing effects versus violation element performance in rats. Poster presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Doyle, K. E.\* & Fountain, S. B. (2010, March). Serial pattern learning in rats: Rule induction and pattern tracking in patterns containing 2, 4, or 8 interleaved random elements. Poster presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Kundey, S. M. A.\* & Fountain, S. B. (2010, March). Reducing irrelevant relations facilitates learning rules from a response series lacking a consistent motor sequence in rats. Poster presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Pickens, L. R. G.\* & Kolar, K. L.\*\* & Fountain, S. B. (2010, March). Sex differences in adult rat serial pattern learning. Poster presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Chenoweth, A. M.\* & Fountain, S. B. (2010, April). Scopolamine dissociates cognitive processes responsible for phrasing effects versus violation element performance in rats: A deeper look. Paper presented at the Tri-State+ Conference on Animal Learning & Behavior, Bloomington, IN.
- Kolar, K. L.\*\* & Soehngen, E. P.\*\* & Trhlik, C.\*\* & Pickens, L. R. G.\* & Rowan, J. D., Bevins, R. A. & Fountain, S. B. (2010, April). Effects of adolescent nicotine exposure on serial pattern learning in adult male and female rats. Paper presented at the Tri-State+ Conference on Animal Learning & Behavior, Bloomington, IN.
- Doyle, K. E.\* & Fountain, S. B. (2010, April). Serial pattern learning in rats: Rule induction and pattern tracking in patterns containing predictable or random interleaved elements. Paper presented at the Tri-State+ Conference on Animal Learning & Behavior, Bloomington, IN.
- Trhlik, C.\*\* & Doyle, K. E.\* & Fountain, S. B. (2010, April). Serial pattern learning: Interleaved pattern transfer. Paper presented at the Tri-State+ Conference on Animal Learning & Behavior, Bloomington, IN.
- Cullen, P. K.\* & Pickens, L. R. G.\* & Rexroad, S.\*\* & Fountain, S. B., & Riccio, D. C. (2010, May). The effects of adolescent nicotine exposure on adult memory for stimulus attributes. Poster presented at the annual meeting of the Midwestern Psychological Association, Chicago, IL.
- Meduri, J. D.\*\* & Pickens, L. R. G.\* & Rowan, J. D., Bevins, R. A. & Fountain, S. B. (2010, October). Sex differences in adult sequential learning impairments caused by adolescent nicotine exposure. Poster presented at the annual meeting of the Pavlovian Society, Baltimore, MD.
- Chenoweth, A. M.\* & Fountain, S. B. (2010, October). Scopolamine retards acquisition of rat serial pattern and reversal learning. Poster presented at the annual meeting of the Pavlovian Society, Baltimore, MD.
- Cullen, P. K.\* & Stewart, L.\*\* & Gos, K. K.\*\* & Pickens, L. R. G.\* & Fountain, S. B., & Riccio, D. C. (2010, October). Exposure to adolescent nicotine results in an increase in the forgetting of contextual cues in adult rats. Poster presented at the annual meeting of the Pavlovian Society, Baltimore, MD.
- Meduri, J. D.\*\* & Burkholder, T. J.\*\* & Pickens, L. R. G.\* & Fountain, S. B. (2011, March). Age-related differences in rat serial pattern learning. Poster presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.

