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University of Iowa Distinguished Chair

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## EDUCATIONAL AND PROFESSIONAL HISTORY

### EDUCATION

University of Chicago, Biopsychology, Ph.D., 1988  
University of Chicago, Biopsychology, M.A., 1987  
Brandeis University, Physics and Philosophy, A.B., 1983

### PROFESSIONAL AND ACADEMIC POSITIONS

Chair, Department of Psychological and Brain Sciences, University of Iowa, 2017-present.  
Member, Iowa Neuroscience Institute, 2017-present.  
Director, The DeLTA Center, University of Iowa, 2016-2017.  
Professor, Department of Biology, University of Iowa, 2010-present.  
Interim Director, The DeLTA Center, University of Iowa, July-December 2010.  
Professor, Department of Psychology, University of Iowa, 2001-present.  
Associate Professor, Department of Psychology, University of Iowa, 1996-2001.  
Assistant Professor, Department of Psychology, University of Iowa, 1992-1996.  
Research Associate, Indiana University, Bloomington, 1988-1992.  
Research Assistant, University of Chicago, 1983-1988.

### HONORS AND AWARDS

Eliot Hearst Lecturer, Department of Psychological and Brain Sciences, Indiana University, Bloomington, spring 2025.  
University of Iowa Distinguished Chair, 2023-present.  
AAAS Fellow, American Association for the Advancement of Science, 2021.  
Senior Investigator Award, International Society for Developmental Psychobiology (ISDP), 2020.  
F. Wendell Miller Professor, University of Iowa, 2009-2023.  
MERIT Award (R37), National Institute of Child Health and Human Development, 2014-2024.  
Scholar of the Year Award, Office of the Vice-President for Research, University of Iowa, 2016.  
Harley Hotchkiss Memorial Lecturer, "Department of Neuroscience and the Canadian Centre for Behavioural Neuroscience, University of Lethbridge, Canada, April 9, 2015.  
Exemplar Award, Center for the Integrative Study of Animal Behavior (CISAB), Indiana University, 2014.

Inaugural Starkey Duncan Memorial Lecture, University of Chicago, 2013.  
Fellow, American Psychological Association (APA), Division 3 (Experimental Psychology), 2011.  
Regents Award for Faculty Excellence, University of Iowa, 2009.  
Editor-in-Chief, *Behavioral Neuroscience*, 2008-2014.  
President, International Society for Developmental Psychobiology (ISDP), 2007-2008.  
Starch Faculty Fellow, University of Iowa, 2006-2009.  
Fellow, American Psychological Association (APA), Division 6 (Behavioral Neuroscience and Comparative Psychology), 2005.  
Independent Scientist Award (K02), National Institute of Mental Health, 2002-2012.  
Associate Editor, *Behavioral Neuroscience*, 2001-2007.  
Faculty Scholar Award, University of Iowa, 1999-2002.  
American Psychological Association (APA) Distinguished Scientific Award for an Early Career Contribution to Psychology in the area of animal learning and behavior, comparative, 1997.  
FIRST Award (R29), National Institute of Mental Health, 1994-1999.  
Graduate Fellowship, University of Chicago, 1983-1988.

## PUBLICATIONS

### JOURNALS

1. Bergel A, Schmidt JM, Barrillot B, Arthaud S, Averty L, Blumberg MS, Carachet C, Clair A, Froidevaux C, Herrel A, Massot B, Rattenborg NC, Schmidt MH, Tanter M, Ungurean G, Libourel P.-A. A global and fundamental infraslow rhythm in mammals, birds, and lizards reshapes our understanding of the evolution of REM sleep. Submitted.
2. Blumberg MS. The undeniable value of developmental analysis for the science of sleep. *Sleep*, in press.
3. Ahmad M, Kim J, Dwyer B, Sokoloff G, & Blumberg MS. Coincident development and synchronization of sleep-dependent delta in the cortex and medulla. *Current Biology*. 34, 2570-2579.e5, 2024.
4. Richardson A, Sokoloff G, & Blumberg MS. Developmentally unique cerebellar processing prioritizes self- over other-generated movements. *Journal of Neuroscience*, 44: e2345232024, 2024.
5. Glanz RM, Sokoloff G, & Blumberg MS. Neural decoding reveals specialized kinematic tuning after an abrupt cortical transition. *Cell Reports*, 42: 113119, 2023.
6. Blumberg MS & Adolph KE. Infant action and cognition: What's at stake? *Trends in Cognitive Sciences*, 27: 696-698, 2023.
7. Gómez LJ, Dooley JC, & Blumberg MS. Activity in developing prefrontal cortex is shaped by sleep and sensory experience. *eLife*, 12: e82103, 2023.
8. Blumberg MS & Adolph KE. Protracted development of motor cortex constrains rich interpretations of infant cognition. *Trends in Cognitive Sciences*, 27: 233-245, 2023.
9. Blumberg MS, Dooley JC, & Tiriach A. Sleep, plasticity, and sensory neurodevelopment. *Neuron*, 110: 3230-3242, 2022.

10. Del Rio-Bermudez C & Blumberg MS. Sleep as a window on the sensorimotor foundations of the developing hippocampus. *Hippocampus*, 32: 89-97, 2022.
11. Dooley JC, Sokoloff G, & Blumberg MS. Movements during sleep reveal the developmental emergence of a cerebellar-dependent internal model in motor thalamus. *Current Biology*, 31: 5501-5511, 2021.
12. Glanz RM, Dooley JC, Sokoloff G, & Blumberg MS. Sensory coding of limb kinematics in motor cortex across a key developmental transition. *Journal of Neuroscience*, 41: 6905-6918, 2021.
13. Sokoloff G, Dooley JC, Glanz RM, Wen RY, Hickerson MM, Evans LG, Laughlin HM, Apfelbaum KS, & Blumberg MS. Twitches emerge postnatally during quiet sleep in human infants and are synchronized with sleep spindles. *Current Biology*, 31: 3426-3432, 2021.
14. Gómez LJ, Dooley JC, Sokoloff G, & Blumberg MS. Parallel and serial processing in developing primary somatosensory and motor cortex. *Journal of Neuroscience*, 41: 3418-3431, 2021.
15. Dooley JC, Glanz RM, Sokoloff G, & Blumberg MS. Self-generated whisker movements drive state-dependent sensory input to developing barrel cortex. *Current Biology*, 30: 2404-2410, 2020.
16. Sokoloff G, Hickerson MM, Wen, RY, Tobias M, McMurray B, & Blumberg MS. Spatiotemporal organization of myoclonic twitching in sleeping human infants. *Developmental Psychobiology*, 62: 697-710, 2020.
17. Blumberg MS, Lesku JA, Libourel PA, Schmidt MH, Rattenborg NC. What is REM sleep? *Current Biology*, 30: R38-49, 2020.
18. Del Rio-Bermudez C, Kim J, Sokoloff G, & Blumberg MS. Active sleep promotes coherent oscillatory activity in the cortico-hippocampal system of infant rats. *Cerebral Cortex*, 30: 2070-2082, 2020.
19. Blumberg MS, Dooley JC, & Sokoloff G. The developing brain revealed during sleep. *Current Opinion in Physiology*, 15: 14-22, 2020.
20. Dooley JC, Sokoloff G, & Blumberg MS. Behavioral states modulate sensory processing in early development. *Current Sleep Medicine Reports*, 5: 112-117, 2019.
21. Amso D & Blumberg MS. Introduction to special issue marking the 50<sup>th</sup> anniversary of *Developmental Psychobiology*, 61: 315-316, 2019.
22. Blumberg MS. Q&A. *Current Biology*, 29: R5-R6, 2019.
23. Dooley JC, & Blumberg MS. Developmental "awakening" of primary motor cortex to the sensory consequences of movement. *eLife*, 7: e41841, 2018.
24. Mukherjee D, Sokoloff G, & Blumberg MS. Corollary discharge in precerebellar nuclei of sleeping infant rats. *eLife*, 7: e38213, 2018.
25. Del Rio-Bermudez C, & Blumberg MS. Active sleep promotes functional connectivity in developing sensorimotor networks. *BioEssays*, 40: 1700234, 2018.
26. Blumberg MS, & Dooley JC. Phantom limbs, neuroprosthetics, and the developmental origins of embodiment. *Trends in Neurosciences*, 40: 603-612, 2017.
27. Mukherjee D, Yonk A, Sokoloff G, & Blumberg MS. Wakefulness suppresses retinal-wave-related activation of visual cortex. *Journal of Neurophysiology*, 118: 1190-1197, 2017.
28. Del Rio-Bermudez C, Kim J, Sokoloff G, and Blumberg MS. Theta oscillations during active sleep synchronize the developing rubro-hippocampal sensorimotor network. *Current Biology*, 27: 1413-1424, 2017.
29. Blumberg MS, Spencer JP, & Shenk, D. Introduction to the collection "How we develop—Developmental systems and the emergence of complex behaviors." *WIREs Cognitive Science*, 2016. doi: 10.1002/wcs.1413
30. Tiriac A, & Blumberg MS. Gating of refference in the external cuneate nucleus during self-

- generated movements in wake but not sleep. *eLife*, 5:e18749, 2016.
31. Del Rio-Bermudez C, Plumeau AM., Sattler NJ, Sokoloff G, & Blumberg MS. Spontaneous activity and functional connectivity in the developing cerebellorubral system. *Journal of Neurophysiology*, 116: 1316-1327, 2016.
  32. Tiriác A & Blumberg MS. The case of the disappearing spindle burst. *Neural Plasticity*, 2016.
  33. Blumberg MS. Development evolving: The origins and meanings of instinct. *WIREs Cognitive Science*, 8: e1371, 2016. doi: 10.1002/wcs.1371
  34. Blumberg MS & Plumeau AM. A new view of “dream enactment” in REM sleep behavior disorder. *Sleep Medicine Reviews*, 30: 34-42, 2016.
  35. Pospelov A, Yukin AY, Blumberg MS, Puskarjov M, & Kaila, K. Forebrain-independent generation of hyperthermic convulsions in infant rats. *Epilepsia*, 57: e1-e6, 2015.
  36. Sokoloff G, Plumeau AM, Mukherjee D, & Blumberg MS. Twitch-related and rhythmic activation of the developing cerebellar cortex. *Journal of Neurophysiology*, 114: 1746-1756, 2015.
  37. Del Rio-Bermudez C, Sokoloff G, & Blumberg MS. Sensorimotor processing in the newborn rat red nucleus during active sleep. *Journal of Neuroscience*, 35: 8322-8332, 2015.
  38. Blumberg MS, Sokoloff G, Tiriác A, & Del Rio-Bermudez C. A valuable and promising method for recording brain activity in behaving newborn rodents. *Developmental Psychobiology*, 57: 506-517, 2015.
  39. Blumberg MS. The developmental origins of spatial navigation: Are we headed in the right direction? *Trends in Neurosciences*, 38: 67-68, 2015.
  40. Blumberg MS, Coleman CM, Sokoloff G, Weiner JA, Fritsch B, & McMurray B. Development of twitching in sleeping infant mice depends on sensory experience. *Current Biology*, 25: 656-662, 2015.
  41. Blumberg MS. Developing sensorimotor systems in our sleep. *Current Directions in Psychological Science*, 24: 32-37, 2015.
  42. Tiriác A, Sokoloff G, & Blumberg MS. Myoclonic twitching and sleep-dependent plasticity in the developing sensorimotor system. *Current Sleep Medicine Reports*, 1: 74-79, 2015.
  43. Sokoloff G, Uitermarkt B, and Blumberg MS. REM sleep twitches rouse nascent cerebellar circuits: Implications for sensorimotor development. *Developmental Neurobiology*, 75: 1140-1153, 2015.
  44. Tiriác A, Del Rio-Bermudez C, & Blumberg MS. Self-generated movements with “unexpected” sensory consequences. *Current Biology*, 24: 2136-2141, 2014.
  45. Blumberg MS, Gall AJ, and Todd WD. The development of sleep-wake rhythms and the search for elemental circuits in the infant brain. *Behavioral Neuroscience*, 128: 250-263, 2014.
  46. Blumberg MS, Coleman CM, Gerth AI, and McMurray B. Spatiotemporal structure of REM sleep twitching reveals developmental origins of motor synergies. *Current Biology*, 23: 2100-2109, 2013.
  47. Blumberg MS Setting the right tone. *Current Biology*, 23: R834-R836, 2013.
  48. Blumberg MS, Marques HG, and Iida F. Twitching in sensorimotor development from sleeping rats to robots. *Current Biology*, 23: R532-R537, 2013.
  49. Tiriác A, Uitermarkt BD, Fanning AS, Sokoloff G, & Blumberg MS. Rapid whisker movements in sleeping newborn rats. *Current Biology*, 22: 2075-2080, 2012.
  50. Blumberg MS. Homology, correspondence, and continuity across development: The case of sleep. *Developmental Psychobiology*, 55: 92-100, 2012.
  51. Gall AJ, Todd WD, & Blumberg MS. Development of SCN connectivity and the circadian control of arousal: A diminishing role for humoral factors? *PLoS ONE*, 7: e45338, 2012. doi:10.1371/journal.pone.0045338

52. Todd WD, Gall AJ, Weiner JA, & Blumberg MS. Distinct retinohypothalamic innervation patterns predict the developmental emergence of species-typical circadian preference in nocturnal Norway rats and diurnal Nile grass rats. *Journal of Comparative Neurology*, 520: 3277-3292, 2012.
53. Schmidt D, Best J, Blumberg MS. Random graph and stochastic process contributions to network dynamics. *AIMS Proceedings*, 2: 1279-1288, 2011.
54. Karlsson KÆ, Arnardóttir H, Robinson SR, and Blumberg MS. Dynamics of sleep-wake cyclicity across the fetal period in sheep (*Ovis aries*). *Developmental Psychobiology*, 53: 89-95, 2011.
55. Blumberg MS. Beyond dreams: Do sleep-related movements contribute to brain development? *Frontiers in Neurology*, 1: 140, 2010.
56. Marcano-Reik AJ, Prasad T, Weiner JA, & Blumberg MS. An abrupt development shift in callosal modulation of sleep-related spindle bursts coincides with the emergence of excitatory-inhibitory balance and a reduction of somatosensory cortical plasticity. *Behavioral Neuroscience*, 124: 600-611, 2010.
57. Wasserman EA & Blumberg MS. Designing minds: How should we explain the origins of novel behaviors? *American Scientist*, May-June, pp. 183-185, 2010.
58. Seelke AMH & Blumberg MS. Developmental appearance and disappearance of cortical events and oscillations in infant rats. *Brain Research*, 1324: 34-42, 2010.
59. Mohns EJ, & Blumberg MS. Neocortical activation of the hippocampus during sleep in newborn rats. *Journal of Neuroscience*, 30: 3438-3449, 2010.
60. Todd WD, Gibson JL, Shaw CS, and Blumberg MS. Brainstem and hypothalamic regulation of sleep pressure and rebound in newborn rats. *Behavioral Neuroscience*, 124: 69-78, 2010.
61. Wasserman EA & Blumberg MS. Evolution of the monkey crouch (letter to editor). *Science*, 325: 812, 2009.
62. Spencer JP, Samuelson LK, Blumberg MS, McMurray B, Robinson SR, and Tomblin JB. Seeing the world through a third eye: Developmental systems theory looks beyond the nativist-empiricist debate. *Child Development Perspectives*, 3: 103-105, 2009.
63. Spencer JP, Blumberg MS, McMurray B, Robinson SR, Samuelson LK, and Tomblin JB. Short arms and talking eggs: Why we should no longer abide the nativist-empiricist debate. *Child Development Perspectives*, 3: 79-87, 2009.
64. Gall AJ, Joshi B, Best J, Florang VR, Doorn JA, & Blumberg MS. Developmental emergence of power-law wake behavior depends upon the functional integrity of the locus coeruleus. *Sleep*, 32: 920-926, 2009.
65. Blumberg MS. Evolution shapes systems, not just genes (letter to editor). *Nature*, 457: 785 (February 12), 2009.
66. Marcano-Reik AJ, & Blumberg MS. The corpus callosum modulates spindle-burst activity within homotopic regions of somatosensory cortex in newborn rats. *European Journal of Neuroscience*, 28: 1457-1466, 2008.
67. Mohns EJ & Blumberg MS. Synchronous bursts of neuronal activity in the developing hippocampus: Modulation by active sleep and association with emerging gamma and theta rhythms. *Journal of Neuroscience*, 28: 10134-10144, 2008.
68. Gall AJ, Todd WD, Ray B, Coleman CM, & Blumberg MS. The development of day-night differences in sleep and wakefulness in Norway rats and the effect of bilateral enucleation. *Journal of Biological Rhythms*, 23: 232-241, 2008.
69. Seelke AMH & Blumberg MS. The microstructure of active and quiet sleep as cortical delta activity emerges in infant rats. *Sleep*, 31: 691-699, 2008.
70. Mohns EJ, Karlsson KÆ, & Blumberg MS. Developmental emergence of transient and persistent

- hippocampal events and oscillations and their association with infant seizure susceptibility. *European Journal of Neuroscience*, 26: 2719-2730, 2007.
71. Blumberg MS, Karlsson KÆ, & Seelke AMH. Sleep, development, and human health. *Sleep*, 30: 549-550, 2007.
  72. Blumberg MS. Anthropomorphism and evidence (invited commentary). *Comparative Cognition & Behavior Reviews*, 2: 145-146, 2007.
  73. Gall AJ, Poremba A, & Blumberg MS. Brainstem cholinergic modulation of sleep and wakefulness in infant rats. *European Journal of Neuroscience*, 25: 3367-3375, 2007.
  74. Blumberg MS, Coleman C, Johnson, ED, & Shaw C. Developmental divergence of sleep-wake patterns in orexin knockout and wild-type mice. *European Journal of Neuroscience*, 25: 512-518, 2007.
  75. Wasserman EA & Blumberg MS. Designing minds (commentary). *APS Observer*, 19 (10): 25-26, 2006.
  76. Karlsson KÆ, Mohns EJ, Vianna di Prisco G, & Blumberg MS. On the co-occurrence of startles and hippocampal sharp waves in newborn rats. *Hippocampus*, 16: 959-965, 2006.
  77. Mohns EJ, Karlsson KÆ, & Blumberg MS. The preoptic hypothalamus and basal forebrain play opposing roles in the descending modulation of sleep and wakefulness in infant rats. *European Journal of Neuroscience*, 23: 1301-1310, 2006.
  78. Blumberg MS, Seelke AMH, Lowen SB, & Karlsson KÆ. Dynamics of sleep-wake cyclicity in developing rats. *Proceedings of the National Academy of Sciences*, 102: 14860-14864, 2005.
  79. Middlemis-Brown JE, Johnson ED, and Blumberg MS. Separable brainstem and forebrain contributions to ultrasound production in infant rats. *Behavioral Neuroscience*, 119: 1111-1117, 2005.
  80. Kreider JC & Blumberg MS. Geotaxis and beyond: Commentary on Motz and Alberts (2005). *Neurotoxicology and Teratology*, 27: 535-537, 2005.
  81. Seelke AMH, Karlsson KÆ, Gall AJ, & Blumberg MS. Extraocular muscle activity, rapid eye movements, and the development of active and quiet sleep. *European Journal of Neuroscience*, 22: 911-920, 2005.
  82. Karlsson KÆ, Gall AJ, Mohns EJ, Seelke AMH, & Blumberg MS. The neural substrates of infant sleep in rats. *PLoS Biology*, 3: 891-901, 2005.
  83. Blumberg MS, Johnson ED, and Middlemis-Brown JE. Inhibition of ultrasonic vocalizations by beta-adrenoceptor agonists. *Developmental Psychobiology*, 47: 66-76, 2005.
  84. Seelke AMH, & Blumberg MS. Thermal and nutritional modulation of sleep in infant rats. *Behavioral Neuroscience*, 19: 603-611, 2005.
  85. Blumberg MS, Karlsson KÆ, Seelke AMH, & Mohns EJ. The ontogeny of mammalian sleep: A response to Frank and Heller (2003). *Journal of Sleep Research*, 14: 91-101, 2005.
  86. Karlsson KÆ, & Blumberg MS. Active medullary control of atonia in week-old rats. *Neuroscience*, 130: 275-283, 2005.
  87. Blumberg MS, Middlemis-Brown JE, and Johnson ED. Sleep homeostasis in infant rats. *Behavioral Neuroscience*, 118: 1253-1261, 2004.
  88. Seelke AMH, & Blumberg MS. Sniffing during sleep and wakefulness in infant rats. *Behavioral Neuroscience*, 118: 267-273, 2004.
  89. Karlsson KÆ, & Blumberg MS. Temperature-induced reciprocal activation of infant hippocampal field activity. *Journal of Neurophysiology*, 91: 583-588, 2004.
  90. Karlsson KÆ, Kreider JC, & Blumberg MS. Hypothalamic contribution to sleep-wake cycle development. *Neuroscience*, 123: 575-582, 2004.

91. Blumberg MS, & Sokoloff G. Hard heads and open minds: A reply to Panksepp. *Psychological Review*, 110: 389-394, 2003.
92. Karlsson KÆ, & Blumberg MS. Hippocampal theta in the newborn rat is revealed under conditions that promote REM sleep. *Journal of Neuroscience*, 23: 1114-1118, 2003.
93. Karlsson KÆ & Blumberg MS. The union of the state: Myoclonic twitching is coupled with nuchal muscle atonia in infant rats. *Behavioral Neuroscience*, 116: 912-917, 2002.
94. Sokoloff G & Blumberg MS. Contributions of endothermy to huddling behavior in infant Norway rats (*Rattus norvegicus*) and Syrian golden hamsters (*Mesocricetus auratus*). *Journal of Comparative Psychology*, 116: 240-246, 2002.
95. Sokoloff G, Blumberg MS, Boline EA, Johnson ED, & Streeper NM. Thermoregulatory behavior in infant Norway rats (*Rattus norvegicus*) and Syrian golden hamsters (*Mesocricetus auratus*): Arousal, orientation, and locomotion. *Journal of Comparative Psychology*, 116: 228-239, 2002.
96. Blumberg MS, Lewis SJ, & Sokoloff G. Incubation temperature modulates post-hatching thermoregulatory behavior in the Madagascar ground gecko, *Paroedura pictus*. *Journal of Experimental Biology*, 205: 2777-2784, 2002.
97. Blumberg MS, Sokoloff G, Kirby RF, Knoot TG, & Lewis SJ. Effects of antihypertensive drugs on ultrasound production and cardiovascular responses in 15-day-old rats. *Behavioural Brain Research*. 131: 37-46, 2002.
98. Blumberg MS, Knoot TG, & Kirby RF. Neural and hormonal control of arterial pressure during thermal challenge in unanesthetized infant rats. *American Journal of Physiology*. 281: R1514-R1521, 2001.
99. Sokoloff G & Blumberg MS. Competition and cooperation among huddling infant rats. *Developmental Psychobiology*, 39: 65-75, 2001.
100. Blumberg MS & Sokoloff G. Do infant rats cry? *Psychological Review*, 108: 83-95, 2001.
101. Kreider JC & Blumberg MS. Mesopontine contribution to the expression of active "twitch" sleep in decerebrate week-old rats. *Brain Research*, 872: 149-159, 2000.
102. Sokoloff G, Blumberg MS, & Adams MM. A comparative analysis of huddling in infant Norway rats and Syrian golden hamsters: Does endothermy modulate behavior? *Behavioral Neuroscience*, 114: 585-593, 2000.
103. Blumberg MS, Kreber L, Sokoloff G, Kent, K. Cardiovascular mediation of clonidine-induced ultrasound production in infant rats. *Behavioral Neuroscience*: 114: 602-608, 2000.
104. Robinson SR, Blumberg MS, Lane M, & Kreber L. Spontaneous motor activity in fetal and infant rats is organized into discrete multilimb bouts. *Behavioral Neuroscience*: 114: 328-336, 2000.
105. Blumberg MS, Sokoloff G, & Kent KJ. A developmental analysis of clonidine's effects on cardiac rate and ultrasound production in infant rats. *Developmental Psychobiology*: 36: 186-193, 2000.
106. Blumberg MS & Sokoloff G, Kirby RF, & Kent KJ. Distress vocalizations in infants: What's all the fuss about? *Psychological Science*, 11: 78-81, 2000.
107. Blumberg MS, Sokoloff G, & Kent KJ. Cardiovascular concomitants of ultrasound production during cold exposure in infant rats. *Behavioral Neuroscience*, 113: 1274-1282, 1999.
108. Kirby RF, Sokoloff G, Perdomo E, & Blumberg MS. Thermoregulatory and cardiac responses of infant spontaneously hypertensive and Wistar-Kyoto rats to cold exposure. *Hypertension*, 33: 1465-1469, 1999.
109. Kreider JC & Blumberg MS. Geotaxis in two-week-old Norway rats (*Rattus norvegicus*): A reevaluation. *Developmental Psychobiology*, 35: 35-42, 1999.
110. Blumberg MS, Deaver K, & Kirby RF. Leptin disinhibits BAT thermogenesis in infants after maternal separation. *American Journal of Physiology*, 276: R606-R610, 1999.

111. Sokoloff G, & Blumberg MS. Active sleep in cold-exposed infant Norway rats and Syrian golden hamsters: The role of brown adipose tissue thermogenesis. *Behavioral Neuroscience*, 112: 695-706, 1998.
112. Sokoloff G, Kirby RF, & Blumberg MS. Further evidence that BAT thermogenesis modulates cardiac rate in infant rats. *American Journal of Physiology*, 274: R1712-1717, 1998.
113. Blumberg MS, & Sokoloff G. Thermoregulatory competence and behavioral expression in the young of altricial species – Revisited. *Developmental Psychobiology*, 33: 107-123, 1998.
114. Kirby RF & Blumberg MS. Maintenance of arterial pressure in infant rats during moderate and extreme thermal challenge. *Developmental Psychobiology*, 32: 169-176, 1998.
115. Blumberg MS. Ontogeny of cardiac rate regulation and brown fat thermogenesis in golden hamsters (*Mesocricetus auratus*). *Journal of Comparative Physiology B*, 167: 552-557, 1997.
116. Blumberg MS, & Sokoloff G. Dynamics of brown fat thermogenesis in week-old rats: Evidence of relative stability during moderate cold exposure. *Physiological Zoology*, 70: 324-330, 1997.
117. Blumberg MS, Sokoloff G, & Kirby RF. Brown fat thermogenesis and cardiac rate regulation during cold challenge in infant rats *American Journal of Physiology*, 272: R1308-R1313, 1997.
118. Sokoloff G, & Blumberg MS. Thermogenic, respiratory, and ultrasonic responses of week-old rats across the transition from moderate to extreme cold exposure. *Developmental Psychobiology*, 30: 181-194, 1997.
119. Blumberg MS & Wasserman EA. Animals have minds? *American Psychologist*, 51: 59-60, 1996.
120. Blumberg MS & Stolba MA. Thermogenesis, myoclonic twitching, and ultrasonic vocalization in neonatal rats during moderate and extreme cold exposure. *Behavioral Neuroscience*, 110: 305-314, 1996.
121. Blumberg MS & Lucas DE. A developmental and component analysis of active sleep. *Developmental Psychobiology*, 29: 1-22, 1996.
122. Blumberg MS, Schalk SL, & Sokoloff G. Pontine and basal forebrain transections disinhibit brown fat thermogenesis in neonatal rats. *Brain Research*, 699: 214-220, 1995.
123. Gagliardi JL, Kirkpatrick-Steger KK, Thomas J, Allen GJ, & Blumberg MS. Seeing and knowing: Knowledge attribution versus stimulus control in adult humans (*Homo sapiens*). *Journal of Comparative Psychology*, 109: 107-114, 1995.
124. Blumberg MS & Wasserman EA. Animal mind and the argument from design. *American Psychologist*, 50: 133-144, 1995.
125. Blumberg MS & Lucas DE. Dual mechanisms of twitching during sleep in neonatal rats. *Behavioral Neuroscience*, 108: 1196-1202, 1994.
126. Blumberg MS, Efimova IV, & Alberts JR. Thermogenesis during ultrasonic vocalization by rat pups isolated in a warm environment: A thermographic analysis. *Developmental Psychobiology*, 25: 497-510, 1992.
127. Blumberg MS, Mennella JA, McClintock MK, & Moltz H. Facultative sex ratio adjustment in Norway rats: Litters born asynchronously are female-biased. *Behavioral Ecology and Sociobiology*, 31: 401-408, 1992.
128. Blumberg MS. Rodent ultrasonic short calls: Locomotion, biomechanics, and communication. *Journal of Comparative Psychology*, 106: 360-365, 1992.
129. Blumberg MS & Alberts JR. Functions and effects in animal communication: Reactions to Guilford & Dawkins. *Animal Behaviour*, 44: 382-383, 1992.
130. Blumberg MS, Efimova IV, & Alberts JR. Ultrasonic vocalizations by rat pups: The primary importance of ambient temperature and the thermal significance of contact comfort. *Developmental Psychobiology*, 25: 229-250, 1992.