- Doyle, K. E. \*, & Fountain, S. B. (2011, March). Target pattern acquisition is affected by interleaved element structure and cueing in rat serial pattern learning. Poster presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Meduri, J. D.\*\*, Pickens, L. R. G.\*, & Fountain, S. B. (2011, April). What error analysis tells us about age-related differences in serial pattern acquisition. Paper presented at the Tri-State+ Conference on Animal Learning & Behavior, West Lafayette, IN.
- Doyle, K. E. \*, & Fountain, S. B. (2011, May). Target pattern acquisition is affected by interleaved element structure and cueing in rat serial pattern learning: A transfer experiment. Paper presented at the Tri-State+ Conference on Animal Learning & Behavior, West Lafayette, IN.
- Trask, S.\*\*, Cullen, P. K. \*, Gos, K. K.\*\*, Pickens, L. R. G. \*, Fountain, S. B., & Riccio, D. C. (2011, May). Adolescent nicotine affects memory for stimulus attributes but not extinction. Poster presented at the annual meeting of the Midwestern Psychological Association, Chicago, IL.
- Pickens, L. R. G. \*, Rowan, J. D., Bevins, R. A., & Fountain, S. B. (2011, June). Dose-dependent effects of adolescent nicotine exposure on cognition in the adult female rat. Poster presented at the annual meeting of the Neurobehavioral Teratology Society, San Diego, CA. *Winner of the award for Best Poster Presentation.*
- Pickens, L. R. G. \*, Rowan, J. D., Bevins, R. A., & Fountain, S. B. (2011, November). Dose-dependent effects of adolescent nicotine exposure on cognition in the adult female rat. Poster presented at the first annual poster day of the Society for Neuroscience for Neuroscience Northeast Ohio Chapter, Rootstown, OH.
- Pickens, L. R. G. \*, Rowan, J. D., Bevins, R. A., & Fountain, S. B. (2011, November). Nicotine exposure during adulthood does not produce the same pattern of cognitive impairments in rats as seen following adolescent exposure. *Neuroscience Meeting Planner* (Program No. 935.17). Washington, DC: Society for Neuroscience. Online.
- Garlick, D., Fountain, S. B., & Blaisdell, A. P. (2012, March). Sequence learning in pigeons: Behavior can reflect an abstract rule. Paper presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Doyle, K. E. \*, Smith, A. M.\*\*, Garlick, D., Blaisdell, A. P., & Fountain, S. B. (2012, March). Towards a touchscreen serial multiple choice (SMC) task for rats. Poster presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Renaud, S. M. \*, Pickens, L. R. G. \*, & Fountain, S. B. (2012, March). Effects of injection stress on rat serial pattern learning. Poster presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Renaud, S. M. \*, & Fountain, S. B. (2012, April). Effects of stress and nicotine in adolescence on adult rat sequence learning. Paper presented at the Tri-State+ Conference on Animal Learning & Behavior, Kent, OH.
- Doyle, K. E. \*, Renaud, S. M. \*, Martin, C.\*\*, Garlick, D., Blaisdell, A. P., & Fountain, S. B. (2012, October). Serial pattern acquisition a touchscreen task for rats. Poster presented at the annual fall meeting of the International Conference on Comparative Cognition, New Orleans, LA.
- Blaisdell, A. P., Garlick, D., & Fountain, S. B. (2012, October). Sequence learning in pigeons: Control by rote memory and an abstract rule. *Neuroscience Meeting Planner* (Program No. 104.02). Washington, DC: Society for Neuroscience. Online.
- Renaud, S. M. \*, Pickens, L. R. G. \*, & Fountain, S. B. (2012, October). Effects of stress and nicotine experienced during adolescence on learning in a serial multiple choice (SMC) task in adult female rats. *Neuroscience Meeting Planner* (Program No. 204-12). Washington, DC: Society for Neuroscience. Online.

- Doyle, K. E. \*, Renaud, S. M. \*, Garlick, D., Blaisdell, A. P., & Fountain, S. B. (2013, March). Serial pattern acquisition in a touchscreen task for rats. II. Element acquisition as a function of memory load and pattern structure. Poster presented at the annual meeting of the International Conference on Comparative Cognition, Melbourne, FL.
- Renaud, S. M. \*, Orenstein, N. \*\*, Karanouh-Schuler, E. \*\*, & Fountain, S. B. (2013, March). Epigenetic effects of adolescent nicotine exposure on rat serial pattern learning. Paper presented at the Tri-State+ Conference on Animal Learning & Behavior, Columbus, OH.
- Miller, M. E. \*\*, Williams, A. M. \*\*, Doyle, K. E. \*, & Fountain, S. B. (2013, March). Rats are sensitive to violations in serial patterns in a touchscreen SMC task. Paper presented at the Tri-State+ Conference on Animal Learning & Behavior, Columbus, OH.