131. Blumberg MS & Alberts JR. Both hypoxia and milk deprivation diminish metabolic heat production and ultrasound emission by rat pups during cold exposure. *Behavioral Neuroscience*, 105: 1030-1037, 1991.
132. Blumberg MS. Prostaglandin E<sub>2</sub> accelerates sexual behavior in male rats. *Physiology and Behavior*, 50: 95-99, 1991.
133. Blumberg, MS & Alberts JR. On the significance of similarities between ultrasonic vocalizations of infant and adult rats. *Neuroscience and Biobehavioral Reviews*, 15: 383-390, 1991.
134. Blumberg MS, & Alberts JR. Ultrasonic vocalizations by rat pups in the cold: An acoustic by-product of laryngeal braking? *Behavioral Neuroscience*, 104: 808-817, 1990.
135. Mennella JA, Blumberg MS, McClintock MK, & Moltz H. Inter-litter competition and communal nursing among Norway rats: advantages of birth synchrony. *Behavioral Ecology and Sociobiology*, 27: 183-190, 1990.
136. Blumberg MS. An allometric analysis of hippocampal theta: The significance of brain metabolic rate. *Brain, Behavior and Evolution*, 34: 351-356, 1989.
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140. Wingfield A, Milstein G, & Blumberg MS. Cerebral specialization and hemispheric performance asymmetries in narrative memory. *Perceptual and Motor Skills*, 59: 39-42, 1984.

## CHAPTERS

141. Blumberg MS & Frank MG. Fundamental features of sleep in early development. Invited chapter for *Fundamentals of Sleep and Circadian Science*, New York: Oxford University Press. In press.
142. Blumberg MS, Sokoloff G, & Gómez LJ. Ontogeny of sleep. In C. Kushida (Ed.), *Encyclopedia of Sleep and Circadian Rhythms* (Second Edition). Oxford: Elsevier, 2023, pp. 31-39.
143. Sokoloff G & Blumberg MS. Recording extracellular activity in the developing cerebellum of behaving rats. In R. V. Sillitoe (Ed.), *Extracellular Recording Approaches* (Neuromethods, Vol. 134). New York, NY: Springer, 2018, pp. 225-247.
144. Blumberg MS & Rattenborg NC. Decomposing the evolution of sleep: Comparative and developmental approaches. In J. H. Kaas (Ed.), *Evolution of Nervous Systems 2e, Volume 3*, Oxford: Elsevier, 2017, pp. 523-545.
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146. Blumberg MS. Ontogeny of sleep. In C. Kushida (Ed.), *Encyclopedia of Sleep*. Waltham, MA: Academic Press, 2013, pp. 32-37.
147. Blumberg MS. Phenomenology and function of myoclonic twitching in developing rats. In: Rapid eye movement sleep: Regulation and function. In B. N. Mallick, S. R. Pandi-Perumal, R. W. McCarley, and A. Morrison (Eds.). Cambridge: Cambridge University Press, 2011, pp. 130-139.
148. Marcano-Reik AJ & Blumberg MS. Neuroscience. In: *The Corsini Encyclopedia of Psychology and Behavioral Science*. Hoboken, NJ: John Wiley, 2010, pp. 1086-1088.
149. Blumberg MS, & Seelke AMH. The form and function of infant sleep: From muscle to neocortex. In M. S. Blumberg, J. H. Freeman, and S. R. Robinson (Eds.), *The Oxford Handbook of*

- Developmental Behavioral Neuroscience*. New York: Oxford University Press, 2009, pp. 391-423.
150. Blumberg MS, & Freeman JH, and Robinson SR. Introduction: A new frontier for developmental behavioral neuroscience. In M. S. Blumberg, J. H. Freeman, and S. R. Robinson (Eds.), *The Oxford Handbook of Developmental Behavioral Neuroscience*. New York: Oxford University Press, 2009, pp. 1-4.
  151. Mohns EJ, & Blumberg MS. Hippocampal EEG in the neonatal rat: Development of normal and pathological activity. In P. A. Schwartzkroin (Ed.), *Encyclopedia of Basic Epilepsy Research*, Vol. 2. Oxford: Academic Press, 2009, pp. 1061-1065.
  152. Sokoloff G, & Blumberg MS. Vocalization. In B. Kolb and I. Q. Whishaw (Eds.), *The Behaviour of the Laboratory Rat: A Handbook With Tests*. Oxford: Oxford University Press, 2004, pp. 371-380.
  153. Blumberg MS. Behavioral thermoregulation. In M. Bekoff (Ed.), *Encyclopedia of Animal Behavior*. Westport, CT: Greenwood Press, 2004, pp. 104-107.
  154. Blumberg MS. The developmental context of thermal homeostasis. In E. M. Blass (Ed.), *The Handbook of Behavioral Neurobiology, Volume 13, Developmental Psychobiology*. New York: Springer, 2001, pp. 199-228.
  155. Blumberg MS, & Alberts JR. Incidental emissions, fortuitous effects, and the origins of communication. In D. H. Owings, M. D. Beecher, and N. S. Thompson (Eds.), *Perspectives in Ethology, Volume 12*. New York, Plenum Press, 1997, pp. 225-249.

#### BOOKS AND EDITED COLLECTIONS

1. Amso D & Blumberg MS. (eds). Special issue to mark the 50<sup>th</sup> anniversary of *Developmental Psychobiology*, Volume 61, Issue 3, 2019.
2. Blumberg MS, Spencer JP, & Shenk D. (eds.) *How we develop—Developmental systems and the emergence of complex behaviors*. *WIREs Cognitive Science*, 2016.
3. Blumberg MS, Freeman JH, & Robinson SR (eds.) *The Oxford Handbook of Developmental Behavioral Neuroscience*. New York: Oxford University Press, 2009.

Reviewed in Doody's *Health Sciences*.

4. Blumberg MS. *Freaks of Nature: What Anomalies Tell Us about Development and Evolution*. New York: Oxford University Press, 2009.

Reviewed in *Science*, *Nature*, *Times Literary Supplement*, *The Scientist*, *Chronicle of Higher Education*, *Boldtype*, *New Scientist*, *Science News*, *io9*, *Discover*, *Daily Telegraph*, *Financial Times*, *Neurotopia (blog)*, *Evolving Thoughts (blog)*, *The Guardian*, *Choice*, *Skeptical Inquirer*, *Doody's Health Sciences Review*, *Jewish Exponent (Philadelphia)*, *Journal of Clinical Investigation*, *Lab Times*, *Reports of the National Center for Science Education*.

Korean Translation: Alma, Inc.

5. Blumberg MS. *Basic Instinct: The Genesis of Behavior*. New York: Thunder's Mouth Press (now Basic Books), 2005.

Reviewed in *Publisher's Weekly*, *Science News*, *Developmental Psychobiology*, *The Quarterly Review of Biology*, *Scientific American Mind*, *AAAS Science Books and Films*, *Journal of Behavioral Finance*.

Reprinting of Chapter 2, "Designer Thinking," in *Annual Editions, Physical Anthropology 07/08*, McGraw-Hill; Japanese Translation: Hayakawa Publishing, Inc.; Korean Translation: Ludens Book

6. Blumberg MS. *Body Heat: Temperature and Life on Earth*. Cambridge: Harvard University Press, 2002.

Reviewed in *Publisher's Weekly*, *The Los Angeles Times*, *Times Literary Supplement*, *The Sunday Telegraph*, *New Scientist*, *Natural History*, *Science News*, *American Scientist*, *American Scholar*, *Netsurfer Science*, *JAMA*, *Choice*, *2Think.org*, *Bulletin of the American Meteorological Society*, *Developmental Psychobiology*, *M2 Best Books*, *Northeastern Naturalist*, *The Physiologist*, *Canadian Literature*, *The Quarterly Review of Biology*, *Journal of Mammalogy*.

## PERIODICALS

1. Spencer JP, Blumberg MS, & Shenk, D. Moving beyond nature-nurture: a problem of science or communication? *IEEE Newsletter of the Technical Committee on Cognitive and Developmental Systems*. 13: 4-5, 2016. (A dialogue with 12 responses and a reply.)
2. Spencer JP, Blumberg MS, & Shenk D. Wanted: A new language to move beyond "Nature/Nurture." *IEEE Newsletter of the Technical Committee on Cognitive and Developmental Systems*. 13: 18-19, 2016.
3. Blumberg MS, Tiriak A, & Del Rio-Bermudez C. Twitching in your sleep is more about mapping the brain than chasing rabbits. *The Conversation*, October 3, 2014.
4. Blumberg MS. The animal zealotry that destroyed our lab. *The Washington Post*, Sunday Outlook, July 17, 2005.
5. Blumberg MS A few degrees of separation. *The Sunday Times* (London), May 26, 2002.

## BOOK REVIEWS

Blumberg MS. Review of "Temperature regulation in laboratory rodents," by C. J. Gordon. *Animal Behaviour*, 48: 996-997, 1994.

## BLOGS

Blumberg MS. Challenging the *New York Times*: Is FOXP2 really a "speech gene"? *The Atlantic.com*, November 19, 2009.

Blumberg MS. A brave new world in China? *The Atlantic.com*, August 8, 2009.

Blumberg MS. Bridgeless gaps. OUP blog, November 25, 2008.

## GRANTS

### **Current and Pending**

Pending: Principal Investigator, National Institute of Child Health and Human Development (NICHD), entitled "Development and synchronization of sleep-dependent cortical and brainstem rhythms." 2025-2030. Total costs over 5 years: \$3,633,766.

Principal Investigator, National Institute of Child Health and Human Development (NICHD), entitled "Sleep-related behavior and cortical activity in premature human infants as predictors of developmental outcomes" (R01-HD104616). 2022-2027. Total costs over 5 years: \$3,096,972.

Co-Principal Investigator, Aaron Boes and Thomas Nickl-Jockschat (Co-PIs), Iowa Neuroscience Institute Research Programs of Excellence grant, entitled "Neuroplasticity in the human brain: From molecules to circuits to systems." 2022-2025. Total costs over 3 years: \$600,000.

Principal Investigator, Hawk-IDDRC Pilot grant, entitled "Tracking the developmental trajectory of a newly discovered sleep-related behavior in human infants." 2022-2024. Total costs: \$20,000.

Co-Investigator, Lane Strathearn (PI), National Institute of Child Health and Human Development

(NICHD), entitled "University of Iowa Hawkeye Intellectual and Developmental Disabilities Research Center (Hawk-IDDRC)" (HD103556). 2021-2026. Total costs over 5 years: \$6,159,147.

Principal Investigator, MERIT Award (R37), National Institute of Child Health and Human Development (NICHD), entitled "State-dependent sensory processing across early development" (R37-HD081168). 2019-2024. Total costs over second 5-year period: \$2,681,885.

Diversity Supplement for Lex Gómez, 2018-2020. Total costs: \$139,047.

## Completed

Principal Investigator, Simons Foundation SFARI Pilot Award (#569466), entitled "Neurophysiological impact of abnormal infant sleep in 16p11.2 deletion mice." 2018-2020 (no-cost extension through 2022). Total costs over 2 years: \$330,000.

Principal Investigator, R21, National Institute of Child Health and Human Development (NICHD), entitled "Cortical activity and phasic REM sleep in human newborns" (HD095153). 2018-2020 (no-cost extension through 2021). Total costs over 2 years: \$385,250.

Principal Investigator, MERIT Award (R37; initial period), National Institute of Child Health and Human Development (NICHD), entitled "State-dependent sensory processing across early development" (HD081168). 2014-2019. Total costs over 5 years: \$2,351,433.

Principal Investigator, Simons Foundation SFARI Explorer Award (#499372), entitled "Neurodevelopmental assessment of motor behavior in a mouse model of autism." 2017-2018. Total costs over 1 year: \$70,000. (No-cost extension through August 31, 2018.)

Principal Investigator, Bill & Melinda Gates Foundation Grand Challenges Exploration Round 14 grant (OPP1129031), entitled, "Using REM sleep twitches to detect and assess neurodevelopmental disorders." 2015-2017. Total costs over 2 years: \$100,000.

Principal Investigator, R21, National Institute of Nervous Diseases and Stroke (NINDS), entitled "Sleep, proprioception, and forebrain activity in infant mutant mice" (NS073869). 2012-2013. Total costs over 2 years: \$394,165.

Principal Investigator, RO1, National Institute of Child Health and Human Development (NICHD), entitled "Behavioral state development in infants" (HD063071). 2010-2015. Total costs over 5 years: \$1,459,873. (No-cost extension through June 2016.)

Principal Investigator, KO2, Independent Scientist Award, National Institute of Mental Health (NIMH), entitled "Homeostasis and behavioral state organization in infants" (MH066424). 2007-2012. Total costs over 5 years: \$630,340.

Principal Investigator, RO1, National Institute of Mental Health (NIMH), entitled "Behavioral state development in infants" (MH050701). 2004-2009. Total costs over 5 years: \$1,279,990.

Principal Investigator, KO2, Independent Scientist Award, National Institute of Mental Health (NIMH), entitled "Homeostasis and behavioral state organization in infants" (MH066424). 2002-2007. Total costs over 5 years: \$554,960.

Principal Investigator, RO1, National Institute of Mental Health (NIMH), entitled "Endothermy and behavioral thermoregulation in infants" (MH050701). 2000-2004. Total costs over 4 years: \$824,626.

Principal Investigator, RO1, National Institute of Child Health and Human Development (NICHD), entitled "Cardiovascular concomitants of ultrasonic vocalizations" (HD038708). 2000-2003. Total costs over 3 years: \$595,350. (Minority supplement, 2001-2003, total costs over two years: \$27,928.)

Faculty Scholar Award, 1999-2002, includes a 50% reduction in teaching and service for three consecutive years, as well as modest (\$2,000-\$4,500) support for research from the Office of the Provost.

Co-Principal Investigator, Gonzalo Viana Di Prisco (PI), Epilepsy Foundation Partnership for Pediatric Epilepsy Research, "Brainstem contributions to infantile seizures and spasms in rodents," 2005, total costs: \$99,886.

Principal Investigator, FIRST Award (R29), National Institute of Mental Health (NIMH), entitled "Development of autonomic and behavioral thermoregulation" (MH050701). 1994-1999. Total direct costs over 5 years: \$349,924. (Minority supplement, 1997-1999, total direct costs over two years: \$36,187.)

Co-Investigator, Jeffrey Alberts (PI), RO1, National Institute of Child Health and Human Development (NICHD), entitled "Thermal imaging of perinatal behavior and physiology," 1991-1994. Total direct costs over 3 years: \$133,956.

## **INVITED TALKS AND CONFERENCE PRESENTATIONS**

### **COLLOQUIA AND SYMPOSIA**

Eliot Hearst Lecturer, title TBD, Department of Psychological and Brain Sciences, Indiana University, Bloomington, spring 2025.

Invited speaker, title TBD, 3<sup>rd</sup> meeting on Spontaneous Activity in Brain Development (SPONT), Alicante, Spain, Nov 4-6, 2024.

Invited speaker, "Developing the sensorimotor system in our sleep: Implications for typical and atypical development," Fetal, Infant, and Toddler Neuroimaging Group (FIT'NG) meeting, Baltimore, September 25-26, 2024.

Invited speaker, "Development needs sleep" (virtual), Donders Institute, Radboud University Medical Center, The Netherlands, March 15, 2024.

Invited speaker, "Sleep-dependent development of the cerebellar system," Cerebellar Seminar organized by Reza Shadmehr (virtual), Johns Hopkins University School of Medicine, March 12, 2024.

Invited speaker, "The complexities of cortical development as revealed through the lens of sleep." Bern Sleep Symposium, Bern, Switzerland, November 3, 2023.

Invited speaker, "Development needs sleep, as does pediatrics," Hawk-IDDRC seminar, University of Iowa, Iowa City, October 13, 2023.

Opening keynote address, "Development needs sleep," Neonatal Sleep Talks (NeST) 2023, Clare College, University of Cambridge, UK, August 31-September 1, 2023.

Invited speaker, "Sleep-dependent activation of the developing cerebellar system," Gordon Research Conference on the Cerebellum, Lewiston, Maine, August 6-11, 2023.

Invited speaker, "Writing science for a general audience," Writing in Neuroscience (WIN) Program, University of Iowa, March 7, 2023.

Inaugural Thomas F. Anders Seminar, "Development needs sleep and sleep needs development," Center for Sleep and Circadian Rhythms in Child and Adolescent Mental Health, Alpert Medical School of Brown University, September 20, 2022.

Invited speaker, "Development needs sleep and sleep needs development," Sleep Research Society, Association of Professional Sleep Societies, Charlotte, North Carolina, June 7, 2022.

Keynote speaker, "How the brain organizes itself during sleep," 2<sup>nd</sup> Annual Neonatal Sleep Symposium, December 2-3, 2021. (Virtual)

Invited colloquium, "Developing the sensorimotor system in our sleep: Implications for typical and atypical development," Department of Psychology, Virginia Tech University, December 2, 2021. (Virtual)

Invited speaker, "Developing the sensorimotor system in our sleep," Nu Rho Psi chapter at Georgia State University, October 22, 2021. (Virtual)

Plenary speaker, "Developing the sensorimotor system in our sleep: Implications for typical and atypical human development," UMC Utrecht Brain Center, June 4, 2021. (Virtual)

Invited speaker, "Developing the sensorimotor system in our sleep," Institute of Mediterranean Neurobiology (INMED), Marseille, France, May 31, 2021. (Virtual)

Invited speaker, "Sleep as a critical context for typical and atypical neurodevelopment," SFARI and SIDB Workshop: Advances and opportunities for rats as experimental model systems for autism, Simons Foundation, New York, New York, April 29, 2021. (Virtual)

Invited speaker, "Figuratively speaking: How to use figures to better communicate your science," Writing in Neuroscience (WIN) Program, University of Iowa, February 2, 2021. (Virtual)

Invited symposium speaker, "Sleep-specific characteristics supporting development, learning, memory, and cognition across ages and species," Society for Neuroscience Global Connectome: A Virtual Event, January 11-13, 2021. (Virtual)

Invited lecturer, "Sleep, clocks, and brain development," for Academy of Sleep and Consciousness, University of Bern and other partner universities, December 2020. (Virtual)

Invited speaker, "Developing the sensorimotor system in our sleep: Implications for typical and atypical human development," University of Genoa, Italy, November 24, 2020. (Virtual)

Brown bag presentation, "Writing cover letters for journal submission: When, why, and how?" Department of Psychological and Brain Sciences, University of Iowa, November 11, 2020. (Virtual)

Participant in a virtual roundtable, entitled "What is REM sleep? Evolutionary and developmental perspectives," 25<sup>th</sup> Congress of the European Sleep Research Society, September 22, 2020. (Virtual)

Invited colloquium, "Active sleep promotes functional connectivity and sensorimotor integration throughout the developing nervous system," Max Planck Institute for Ornithology, Seewiesen, Germany, March 5, 2020. (Cancelled due to coronavirus)

Invited speaker, "Sleep-dependent activation of the developing cerebellar system," in minisymposium entitled "Functional maturation of cerebello-cerebral interactions," Society for Neuroscience, Chicago, Illinois, October 20, 2019.

Invited colloquium, "Active sleep promotes functional connectivity and sensorimotor integration throughout the developing nervous system," Huck Institutes of the Life Sciences, Penn State University, October 2, 2019.

Colloquium, "From innateness to epigenesis: An introduction to developmental systems," DeLTA Center, University of Iowa, September 27, 2019.

Invited speaker, "Active sleep promotes functional connectivity among cortical and subcortical structures in the infant brain," for symposium entitled Sleep, Memory and the Brain During Development, Society for Research in Child Development, Baltimore, Maryland, March 21-23,

2019.

Invited speaker, "Sleep promotes activity-dependent plasticity in the developing motor cortex," Annual Meeting in Computational and Systems Neuroscience (Cosyne), Cascais, Portugal, March 4-5, 2019.

Invited speaker, "Active sleep promotes functional connectivity and sensorimotor integration throughout the developing nervous system," Advances in Sleep & Circadian Science, Clearwater Beach, Florida, February 1-4, 2019.

Invited address, "Freaks for geeks," Annual Meeting of the Pavlovian Society, Iowa City, Iowa, October 6, 2018.

Invited colloquium, Department of Integrative Physiology, University of Colorado, Boulder, Colorado, October 1, 2018.

Keynote speaker, "Myoclonic twitching during REM sleep: A new perspective on an abundant but overlooked behavior of early infancy," International Pediatric Sleep Association, Paris, France, April 28-29, 2018.

Invited speaker, "Developing the sensorimotor system in our sleep: Implications for typical and atypical human development," Sleep and Performance Research Center, Washington State University, Spokane, Washington, February 12, 2018.

Colloquium, "Developing the sensorimotor system in our sleep: Implications for typical and atypical human development," Department of Internal Medicine, Division of Pulmonary, Critical Care & Occupational Medicine, University of Iowa Carver College of Medicine, February 9, 2018.

Invited speaker in symposium entitled "Sleep ontogeny across phylogeny: Examining the role of sleep during development using model systems," Sleep Research Society, Boston, Massachusetts, June 6, 2017.

Co-chair of session entitled "The interplay between sleep and development: Structure-function relations in early brain development," Sleep Research Society, Boston, Massachusetts, June 6, 2017.

Colloquium, "Developing the sensorimotor system in our sleep: Implications for typical and atypical human development," Department of Pediatrics, University of Iowa Carver College of Medicine, April 10, 2017.

Colloquium, "Development evolving: From innateness to epigenesis," DeLTA Center, University of Iowa, September 9, 2016.

Chair of symposium entitled "Emerging structure-function relations in early brain development," International Conference on Infant Studies (ICIS), New Orleans, Louisiana, May 26-28, 2016.

Invited colloquium, "Developing the sensorimotor system in our sleep," Center for Sleep and Circadian Neurobiology, Perelman School of Medicine, University of Pennsylvania, February 18, 2016.

Invited colloquium, "Developing the sensorimotor system in our sleep," Department of Physiology, Pharmacology, & Neuroscience, City College of New York (CCNY), December 14, 2015.

Invited speaker, "A new view of 'dream enactment' in REM sleep behavior disorder," International REM Sleep Behavior Disorder Study Group Meeting, Fort Lauderdale, Florida, December 4-6, 2015.

Invited colloquium, "Developing the sensorimotor system in our sleep," Department of Molecular, Cellular, and Developmental Biology, University of Michigan, Ann Arbor, November 13, 2015.

Invited colloquium, "Developing the sensorimotor system in our sleep," Department of Neuroscience

and Physiology, New York University Medical Center, New York, November 10, 2015.

Invited speaker, "Developing the sensorimotor system in our sleep," NeuroDevNet Brain Development Conference, Ottawa, Canada, September 20, 2015.

Invited colloquium, "Developing the sensorimotor system in our sleep," Department of Psychology, New York University, New York, September 17, 2015.

Invited speaker, "Developing the sensorimotor system in our sleep," The Barcelona Cognition, Brain, and Technology Summer School, Barcelona, Spain, August 31-September 4, 2015.

Harley Hotchkiss Memorial Lecturer, "Developing the sensorimotor system in our sleep," Department of Neuroscience and the Canadian Centre for Behavioural Neuroscience, University of Lethbridge, Canada, April 9, 2015.

Invited colloquium, "Developing the sensorimotor system in our sleep," Department of Psychology, Ohio State University, Columbus, Ohio, March 26, 2015.

Brown bag talk, "Developing the sensorimotor system in our sleep," Department of Psychology, University of Iowa, February 18, 2015.

Invited colloquium, "Beyond dreams: Developing the sensorimotor system in our sleep," Department of Psychological and Brain Sciences, University of Massachusetts, Amherst, February 4, 2015.

Invited colloquium, "Development evolving: From innateness to epigenesis," Center for Studies in Behavioral Neurobiology, Concordia University, Montreal, Canada, January 30, 2015.

Invited colloquium, "Mapping the sensorimotor system in our sleep," Center for Studies in Behavioral Neurobiology, Concordia University, Montreal, Canada, January 29, 2015.

Invited colloquium, "Mapping the sensorimotor system in our sleep," University of Lyon, Lyon, France, November 24, 2014.

Plenary speaker, French Sleep Research and Medicine Society, Lille, France, November 21, 2014.

Invited speaker, "Developing the sensorimotor system in our sleep," NIH Sleep and Neurodevelopment Symposium, Bethesda, Maryland, October 8, 2014.

Symposium participant, "Developing the sensorimotor system in our sleep," 22<sup>nd</sup> Congress of the European Sleep Research Society, Tallinn, Estonia, September 16-20, 2014.

Symposium participant, "REM sleep without atonia and dream enactment: The view from early infancy," Symposium entitled "Clinical and Basic Science Perspectives on Mechanisms of REM Sleep Behavior Disorder." Annual meeting of the Associated Professional Sleep Societies, Minneapolis, Minnesota, June 1, 2014.

Symposium participant, "Developing sensorimotor memories in our sleep," Symposium entitled "Ground-breaking Theories on Sleep Regulation and Function." Annual meeting of the Associated Professional Sleep Societies, Minneapolis, Minnesota, June 1, 2014.

Keynote speaker, Animal Behavior Conference, Center for the Integrative Study of Animal Behavior (CISAB), Indiana University, Bloomington, Indiana, April 24-26, 2014.

Invited speaker, "Developing sensorimotor memories in our sleep," Gordon Research Conference on Sleep Regulation and Function, Galveston, Texas, March 16-21, 2014.

Invited colloquium, "Development evolving: From innateness to epigenesis," Department of Psychology, State University of New York, New Paltz, New York, December 2, 2013.

Invited speaker, "Beyond dreams: Developing sensorimotor memories in our sleep," Helmut S. Schmidt Memorial Keynote Symposium: Sleep Medicine, Ohio Sleep Medicine Institute, Columbus,

Ohio, November 16, 2013.

Keynote address, "On the origins of complex behaviors: From innateness to epigenesis," in conference entitled "Hormonal Control of Circuits for Complex Behaviors," Janelia Farm Research Campus, Howard Hughes Medical Institute, Ashburn, Virginia, October 27-30, 2013.

Invited speaker, "Developing sensorimotor memories in our sleep," Department of Neurosurgery, University of Iowa Hospitals & Clinics, Iowa City, July 12, 2013.