**Doctoral Dissertations Supervised:**

- **Yen-Ling Teresa Ting, Ph.D. 1989**, “*Triethyltin Neurotoxicity: Effects on CNS Synaptic Transmissio*”
- **James D. Rowan, Ph.D. 1993**, “*The Effects of MK-801, an NMDA Antagonist, on Serial-Pattern Learning and Retention in the Rat*”
- **Michael O. Wollan, Ph.D. 1995**, “*Atropine Effects on Rats' Retention of Phrased and Unphrased Serial Patterns*”
- **Heidi M. Carman, Ph.D. 1997**, “*Pattern Induction in Rats: Violations of Formal Structure in Serial-Pattern Learning*”
- **Scott M. Krauchunas, Ph.D. 1998**, “*Differential Effects of MK-801 and Atropine on Serial-Pattern Tracking in the CF1 Mouse*”
- **Don M. Benson, Jr., M.D., 1999, Ph.D. 1999**, “*Determining the Cognitive Mechanisms Involved in Rat Interleaved Serial Pattern Learning*”
- **Douglas G. Wallace, Ph.D. 2000**, “*Stimulus Control of Serial Behavior in Three-Level Hierarchical Sequences*”
- **Clifford F. Lewis, Ph.D. 2003**, “*A Neural Network Model of Virtual Pitch*”
- **Melissa D. Muller, Ph.D. 2006**, “*Serial Pattern Learning in Rats: Identifying the Processes Underlying Three Patterns*”
- **Shannon M. A. Kunder, Ph.D. 2008**, “*Irrelevant Relations in Rat Serial Pattern Learning*”
- **Amber M. Chenoweth, Ph.D. 2010**, “*The Effects of Scopolamine on Rat Serial Pattern Learning and Reversal Learning*”
- **Laura R. G. Pickens, Ph.D. 2012**, “*The Effects of Chronic Adolescent Nicotine Exposure on Adult Cognition in the Male and Female Rat*”
- **Denise P. A. Smith, Ph.D. 2012**, “*The Basal Ganglia and Sequential Learning*”

**Master's Theses Supervised:**

- **James D. Rowan, M.A. 1990**, “*Carbon Monoxide Decreases the Rewarding Quality of Brain Stimulation Reward in Rats*”
- **Nannette K. Stempowski, M.A. 1997**, “*Temporal Phrasing and Rat Serial-Pattern Learning*”
- **Scott M. Krauchunas, M.A. 1994**, “*Extracellular Ca<sup>2+</sup> Modulation of Triethyllead and Triethyltin Neurotoxicity in Area CA1 of the Rat Hippocampal Slice*”
- **Don M. Benson, Jr., M.A. 1994**, “*Characteristics of Chunking Nonadjacent Items in Rat Serial-Pattern Learning*”
- **Douglas G. Wallace, M.A. 1997**, “*Do Rats Learn Rules? A Computational Model of Food Quantity Pattern Learning*”
- **Denise P. A. Smith, M.A. 2004**, “*The Effects of MK-801 and Hippocampal Lesions on Serial Pattern Learning*”
- **Melissa D. Muller, M.A. 2000**, “*Stimulus Control of Responding to Within Chunk, Chunk Boundary, and Violation Elements in a Rat Serial Learning Task*”
- **Amber M. Chenoweth, M.A. 2007**, “*The Effects of Muscarinic Cholinergic Blockade on Rat Serial Pattern Learning and Retention*”
- **Laura R. G. Pickens, M.A. 2009**, “*The Effects of Adolescent Nicotine Exposure on Adult Rat Serial Pattern Learning*”
- **Samantha M. Renaud, M.A., 2013**, “*Epigenetic effects of adolescent nicotine exposure on rat serial pattern learning*”

**Honors Theses Supervised:**

- **Aimée M. Benson, Honors Thesis, 1996**, “*Relative Timing: The Effect of Temporal Structure on Serial Pattern Learning*”
- **Jennifer Knick, Honors Thesis, 2001**, “*The Use of Counting and Timing in Serial Pattern Learning in Rats*”
- **Colleen Trhlik, Honors Thesis, 2010 Spring**, “*Rat Serial Pattern Learning: Interleaved Pattern Transfer*”
- **Alison Dickerhoof, Honors Thesis, 2012 Spring**, “*Associative Learning versus Rule-Learning: A Computer Model of Pattern Phrasing Effects*”

**Teaching Experience:**

- General Psychology (Undergraduate)
- Basic Learning Processes (Undergraduate)
- Animal Cognition (Undergraduate)
- Physiological Psychology (Undergraduate)
- Experimental Psychology & Lab (Undergraduate)
- Developmental Psychology (Undergraduate)
- Undergraduate University Orientation (Undergraduate)
  
- Introduction to Learning (Graduate Core)
- Animal Cognition (Graduate)
- Comparative Cognition (Graduate)
- Drugs and Behavior (Graduate)
- Neural Substrates of Behavior (Graduate)
- Connectionism and Neural Networks (Graduate)
- Computer Applications in Psychology (Graduate)
- Neurobiology Seminar (Graduate)
- Introduction to Toxicology (Selected Lectures) (Graduate)
- Neurophysiology (Selected Lectures) (Graduate)
  
- Functional Neuroanatomy (Selected Lectures) & Lab (Medical)
- Review of Basic Science Concepts: Implications and Applications for Psychiatry (Medical Residents: Psychiatry)

**Departmental Service:**

- Experimental Training Committee, 1988-present
- Ad Hoc Promotion and Tenure Committee, 2002-present
- Resources and Development Committee, 2010-present
- Applied Psychology Center Advisory Committee, 2012-present
- Coordinated Hires Search Committee, AY 2009-2010
- Applied Psychology Center Advisory Committee, 2008-2010
- Undergraduate Coordinating Committee, 2007-2010
- Strategic Planning Advisory Committee (SPAC), AY 2008-2009
- Resources and Development Committee, AY 2006-2007
- Undergraduate Coordinating Committee, 2004-2006
- Substance Abuse/Psychopharmacology Search Committee, AY 2005-2006
- Applied Psychology Center Advisory Committee, AY 2004-2005
- Colloquium Committee, Chair, 1990-2004
- Department Webmaster, 2000-2004
- Graduate Curriculum Revision Committee, 2001-2002
- Psychobiology Search Committee, AY 1999-2000
- Graduate Admissions Committee, 1996-1999
- Ad hoc committee for Elective Laboratory Courses in the Undergraduate Curriculum
- Web Page Approval Committee, 1996-1998
- Behavioral Neuroscience Search Committee, AY 1994-1995
- Space and Facilities Committee, Chair, 1991
- Faculty Advisory Committee, AY 1990-1991
- Clinical Search Committee, AY 1990-1991
- Research Drugs Policy Committee
- Curriculum Revision Committee

**College & University Service:**

- Faculty Senate, Arts & Sciences, 2008-present
- Neurosciences Area Committee, Member, KSU School of Biomedical Sciences, 1988-present
- BS/MD Program Admissions Committee, 2000
- Chair, Neurosciences Program, KSU School of Biomedical Sciences, 1992-1996
- Admissions Committee, Neurosciences Program, School of Biomedical Sciences, 1990-1996
- KSU Committee on Hazardous and Radioactive Materials (CHARM), 1993-1995
- KSU Chemical Safety Committee (subcommittee of CHARM), 1993-1995
- Institutional Animal Care and Use Committee, 1994 (Fall)
- Biomedical Research Support Grant Review Committee, 1990-1994
- Chair, Sigma Xi Awards Committee, 1992
- Sigma Xi Awards Committee, 1991
- University Biosafety Committee, 1990-1991