Invited colloquium, Distinguished Speaker Series, "Beyond dreams: Developing sensorimotor memories in our sleep," Department of Psychology, UC Davis, Davis, California, May 23, 2013.

Inaugural Starkey Duncan Memorial Lecture, "Beyond dreams: Developing sensorimotor memories in our sleep," Department of Psychology, The University of Chicago, May 2, 2013.

Invited speaker, Sleep Disorders Clinic, Department of Neurology, University of Iowa Hospitals & Clinics, Iowa City, April 19, 2013.

Invited colloquium, "Developing sensorimotor memories in our sleep," Department of Informatics, University of Zurich, Zurich, Switzerland, December 6, 2012.

Invited colloquium, "Development evolving: From innateness to epigenesis," Department of Psychology, Princeton University, November 30, 2012.

Grand Rounds, "Beyond dreams: How sleep-related movements contribute to sensorimotor development and recovery of function," Department of Neurology, University of Iowa Hospitals & Clinics, Iowa City, November 13, 2012.

Invited colloquium, "Developing sensorimotor memories in our sleep," Department of Psychology, University of Wisconsin, Madison, November 1, 2012.

Invited colloquium, "Development evolving: From innateness to epigenesis," Department of Psychology, Rutgers University, Newark, New Jersey, September 21, 2012.

Invited colloquium, "Developing sensorimotor memories in our sleep," Center for Molecular and Behavioral Neuroscience, Rutgers University, Newark, New Jersey, September 20, 2012.

Symposium speaker, "Motor activity during sleep in infants activates cortical and hippocampal circuits: Relations to sensorimotor integration and plasticity," for symposium entitled "Early cortical activity patterns in rodents and humans: From basics to clinic," 8<sup>th</sup> FENS Forum of Neuroscience, Barcelona, Spain, July 14-18, 2012.

Invited speaker, "Development evolving: From innateness to epigenesis," International Conference on Infant Studies, Minneapolis, Minnesota, June 2012.

Invited workshop, "Designer thinking and developmental systems," University of Verona, Verona, Italy, April 28, 2012.

Invited colloquium, "Beyond dreams: How twitches during active sleep contribute to sensorimotor development," University of Verona, Verona, Italy, April 27, 2012.

Invited speaker, Reasonfest, "Freaks of nature and intelligent design," University of Kansas, Lawrence, Kansas, February 11, 2012.

Invited colloquium, "Beyond dreams: How twitches during active sleep contribute to sensorimotor development," Department of Cell and Systems Biology, University of Toronto, Toronto, Canada, February 3, 2012.

Discussant, "Legacies and systems." In symposium entitled "Developmental pathways of species-typical behavior," International Society for Developmental Psychobiology, Washington, D.C., November 2011.

Invited speaker, "A twitch in time." Cognitive Development Society Pre-Conference Event entitled "Creating development: Integrating processes over multiple timescales," Philadelphia, Pennsylvania, October 2011.

Invited participant, "How will behavioral homology survive in an age of developmental plasticity?" NSF-sponsored workshop on "Exploring the Concept of Homology in Developmental Psychology," Dalhousie University, Halifax, Nova Scotia, August 2011.

Keynote speaker for Brain Awareness Week, "Beyond dreams: Do sleep-related movements contribute to brain development?" Neuroscience Program, Tulane University, New Orleans, Louisiana, March 17, 2011.

Keynote speaker for Darwin Week, "Developing creations and creating development: Why monsters matter," University of Northern Iowa, Cedar Falls, Iowa, February 9, 2011.

Invited colloquium, "Beyond dreams: Do sleep-related movements contribute to brain development?" Department of Physics, University of Iowa, February 7, 2011.

Invited colloquium, "Beyond dreams: Do sleep-related movements contribute to brain development?" Neuroscience Program, University of Maryland, College Park, Maryland, November 5, 2010.

Invited colloquium, "Beyond dreams: Do sleep-related movements contribute to brain development?" Neuroscience Seminar, University of Iowa, October 5, 2010.

Invited colloquium, "The form and function of infant sleep: From muscle to neocortex to developmental plasticity," Department of Biology, University of Iowa, September 24, 2010.

Invited participant, Opportunities at the Interface of Physics and Biology Symposium, Chicago, Illinois, July 27-29, 2010.

Invited speaker, "The form and function of infant sleep: From muscle to neocortex to developmental plasticity," for workshop entitled "Emerging locomotor skills, emotion regulation, and the tasks of the sleeping infant," University of Haifa, May 3-5, 2010.

Keynote speaker, "Developing creations and creating development: Why monsters matter," Annual meeting of the Iowa Academy of Science, Graceland University, Lamoni, Iowa, April 16, 2010.

Invited colloquium, "Sleep and the development of body, brain, and behavior," The Center for Psychiatric Neuroscience, University of Mississippi Medical Center, Jackson, Mississippi, March 12, 2010.

Invited speaker, "Developing creations and creating development: Why monsters matter," Mutter Museum at the College of Physicians of Philadelphia, Philadelphia, Pennsylvania, September 11, 2009.

Invited colloquium, "Sleep and the development of body, brain, and behavior," Center for Neurobiology and Behavior, University of Pennsylvania, September 11, 2009.

Invited speaker, "Sleep and the development of body, brain, and behavior," Distinguished Speakers in Behavioral and Brain Sciences Seminar Series, Department of Psychology, Cornell University, Ithaca, New York, September 3-4, 2009.

Invited speaker, "Spontaneous motor activity during active sleep modulates neocortical and hippocampal events and oscillations in newborn rats," Spring Hippocampal Research Conference, Verona, Italy, June 14-19, 2009.

Invited participant, ANR-NSF Meeting on Cognitive, Behavioural and Social Complexity Cognitive Sciences. Reims, France, April 27-28, 2009.

Invited discussant, "Are animals sentient beings?" Obermann Center Dinner Conversations,

University of Iowa, April 16, 2009.

Invited Darwin Day address, "Developing creations and creating development: Why monsters matter," University of Iowa, February 13, 2009.

Invited colloquium, "Sleep and the development of body, brain, and behavior," Department of Psychology, Ohio State University, January 15, 2009.

Presidential address, "Developing creations and creating development: Toward a developmental psychobiology of 'monsters,'" International Society for Developmental Psychobiology, Washington, DC, November 2008.

Invited speaker, "Developing creations and creating development," for symposium entitled "What is the nature of creativity," Kyoto University, Kyoto, Japan, October 2008.

Invited panelist for colloquium entitled "Writing science at the science university," University of Iowa, October 8, 2008.

Invited speaker, "Sleep and the development of body, brain, and behavior," for ICDLS workshop entitled "Neural plasticity across multiple time scales," University of Iowa, October 2008.

Invited speaker, "Epigenesis of ultradian and circadian sleep-wake rhythms," Neurobiological Basis of Circadian Rhythms Interaction with Complex Behaviors Workshop, Sponsored by NIMH, Bethesda, Maryland, July 22-23, 2008.

Invited keynote speaker. "Nativism, evolutionary psychology, and creationism," for symposium entitled "Reconciling nature and nurture in the study of behavior," Indiana University, Bloomington, Indiana, March 23-25, 2007.

Invited colloquium, "The form and function of infant sleep: From muscle to neocortex," Mayo Clinic College of Medicine, Rochester, Minnesota, December 5, 2006.

Invited colloquium, "The form and function of infant sleep: From muscle to neocortex," Department of Biological Sciences, The University of Iowa, Iowa City, Iowa, December 1, 2006.

Invited participant, Consensus meeting on the development of neocortical rhythms, University of Helsinki, Helsinki, Finland, November 10-11, 2006.

Invited colloquium, "Tracking the developmental dynamics of sleep and wakefulness," in workshop entitled "New Approaches to Modeling Sleep/Wake Dynamics and Cognitive Performance," Mathematical Biosciences Institute, Ohio State University, Columbus, Ohio, October 26-27, 2006.

Invited colloquium, "The form and function of infant sleep: From muscle to neocortex," Medical College of Wisconsin, Milwaukee, Wisconsin, March 30, 2006.

Invited colloquium, "The form and function of infant sleep: From muscle to neocortex," New York University, New York, NY, December 14, 2005.

Invited colloquium, "The ontogeny of mammalian sleep: From muscle to neocortex," University of Massachusetts, Amherst, MA, December 6, 2005.

APA fellow presentation, "Unraveling the mysteries of infant sleep," Annual Conference of the American Psychological Association, Washington, DC, August 2005.

Invited colloquium, "Unraveling the mysteries of infant sleep," Department of Neurosurgery, University of Iowa Hospitals and Clinics, May 27, 2005.

Invited colloquium, "Unraveling the mysteries of infant sleep," Department of Psychology and the Center for the Integrative Study of Animal Behavior, Indiana University, February 25, 2005.

Departmental colloquium, "Unraveling the mysteries of infant sleep," Department of Psychology, University of Iowa, February 23, 2005.

Invited colloquium, "In search of the elemental sleep circuit," Department of Psychology, University of Tennessee, October 13, 2005.

Invited participant, Pediatric Epilepsy Workshop, Sponsored by NINDS, Bethesda, Maryland, May 13-14, 2004.

Invited colloquium, "In search of the elemental sleep circuit," Neuroscience Program, Albert Einstein College of Medicine, Bronx, New York, April 7, 2004.

Departmental colloquium, "Do infants really sleep? And do they really need it?" Department of Psychology, University of Iowa, February 22, 2004.

Departmental colloquium, "What can infant rats teach us about sleep, cataplexy, orexin, and the hippocampus?" Department of Psychology, University of Iowa, March 5, 2003.

Invited colloquium, "Dissecting the neural substrates of sleep in infant rats," Neuroscience Program, Michigan State University, February 13, 2003.

Invited colloquium, "The pup who came in from the cold: Explorations in physiological ecology," Ecology, Evolutionary Biology, and Behavior Program, Michigan State University, February 12, 2003.

Invited colloquium, "Do infant rats cry? And why should we care?" Department of Psychology, University of California, Davis, California, December 4, 2001.

Invited colloquium, "Do infant rats cry? And why should we care?" Saturday Scholars Program, College of Liberal Arts, University of Iowa, October 6, 2001.

Invited colloquium, "Do infant rats cry? Recent developments in an ongoing controversy," Midwestern Psychological Association, May 2001.

Departmental colloquium, "Leading with your chin: Dissecting the components of behavioral thermoregulation in infant rats and hamsters," Department of Psychology, University of Iowa, October 11, 2000.

Invited colloquium, "Cardiovascular causes and consequences of ultrasonic 'crying' in infant rats," Department of Biological Sciences, University of Iowa, March 31, 2000.

Departmental colloquium, "Cardiovascular causes and consequences of ultrasonic 'crying' in infant rats," Department of Psychology, University of Iowa, September 8, 1999.

Departmental colloquium, "What distinguishes a good department from a great department? An open discussion," Department of Psychology, University of Iowa, May 5, 1999.

Departmental colloquium with Gregg Oden, "Why is the concept of set point so unsettling?" Department of Psychology, University of Iowa, February 3, 1999.

Award address, "The developmental context of sleep and homeostasis," American Psychological Association, San Francisco, California, August 1998.

Invited symposium discussant, "Emergence of motor organization in the fetus and neonate: Congruent themes in human and animal models," 11<sup>th</sup> Biennial International Conference on Infant Studies (ICIS), Atlanta, Georgia, April 1998.

Invited speaker for the Brain Awareness Week Symposium, "To sleep, perchance to twitch," University of Iowa, March 26, 1998.

Invited workshop, "Developmental approaches to the study of REM sleep," Department of Psychology, The University of Chicago, January 16, 1998.

Invited colloquium, "The developmental context of homeostasis," Department of Psychology, The University of Chicago, January 15, 1998.

Invited colloquium at the Center for Developmental Psychobiology, "The squeaky wheel gets the grease, and other deep thoughts on animal communication," State University of New York at Binghamton, February 1993.

Invited colloquium, Department of Psychology, University of Iowa, 1991.

Invited colloquium, Department of Psychology, Duke University, 1991.

Invited participant, Animal Models of SIDS Workshop, sponsored by the National Institute of Child Health and Human Development, Washington, D.C., October 1990.

#### CONFERENCE PRESENTATIONS: TALKS

Dooley JC, Sokoloff G, & Blumberg MS. Theta oscillations during REM sleep synchronize behavior and neural activity in the developing motor system. Annual meeting of the Associated Professional Sleep Societies, Charlotte, North Carolina, June 2022.

Sokoloff G, Tobias ME, & Blumberg MS. Quantity and patterning of REM-sleep twitches across the first postnatal year. International Society for Developmental Psychobiology, Washington, DC, November 2017.

Dooley JC, & Blumberg MS. Differences in state-dependent responses to sensory feedback between somatosensory and motor cortex in developing rats. International Society for Developmental Psychobiology, Washington, DC, November 2017.

Tiriac A, Del Rio-Bermudez C, & Blumberg MS. Differential processing of sensory reafference from self-generated movements. International Society for Developmental Psychobiology, Washington, DC, November 2014.

Tadjalli, A, Tiriac AG, Sokoloff G, Sattler N, & Blumberg MS. The self-tuning sleeping brain: Activity-dependent scaling of network activity in the developing brain. Annual meeting of the Associated Professional Sleep Societies, Minneapolis, June 2014.

Dyken EM, Zimmerman MB, Kyoungbin I, Lin-Dyken DC, Glenn C, Blumberg MS, Rodnitzky R, & Sokoloff G, et al. Comparing periodic limb movements in sleep in subjects with and without waking paretic/plegic limbs. American Academy of Neurology 66<sup>th</sup> Annual Meeting, Philadelphia, April 26-May 3, 2014.

Uitermarkt BD, Tiriac A, Fanning AS, Sokoloff G, & Blumberg MS. "Rapid whisker movements" during active sleep in newborn rats. Associated Professional Sleep Societies, Baltimore, Maryland, June 2013.

Blumberg MS, Coleman CM, & Gerth AI. A twitch in time. International Society for Developmental Psychobiology, New Orleans, LA, October 2012.

Tiriac A, Fanning AS, Uitermarkt BD, Coleman CM, Sokoloff G, & Blumberg MS. "Rapid whisker movements" in sleeping newborns. International Society for Developmental Psychobiology, New Orleans, LA, October 2012.

Gall AJ, Todd WD, & Blumberg MS. Developmental influences of the suprachiasmatic nucleus on circadian and ultradian rhythms of sleep and wakefulness in infant rats. Society for Neuroscience, Washington, D.C., November 2011.

Todd WD, Gall AJ, & Blumberg MS. The developmental emergence of circadian preference is predicted by distinct patterns of retinohypothalamic innervation in nocturnal Norway rats and diurnal Nile grass rats. International Society for Developmental Psychobiology, Washington, D.C., November 2011.

Blumberg MS. Beyond dreams: Do sleep-related movements contribute to brain development? Winter Animal Behavior Conference, Steamboat Springs, Colorado, January 2011.

Gall AJ, & Blumberg MS. Influences of the suprachiasmatic nucleus on ultradian and circadian rhythms

of sleep and wakefulness in infant rats. International Society for Developmental Psychobiology, San Diego, California, November 2010.

Blumberg MS. Beyond dreams: Do sleep-related movements contribute to brain development? International Society for Developmental Psychobiology, San Diego, California, November 2010.

Todd W, & Blumberg MS. Brainstem and hypothalamic regulation of sleep pressure and rebound in newborn rats. International Society for Developmental Psychobiology, Chicago, Illinois, October 2009.

Marcano-Reik AJ, & Blumberg MS. Developmental plasticity after acute and chronic transection of the corpus callosum: Evidence for recovery of function and GABAergic inhibition during the early postnatal period. International Society for Developmental Psychobiology, Chicago, Illinois, October 2009.

Blumberg MS. Freaks and sleep. Winter Animal Behavior Conference, Steamboat Springs, Colorado, January 2009.

Gall AJ, Todd WD, Ray B, Coleman CM, & Blumberg MS. The development of circadian sleep-wake rhythms in intact and enucleated Norway rats. International Society for Developmental Psychobiology, Washington, DC, November 2008.

Mohns EJ, & Blumberg MS. Synchronous bursts of activity in the developing hippocampus: Modulation by active sleep, and association with emerging gamma and theta rhythms. International Society for Developmental Psychobiology, Washington, DC, November 2008.

Blumberg MS. Carpe diem: The epigenesis of diurnality. Winter Animal Behavior Conference, Steamboat Springs, Colorado, January 2008.

Grobe JL, Grobe CL, Gall AJ, Sakai K, Rahmouni K, Blumberg MS, Johnson, AK, & Sigmund CD. Increased metabolic rate in transgenic mice overexpressing the central Renin-Angiotensin System. Annual High Blood Pressure Research Conference, American Heart Association, Tucson, Arizona, September 2007.

Seelke AMH, Marcano-Reik AJ, & Blumberg MS. The infant rat neocortex exhibits multiple forms of state-dependent activity before the emergence of delta waves. International Society for Developmental Psychobiology, San Diego, October 2007.

Seelke AMH, & Blumberg MS. Three novel waveforms exhibit state-dependent activity before the developmental emergence of delta waves in the infant rat cortex. Associated Professional Sleep Societies, Minneapolis, Minnesota, June 2007.

Blumberg MS. Nativism and creationism. Society for Research in Child Development, Boston, Massachusetts, April 1, 2007.

Blumberg MS, Johnson ED, Shaw C, & Coleman CM. Narcolepsy as the reversion to an infantile state of sleep-wake organization. International Society for Developmental Psychobiology, Atlanta, Georgia, October 2006.

Seelke AMH, & Blumberg MS. Development of state-dependent neocortical activity in infant rats. Associated Professional Sleep Societies, Salt Lake City, Utah, June 2006.

Blumberg MS. Nativism, evolutionary psychology, and creationism. Midwestern Psychological Association, Chicago, Illinois, May 2006.

Blumberg MS. Sleeping like a baby. Winter Animal Behavior Conference, Steamboat Springs, Colorado, January 2006.

Blumberg MS. Progress in the study of infant sleep, its development, and its neural substrates. International Society for Developmental Psychobiology, Washington, DC, November 2005.

Seelke AMH, Karlsson KÆ, Gall AJ, & Blumberg MS. The ontogeny of sleep-related phasic activity in the infant rats. International Society for Developmental Psychobiology, Washington, DC, November

2005.

Blumberg MS. Infant sleep: Problems and mechanisms. Winter Conference on Current Issues in Developmental Psychobiology, Panama, January 2005.

Karlsson KÆ, Kreider, JC, & Blumberg MS. Hypothalamic contribution to sleep-wake cycle development. Associated Professional Sleep Societies, Philadelphia, June 2004.

Blumberg MS, Middlemis-Brown JE, and Johnson ED. Infant rats deprived of sleep exhibit increased sleep pressure and homeostasis. Associated Professional Sleep Societies, Philadelphia, June 2004.

Blumberg MS, Stough SD, Middlemis-Brown JE, and Johnson ED. Cardiopulmonary and thermal factors influencing ultrasonic vocalizations in infant rats. International Society for Developmental Psychobiology, New Orleans, November 2003.

Karlsson KÆ, Kreider, JC, & Blumberg MS. Hypothalamic contribution to sleep-wake cycle development. International Society for Developmental Psychobiology, New Orleans, November 2003.

Blumberg MS Dissecting the neural substrates of sleep in infant rats. Winter Animal Behavior Conference, Jackson Hole, Wyoming, January 2003.

Blumberg MS, & Bjelica M. Venous return increases during ultrasonic vocalizations in adult rats: Implications for infant rat ultrasound production. International Society for Developmental Psychobiology, Orlando, October 2002.

Sokoloff G, & Blumberg MS. The contributions of endothermy to huddling in altricial infants. International Society for Developmental Psychobiology, San Diego, November 2001.

Karlsson KÆ, & Blumberg MS. Myoclonic twitching and nuchal muscle EMG in infant rats: Implications for the development of REM sleep. International Society for Developmental Psychobiology, San Diego, November 2001.

Blumberg MS. The epigenesis of behavioral thermoregulation in a lizard. Winter Animal Behavior Conference, Jackson Hole, Wyoming, January 2001.

Blumberg MS, Sokoloff, G, Boline EA, & Streeper NM. Behavioral thermoregulation in infant rats and hamsters. International Society for Developmental Psychobiology, New Orleans, November 2000.

Sokoloff G, Blumberg MS, Gorby TA, Lewis SJ, & Kirby RF. Sodium nitroprusside decreases blood pressure and evokes ultrasound production in infant rats. International Society for Developmental Psychobiology, New Orleans, November 2000.

Blumberg MS. For crying out loud, blood is thicker than water. Winter Animal Behavior Conference, Jackson Hole, Wyoming, January 2000.

Robinson SR, Blumberg MS, Lane MS, & Kreber LA. Spontaneous motor activity of fetal and neonatal rats is organized into discrete multilimb bouts. International Society for Developmental Psychobiology, Coral Gables, Florida, October 1999.

Blumberg MS, Sokoloff G, Kirby RF, & Kent KJ. Cardiovascular causes and consequences of ultrasound production in infant rats. International Society for Developmental Psychobiology, Coral Gables, Florida, October 1999.

Sokoloff G, Blumberg MS, Kreber LA, & Kent KJ. Does clonidine induce ultrasound production in infant rats via its effects on the cardiovascular system? International Society for Developmental Psychobiology, Coral Gables, Florida, October 1999.

Sokoloff G, & Blumberg MS. Comparative aspects of huddling behavior in infant rats and hamsters: Contributions of endogenous heat production. International Society for Developmental Psychobiology, Orleans, France, July 1998.

Blumberg MS, & Sokoloff G. Cardiovascular changes accompanying cold exposure and ultrasound production in infant rats. International Society for Developmental Psychobiology, Orleans, France, July 1998.

Blumberg MS. The P word. Winter Animal Behavior Conference, Jackson Hole, Wyoming, January 1998.

Kirby RF, Perdomo E, Deaver K, Sokoloff G, & Blumberg MS. Diminished BAT thermogenesis in infant SHR compared to WKY rats. International Society for Developmental Psychobiology, New Orleans, October 1997.

Blumberg MS, Sokoloff G, & Kirby RF. BAT thermogenesis contributes directly to the maintenance of cardiac rate in infant rats and hamsters during cold exposure. International Society for Developmental Psychobiology, New Orleans, October 1997.

Sokoloff G, & Blumberg MS. Protection of myoclonic twitching by brown adipose tissue in cold-exposed infant rats and hamsters. International Society for Developmental Psychobiology, New Orleans, October 1997.

Blumberg MS. Matters of the heart. Winter Animal Behavior Conference, Jackson Hole, Wyoming, January 1997.

Blumberg MS. The union of the state. Winter Conference on Current Issues in Developmental Psychobiology, Anguilla, British West Indies, January 1997.

Kirby RF, Sokoloff G, & Blumberg MS. Thermoregulatory responses to cold challenge in infant spontaneously hypertensive and Wistar-Kyoto rats. International Society for Developmental Psychobiology, Washington, D.C., November 1996.

Sokoloff G, & Blumberg MS, Mendella P, & Brown RE. Clonidine- and separation-induced ultrasound production in infant rats: Cardiovascular interactions. International Society for Developmental Psychobiology, Washington, D.C., November 1996.

Blumberg MS, G. Sokoloff, & Kirby RF. Infant rat ultrasound as by-product: Cardiovascular considerations. International Society for Developmental Psychobiology, Washington, D.C., November 1996.

Blumberg MS. Beyond homeostasis. Winter Animal Behavior Conference, Jackson Hole, Wyoming, January 1996.

Blumberg MS. Does brown fat thermogenesis protect sleep-related behaviors during cold exposure in neonatal rats? International Society for Developmental Psychobiology, San Diego, California, November 1995.

Blumberg MS. A sleeping tail. Winter Animal Behavior Conference, Jackson Hole, Wyoming, January 1995.

Blumberg MS, & Lucas DE. A developmental approach to the study of REM sleep. International Society for Developmental Psychobiology, Islamorada, Florida, November 1994.

Blumberg MS. To sleep, perchance to twitch. Winter Animal Behavior Conference, Jackson Hole, Wyoming, January 1994.

Blumberg MS. Physiological, biomechanical, and evolutionary issues in rodent ultrasonic communication. Winter Animal Behavior Conference, Jackson Hole, Wyoming, January 1993.

Blumberg MS, Efimova IV, & Alberts JR. Thermal imaging of brown fat activation during pup transfer to a warm environment. International Society for Developmental Psychobiology, Newport Beach, California, October 1992.

Blumberg MS, & Alberts JR. Reinterpretation of the physiological and communicatory significance of

infant rat ultrasonic vocalizations. Symposium on Perinatal Behavior and Physiology. Midwestern Psychological Association, Chicago, Illinois, April 1992.

Blumberg MS, & Alberts JR. Ultrasonic vocalizations by rat pups: Isolation, huddling, and air temperature. International Society for Developmental Psychobiology, New Orleans, Louisiana, November 1991.

Alberts JR, & Blumberg MS. Ultrasonic vocalizations as acoustic by-products of laryngeal braking: An overview. International Society for Developmental Psychobiology, New Orleans, Louisiana, November 1991.

Blumberg MS, & Alberts JR. Is there a physiological connection between the 40 kHz vocalization of rat pups and the 22 kHz vocalization of adult rats? International Society for Developmental Psychobiology, Cambridge, England, July 1990.

Blumberg MS, & Alberts JR. Ultrasonic vocalizations by rat pups in the cold are an acoustic by-product of increased oxygen consumption. International Society for Developmental Psychobiology, San Francisco, California, October 1989.

Blumberg MS, & Moltz H. Brain temperature, sexual behavior and the 22 kHz vocalization of the male rat. Conference on Reproductive Behavior, Tlaxcala, Mexico, June 1987.

Blumberg MS, & Moltz H. The 22 kHz vocalization of the male rat: evidence for a role in thermoregulation. Animal Behavior Society, Williamstown, Massachusetts, June 1987.

#### CONFERENCE PRESENTATIONS: POSTERS

Richardson AM, Sokoloff G, & Blumberg MS. Developmental changes in sensorimotor processing of the inferior olive in infant rats. Society for Neuroscience, Chicago, October 2024.

Ahmad M, Sokoloff G, & Blumberg MS. Parafacial zone and frontal cortex exhibit parallel homeostatic responses to sleep deprivation. Society for Neuroscience, Chicago, October 2024.

Sokoloff G, Long HC, Christiansen TG, Yu B, Karr, LK, McLeod AL, Carney DR, & Blumberg MS. Sleep and sleep-related behavior in extremely and mildly premature infants. Gordon Research Conference on Sleep Regulation and Function, Galveston, Texas, March 3-8, 2024.

Christiansen TG, Sokoloff G, & Blumberg MS. Characterizing the developmental trajectory of twitching during quiet sleep in human infants. Gordon Research Conference on Sleep Regulation and Function, Galveston, Texas, March 3-8, 2024.

Ahmad M, Kim J, Dwyer B, Sokoloff G, & Blumberg MS. Delta-rhythmic activity in the medulla develops coincident with cortical delta in sleeping infant rats. Gordon Research Conference on Sleep Regulation and Function, Galveston, Texas, March 3-8, 2024.

Richardson A, Sokoloff G, & Blumberg MS. Differential processing of sensory input from self- and other-generated movements in the infant cerebellum. Gordon Research Conference on the Cerebellum, Lewiston, Maine, August 6-11, 2023.

Lott M, Romanowski A, Baran B, Blumberg MS, Boes A, Sokoloff A, Soto V, Lynn A, Banik N. Ambulatory sleep EEG in post-stroke hospitalization. Annual meeting of the Associated Professional Sleep Societies, Houston, Texas, June 2024.

Dooley JC, Sokoloff G, & Blumberg MS. Developmental influence of M1 on the red nucleus in weanling rats. Society for Neuroscience, Washington, D.C., November 2023.

Ahmad M, Sokoloff G, & Blumberg MS. Rhythmic bursting activity in the parafacial zone is associated with the developmental emergence of cortical delta waves during the second postnatal week in rats. Society for Neuroscience, San Diego, California, November 2022.

Richardson A, Sokoloff G, & Blumberg MS. Preferential gating of self- and other-generated input in the infant rat cerebellum. Society for Neuroscience, San Diego, California, November 2022.

You Z, Sokoloff G, & Blumberg MS. Moving while sleeping: On the paradoxical co-occurrence of muscle atonia and twitching. Society for Neuroscience, San Diego, California, November 2022.

You Z, Sokoloff G, & Blumberg MS. Moving while sleep: On the paradoxical co-occurrence of muscle atonia and twitching. Annual meeting of the Associated Professional Sleep Societies, Charlotte, North Carolina, June 2022.

Sokoloff G, Dooley JC, Glanz RM, Wen RY, Hickerson MM, Evans LG, Laughlin HM, Schmidt JM, Apfelbaum KS, & Blumberg MS. Twitches emerge during quiet sleep in the early postnatal period and are synchronized with sleep spindles. Society for Neuroscience, Chicago, Illinois, November 2021.

Glanz RM, Dooley JC, Sokoloff G, & Blumberg MS. Sensory coding of limb kinematics in motor cortex across a key developmental transition. Society for Neuroscience, Chicago, Illinois, November 2021.

Dooley JC, Sokoloff G, and Blumberg MS. Theta rhythmicity during REM sleep functionally integrates behavior with neural activity in primary motor cortex and red nucleus in preweanling rats. Society for Neuroscience, Chicago, Illinois, November 2021.

Gómez LJ, Dooley JC, Sokoloff G, and Blumberg MS. Thalamic contributions to sensory processing in developing somatosensory and motor cortex. Society for Neuroscience, Chicago, Illinois, November 2021.

Sokoloff G, Dooley JC, Glanz RM, Wen, RY, Hickerson MM, Evans LG, Laughlin HM, Schmidt JM, Apfelbaum KS, & Blumberg MS. Twitches emerge during quiet sleep in the early postnatal period and are synchronized with sleep spindles. International Society for Developmental Psychobiology, Chicago, Illinois, November 2021.

Sokoloff G, Hickerson, M., Wen, R., Tobias, M., McMurray B, & Blumberg MS. Spatiotemporal organization of myoclonic twitching in sleeping human infants. International Conference on Infant Studies, Glasgow, Scotland, June 6-9, 2020.

Dooley JC, Sokoloff G, and Blumberg MS. Developmental emergence of REM-associated theta inventral posterior thalamus and motor cortex (M1) in preweanling rats. Gordon Research Conference on Sleep Regulation and Function, Lucca, Italy, March 8-12, 2020. (Cancelled due to coronavirus)

Glanz RM, Dooley JC, Sokoloff G, and Blumberg MS. Tuning properties of motor cortical neurons in sleeping infant rats. Gordon Research Conference on Sleep Regulation and Function, Lucca, Italy, March 8-12, 2020. (Cancelled due to coronavirus)

Dooley JC, Sokoloff G, and Blumberg MS. Developmental emergence of REM-associated theta inventral posterior thalamus and motor cortex (M1) in preweanling rats. Gordon Research Conference on Thalamocortical Interactions, Ventura, California, February 16-21, 2020.

Dooley JC, Sokoloff G, and Blumberg MS. Sensory feedback from myoclonic twitches during active sleep continues to activate sensorimotor structures beyond early infancy. Society for Neuroscience, Chicago, October 2019.

Gómez LJ, Dooley JC, Sokoloff G, and Blumberg MS. Functional divergence of sensory responses in developing somatosensory and motor cortex. Society for Neuroscience, San Diego, California, November 2018.

Sokoloff G, & Blumberg MS. Quantity and patterning of REM-sleep twitches across the first six postnatal months. Gordon Research Conference on Sleep Regulation and Function, Galveston, Texas, March 18-23, 2018.

Dooley JC, & Blumberg MS. "Sensory "awakening:" A rapid developmental transition in state-dependent sensory responses in primary motor cortex. Gordon Research Conference on Sleep

Regulation and Function, Galveston, Texas, March 18-23, 2018.

Gómez LJ, Del Rio-Bermudez C, Sokoloff G, & Blumberg MS. State-dependent oscillatory activity in the pontine grey of neonatal rats. International Society for Developmental Psychobiology, Washington, D.C., November 2017.

Del Rio-Bermudez C, Kim, J., Sokoloff G, & Blumberg MS. Myoclonic twitches during active sleep drive coordinated activity in the newborn rat cortico-hippocampal network. Society for Neuroscience, Washington, D.C., November 2017.

Mukherjee D, Sokoloff G, & Blumberg MS. Self-monitoring of myoclonic twitches by the inferior olive and lateral reticular nucleus: Evidence of corollary discharge. Society for Neuroscience, Washington, DC., November 2017.

Del Rio-Bermudez C, Kim, J., Sokoloff G, & Blumberg MS. Myoclonic twitches during active sleep drive coordinated activity in the newborn rat cortico-hippocampal network. International Society for Developmental Psychobiology, Washington, D.C., November 2017.

Mukherjee D, Sokoloff G, & Blumberg MS. Self-monitoring of myoclonic twitches by the inferior olive and lateral reticular nucleus: Evidence of corollary discharge. International Society for Developmental Psychobiology, Washington, D.C., November 2017.

Sokoloff G, Del Rio-Bermudez C, Plumeau A, Mukherjee D, & Blumberg MS. Rhythmic and active-sleep-dependent neural activity during periods of rapid developmental change, Gordon Research Conference on Sleep Regulation and Function, Galveston, Texas, March 13-18, 2016.

Mukherjee D, & Blumberg MS. Sleep-dependent activity in visual cortex before eye opening in infant rats, Gordon Research Conference on Sleep Regulation and Function, Galveston, Texas, March 13-18, 2016.

Del Rio-Bermudez C, Sokoloff G, & Blumberg MS. Theta oscillations in the developing red nucleus during active sleep, Gordon Research Conference on Sleep Regulation and Function, Galveston, Texas, March 13-18, 2016.

Blumberg MS, & Sokoloff G. REM sleep twitching in human newborns: A potentially sensitive indicator of neurodevelopmental trajectories. Grand Challenges Meeting, Beijing, China, October 2015.

Del Rio-Bermudez C, Sokoloff, G, & Blumberg MS. Sensorimotor integration in the red nucleus of infant rats during active sleep. Society for Neuroscience, Chicago, October 2015.

Sattler NJ, Yonk AJ, Coleman CM, Sokoloff G, & Blumberg MS. Lack of muscle spindles in infant ErbB2 knockout mice is associated with deficits in functional and anatomical cerebellar development. Society for Neuroscience, Chicago, October 2015.

Plumeau A, Del Rio-Bermudez C, Sokoloff G, & Blumberg MS. Twitches drive neural activity in the deep cerebellar nuclei of sleeping newborn rats: Implications for sensorimotor development. Society for Neuroscience, Chicago, October 2015.

Mukherjee D, Sokoloff G, & Blumberg MS. The inferior olive processes twitch-related information during active sleep in newborn rats: Evidence of corollary discharge. Society for Neuroscience, Chicago, October 2015.

Puskarjov M, Pospelov A, Blumberg MS, Yukin AY, & Kaila K. The brainstem is an independent generator of febrile seizures. Society for Neuroscience, Chicago, October 2015.

Tiriac A, Del Rio-Bermudez C, & Blumberg MS. Self-generated movements with “unexpected” sensory consequences. Society for Neuroscience, Washington, DC, November 2014.

Plumeau A, Sokoloff G, Mukherjee D, & Blumberg MS. Sleep- and twitch-dependent Purkinje cell activity across early postnatal cerebellar development. Society for Neuroscience, Washington, DC, November 2014.

Del Rio-Bermudez C, Sokoloff G, & Blumberg MS. Neuronal firing properties of the red nucleus during sleep-related twitches and wake movements in newborn rats. International Society for Developmental Psychobiology, Washington, DC, November 2014.

Sattler NJ, Sokoloff G, & Blumberg MS. Somatotopic organization of the cerebellum in early development. International Society for Developmental Psychobiology, Washington, DC, November 2014.

Sokoloff G, Plumeau AM, Mukherjee D, & Blumberg MS. The role of active sleep in postnatal cerebellar development. International Society for Developmental Psychobiology, Washington, DC, November 2014.

Tiriach A, Sokoloff G, Del Rio-Bermudez C, & Blumberg MS. Differential processing of sensory feedback from sleep-related twitches and wake movements in the motor cortex of infant rats. Annual meeting of the Associated Professional Sleep Societies, Minneapolis, June 2014.

Del Rio-Bermudez C, Tiriach A, & Blumberg MS. Mechanisms underlying the differential processing by motor cortex of reafference from sleep-related twitches and wake movements. Annual meeting of the Associated Professional Sleep Societies, Minneapolis, June 2014.

Blumberg MS, Coleman CM, McMurray B, Gerth AI, Weiner JA, & B. Fritzsche, B. Spatiotemporal patterning of limb twitching during active sleep in newborn rats and ErbB2 knockout mice lacking muscle spindles. Society for Neuroscience, San Diego, November 2013.

Mukherjee D, & Blumberg MS. Sleep-dependent neural activity in the medial septum as hippocampal theta emerges in newborn rats. Society for Neuroscience, San Diego, November 2013.

Uitermarkt BD, Sokoloff G, Weiner J, Fritzsche B, & Blumberg MS. Newborn mice lacking muscle spindles exhibit reduced twitch-related Purkinje cell activity during active sleep. Society for Neuroscience, San Diego, November 2013.

Sokoloff G, Uitermarkt BD, & Blumberg MS. Purkinje cell complex spike activity during active sleep in newborn rats. Society for Neuroscience, San Diego, November 2013.

Tiriach A, & Blumberg MS. Sleep-dependent neural activity in the superior colliculus of newborn rats. Society for Neuroscience, San Diego, November 2013.

Tadjalli AS, & Blumberg MS. Society for Neuroscience, San Diego, November 2013.

Blumberg MS, Coleman CM, & Gerth AI. Spatiotemporal properties of myoclonic twitching in the forelimbs of newborn rats during active sleep. Associated Professional Sleep Societies, Baltimore, Maryland, June 2013.

Sokoloff G, Uitermarkt BD, Fanning AS, Mukherjee D, & Blumberg MS. Twitch-dependent cerebellar activity during active sleep in newborn rats. Associated Professional Sleep Societies, Baltimore, Maryland, June 2013.

Sokoloff G, Uitermarkt BD, Todd WD, & Blumberg MS. Cerebellar activity during sleep and wakefulness in week-old rats. International Society for Developmental Psychobiology, New Orleans, October 2012.

Fanning AS, Tiriach A, & Blumberg MS. State-dependent neural activity in whisker thalamus. International Society for Developmental Psychobiology, New Orleans, October 2012.

Uitermarkt BD, Sokoloff G, Tiriach A, & Blumberg MS. Spontaneous motor activity in the neonatal whisker system. III. State-dependent barrel cortex activity revealed by voltage-sensitive dye imaging. International Society for Developmental Psychobiology, New Orleans, October 2012.

Tiriac A, Sokoloff G, Coleman CM, & Blumberg MS. Spontaneous motor activity in the neonatal whisker system. I. Behavioral evidence of whisker twitching during active sleep. Society for Neuroscience, New Orleans, October 2012.

Fanning AS, Tiriac A, & Blumberg MS. Spontaneous motor activity in the neonatal whisker system. II. State-dependent neural activity in whisker thalamus. Society for Neuroscience, New Orleans, October 2012.

Uitermarkt BD, Sokoloff G, Tiriac A, & Blumberg MS. Spontaneous motor activity in the neonatal whisker system. III. State-dependent barrel cortex activity revealed by voltage-sensitive dye imaging. Society for Neuroscience, New Orleans, October 2012.

Sokoloff G, Uitermarkt BD, Todd WD, & Blumberg MS. Cerebellar activity during sleep and wakefulness in infant rats. Society for Neuroscience, New Orleans, October 2012.

Todd WD, Gall AJ, & Blumberg MS. Distinct retinohypothalamic innervation patterns predict the developmental emergence of species-typical circadian preference. Society for Neuroscience, Washington, D.C., November 2011.

Tiriac A, Fanning A, & Blumberg MS. State-dependent thalamic activity in infant rats. Society for Neuroscience, Washington, D.C., November 2011.

Tiriac A, Fanning A, & Blumberg MS. State-dependent thalamic activity in infant rats. International Society for Developmental Psychobiology, Washington, D.C., November 2011. (Co-winner, Best Poster Award)

Todd WD, Gall AJ, & Blumberg MS. Developmental comparative exploration of the neural mechanisms underlying phase preference in diurnal Nile grass rats and nocturnal Norway rats. International Society for Developmental Psychobiology, San Diego, California, November 2010. (Co-winner, Best Poster Award)

Marcano-Reik AJ, Prasad T, Weiner JA, & Blumberg MS. An abrupt development shift in callosal modulation of sleep-related spindle bursts coincides with the emergence of excitatory-inhibitory balance and a reduction of somatosensory cortical plasticity. International Society for Developmental Psychobiology, San Diego, California, November 2010.

Gall AJ & Blumberg MS. Neural and non-neural suprachiasmatic influences on sleep and wakefulness in infant rats. Associated Professional Sleep Societies, San Antonio, Texas, June 2010.

Todd WD, Gall AJ, & Blumberg MS. The development of day-night differences in sleep-wake behavior and Fos-immunoreactivity in diurnal Nile grass rats and nocturnal Norway rats. Associated Professional Sleep Societies, San Antonio, Texas, June 2010.

Gall AJ, Joshi B, Best J, Florang VR, Doorn JA, & Blumberg MS. Developmental transition from exponential to power-law wake behavior depends upon the functional integrity of the locus coeruleus. International Society for Developmental Psychobiology, Chicago, Illinois, 2009. (Co-winner, Best Poster Award)

McMurray MS, Zeskind PS, Blumberg MS, Meiners S, Cox ET, Williams SK, Johns JM. Gestational cocaine affects rat pup brown adipose tissue thermogenesis, ultrasonic vocalizations, and urine characteristics. Society for Neuroscience, Chicago, Illinois, October 2009.

Marcano-Reik AJ, & Blumberg MS. The corpus callosum modulates spindle burst activity within homotopic regions of somatosensory cortex in newborn rats. Society for Neuroscience, Washington, DC, November 2008.

Mohns EJ, & Blumberg MS. Synchronous bursts of activity in the developing hippocampus: Modulation by active sleep, and association with emerging gamma and theta rhythms. Society for Neuroscience, Washington, DC, November 2008.

Joshi BS, Best JA, Terman DH, Blumberg MS. (2007). Developmental dynamics of sleep-wake cycles: a mathematical model. Society for Neuroscience, San Diego, November 2007.

Seelke AMH, Marcano-Reik AJ, & Blumberg MS. The infant rat neocortex exhibits multiple forms of state-dependent activity before the emergence of delta waves. Society for Neuroscience, San Diego, November 2007.

Todd WD, & Blumberg MS. Sleep regulation in neonatal rats: A reexamination. International Society for Developmental Psychobiology, San Diego, October 2007.

Marcano-Reik AJ, Todd WD, Seelke AMH, & Blumberg MS. Development, state dependence, and somatotopic organization of neocortical activity during the early postnatal period in rats. International Society for Developmental Psychobiology, San Diego, October 2007.

Gall AJ, Ray, B., Todd WD, Coleman CM, & Blumberg MS. Circadian rhythmicity in normal and enucleated infant rats: Implications for the development of nocturnality and diurnality. 72nd Cold Spring Harbor Laboratories Symposium: Clocks & Rhythms, Cold Spring Harbor, New York, May 30-June 4, 2007.

Mohns, E., Karlsson KÆ, & Blumberg MS. Transient co-occurrence of ripple- and gamma-frequency oscillations during a period of hyperexcitability in the neonatal rat hippocampus *in vivo*. International Society for Developmental Psychobiology, Atlanta, October 2006.

Seelke AMH, & Blumberg MS. State-dependent neocortical activity is present before the onset of delta waves in infant rats. International Society for Developmental Psychobiology, Atlanta, October 2006.

Gall AJ, Ray B, & Blumberg MS. Circadian variations in sleep and wakefulness in developing rats. Society for Neuroscience, Atlanta, Georgia, October 2006. International Society for Developmental Psychobiology, Atlanta, October 2006.

Gall AJ, Ray B, & Blumberg MS. Circadian variations in sleep and wakefulness in developing rats. Society for Neuroscience, Atlanta, Georgia, October 2006.

Mohns, E., Karlsson KÆ, & Blumberg MS. Development of ripple and gamma frequency oscillations in the neonatal rat hippocampus *in vivo*. Society for Neuroscience, Atlanta, Georgia, October 2006.

Viana di Prisco G, Mohns E, & Blumberg MS. CRF can evoke seizures in infant rats through its effects on the brainstem. Society for Neuroscience, Atlanta, Georgia, October 2006.

Ray B, Gall AJ, & Blumberg MS. Circadian variations in sleep and wakefulness in developing rats. Associated Professional Sleep Societies, Salt Lake City, Utah, June 2006.

Mohns EJ, Karlsson KÆ, & Blumberg MS. Effects of modafinil on developing sleep patterns in infant rats. International Society for Developmental Psychobiology, Washington, DC, November 2005.

Seelke AMH, Freeman JH, Jr., & Blumberg MS. State-dependent thalamic activity in infant rats and its developmental relations with slow-wave neocortical activity. Society for Neuroscience, Washington, D.C., November 2005.

Gall AJ, Poremba A, & Blumberg MS. Contributions of the dorsolateral pontine tegmentum to the regulation of sleep and wakefulness in early infancy. Society for Neuroscience, Washington, D.C., November 2005.

Vianna Di Prisco G, & Blumberg MS. Effects of serotonin depletion on sleep-related motor activity in infant rats. Society for Neuroscience, Washington, D.C., November 2005.

Mohns EJ, Karlsson KÆ, & Blumberg MS. Effects of modafinil on developing sleep patterns in infant rats. Society for Neuroscience, Washington, D.C., November 2005.

Karlsson KÆ, Mohns EJ, Vianna di Prisco G, & Blumberg MS. Are hippocampal sharp waves and startles causally linked? Society for Neuroscience, Washington, D.C., November 2005.

Blumberg MS, Karlsson KÆ, Seelke AMH, Gall AJ, & Mohns EJ. The neural substrates of infant sleep. Associated Professional Sleep Societies, Denver, June 2005.

Seelke AMH, Karlsson KÆ, & Blumberg MS. The ontogeny of spontaneous sleep-related phasic activity in the rat. Associated Professional Sleep Societies, Denver, June 2005.

Mohns EJ, Karlsson KÆ, & Blumberg MS. The ventrolateral preoptic area and basal forebrain play opposing roles in the descending modulation of sleep-wake cyclicity in infant rats. Associated Professional Sleep Societies, Denver, June 2005.

Karlsson KÆ, & Blumberg MS. Medullary control of REM sleep atonia in infant rats. Society for Neuroscience, San Diego, November 2004.

Seelke AMH, & Blumberg MS. Ontogeny of sleep-related phasic activity during early infancy. Society for Neuroscience, San Diego, November 2004.

Mohns EJ, Karlsson KÆ, & Blumberg MS. Hypothalamic modulation of sleep-wake cyclicity in infant rats. Society for Neuroscience, San Diego, November 2004.

Blumberg MS, Middlemis-Brown JE, & Johnson ED. Sleep homeostasis in infant rats. Society for Neuroscience, San Diego, November 2004.

Seelke AMH, & Blumberg MS. Sensory threshold increases during active sleep in infant rats. Associated Professional Sleep Societies, Philadelphia, June 2004.

Seelke AMH, & Blumberg MS. Double dissociation between sniffing and arousal in infant rats. International Society for Developmental Psychobiology, New Orleans, November 2003.

Karlsson KÆ, & Blumberg MS. Effects of brain temperature on spontaneous hippocampal activity in anesthetized infant rats. Society for Neuroscience, New Orleans, November 2003.

Blumberg MS, Karlsson KÆ, & Kreider JC. Hypothalamic contribution to sleep cycle development. Society for Neuroscience, New Orleans, November 2003.

Seelke AMH, & Blumberg MS. Double dissociation between sniffing and arousal in infant rats. Society for Neuroscience, New Orleans, November 2003.

Karlsson KÆ, & Blumberg MS. Nuchal atonia and hippocampal theta characterize the sleep of rats as young as two days of age. Associated Professional Sleep Societies, Chicago, June 2003.

Karlsson KÆ, & Blumberg MS. Active sleep or REM sleep? Let's call the whole thing off. Society for Neuroscience, Orlando, November 2002.

Kreider, JC, Blumberg MS, & Spencer JP. Selective electrolytic lesions in the mesopontine region disrupt active sleep in week-old rats. Society for Neuroscience, Orlando, November 2002.

Karlsson KÆ, & Blumberg MS. The ontogeny of the hippocampal theta rhythm and its relation with behavioral state. International Society for Developmental Psychobiology, Orlando, October 2002.

Kreider, JC, & Blumberg MS. Selective electrolytic lesions in the mesopontine region disrupt active sleep in week-old rats. International Society for Developmental Psychobiology, Orlando, October 2002.

Johnson ED, & Blumberg MS. Orientation responses toward heat localized to the snout during bodily cooling in infant rats and hamsters. International Society for Developmental Psychobiology, San Diego, November 2001.

Streeper NM, Sokoloff G, & Blumberg MS. Effects of maternal contact on ultrasonic vocalizations in infant rats. International Society for Developmental Psychobiology, San Diego, November 2001.

Kreider, JC, & Blumberg MS. Mesopontine distribution of c-fos immunoreactivity during active sleep in infant rats. Associated Professional Sleep Societies, Chicago, June 2001.

Kreider, JC, & Blumberg MS. Mesopontine contributions to active 'twitch' sleep in infant rats. Society for Neuroscience, New Orleans, November 2000.

Sokoloff G, Blumberg MS, Lewis SJ, & Kirby RF. Ultrasonic vocalizations and the autonomic nervous system in infant rats. Society for Neuroscience, New Orleans, November 2000.

Lewis SJ, Blumberg MS, & Sokoloff G. Incubation temperature modulates posthatching thermoregulatory behavior in the Madagascar ground gecko. International Society for Developmental Psychobiology, New Orleans, November 2000.

Kreider, JC, & Blumberg MS. Mesopontine c-fos immunoreactivity during active sleep in week-old rats. International Society for Developmental Psychobiology, New Orleans, November 2000.

Boline EA, Sokoloff G, & Blumberg MS. Behavioral responses to thermal stimulation in infant rats and hamsters. International Society for Developmental Psychobiology, New Orleans, November 2000.

Lewis SJ, Blumberg MS, & Sokoloff G. Sodium nitroprusside-induced venodilation increases ultrasonic vocalization in infant rats. Experiment Biology, San Diego, California, April 2000.

Sokoloff G, & Blumberg MS. An infrared thermographic study of the thermal advantage gained by huddling in infant rats: Contributions of endothermy and behavior. Experimental Biology, San Diego, California, April 2000.

Blumberg MS, Sokoloff G, Kirby RF, & Kent KJ. Increased venous return accompanying clonidine-induced vocalizations in young rats. Society for Neuroscience, Miami Beach, Florida, October 1999.

Sokoloff G, Blumberg MS, & Kent KJ. Do cold exposure and clonidine administration stimulate infant rat ultrasound production through similar effects on the cardiovascular system? Society for Neuroscience, Miami Beach, Florida, October 1999.

Kreider, JC, & Blumberg MS. Effects of pontine and midbrain transections on myoclonic twitching in week-old rats. International Society for Developmental Psychobiology, Coral Gables, Florida, October 1999.

Kreider, JC, & Blumberg MS. Geotaxis in 2-week-old Norway rats (*Rattus Norvegicus*): A reevaluation. International Society for Developmental Psychobiology, Orleans, France, July 1998.

Karlen SJ, & Blumberg MS. Relations between cardiac rate and active sleep behaviors in developing rats. International Society for Developmental Psychobiology, Orleans, France, July 1998.

Kosinski CJ, Sokoloff G, & Blumberg MS. Sensory modulation of myoclonic twitching during active sleep in infant rats. International Society for Developmental Psychobiology, Washington, D.C., November 1996.

Sokoloff G, & Blumberg MS. Dynamics of thermogenesis in neonatal rats. International Society for Developmental Psychobiology, San Diego, California, November 1995.

Blumberg MS, & Lucas DE. A developmental and component analysis of active sleep. Society for Neuroscience, San Diego, California, November 1995.

Schalk SL, & Blumberg MS. Decerebration and BAT thermogenesis in neonatal rats. International Society for Developmental Psychobiology, Islamorada, Florida, November 1994.

Blumberg MS. Effect of mid-thoracic spinal transection on the occurrence and coordination of "REM-related" muscular twitches in neonatal rats. International Society for Developmental Psychobiology, Alexandria, Virginia, November 1993.

Alberts JR, Blumberg MS, & Ronca AE. Thermal imaging of brown fat activation in perinatal rats. International Society for Developmental Psychobiology, New Orleans, Louisiana, November 1991.

Blumberg MS, Mennella JA, & Moltz H. Rapid brain cooling following ejaculation in the male rat.

Conference on Reproductive Behavior, Montreal, Canada, June 1986.

**SYMPOSIA ORGANIZED**

Sleep Development and Plasticity. Mark Blumberg (Chair), Robert Vertes, James Shaffery. Winter Conference on Current Issues in Developmental Psychobiology, Panama, January 2005.

Conflict, Controversy, and Self-Discovery: Three Scientists Tell Their Stories. Mark Blumberg (Chair), Celia Moore, Jerry Rudy, and Douglas Wahlsten. International Society for Developmental Psychobiology, Orlando, October 2002.

**TEACHING AND MENTORING**

**CLASSROOM INSTRUCTION**

Semester, Year	Course	Students Enrolled	Selected Median ACE Summary Scores (Scale from 1 to 6); Analogous SPOT scores reported prior to Fall 1998; Electronic forms instituted in 2016				
			The instructor is effective in teaching the course material	The instructor supports student learning in class	This course is well planned and organized	I learned a great deal in this class	Student questions are encouraged
Spring 2024	PSY:5812 Foundations in Behavioral and Cognitive Neuroscience (.25 credit; overload)	9					
Spring 2022	PSY:5812 Foundations in Behavioral and Cognitive Neuroscience (.25 credit; overload)	6					
Spring 2016	PSY:4090 Senior Seminar: Developmental Psychobiology	17	5.90	5.90	5.90	5.90	5.90
			This course is well planned and organized	Overall this instructor is an effective teacher OR I would recommend a course taught by this instructor to other students	Important points are clarified with good examples	Student questions are encouraged	This instructor is effective in presenting materials in lecture/discussion
Spring 2015	PSY:7210 Graduate Seminar: Developmental	9	5.88	5.94	5.88	6.00	5.94

	Behavioral Neuroscience						
Spring 2015	31:002 Biological Psychology	165	5.83	5.81	5.84	5.91	5.83
Spring 2014	31:002 Biological Psychology	195	5.75	5.75	5.68	5.84	5.77
Spring 2014	31:242 Foundations in Behavioral and Cognitive Neuroscience	6	5.50	5.90	5.90	5.90	5.90
Spring 2013	31:190 Senior Seminar: Developmental Psychobiology	14	5.29	5.96	5.96	5.91	5.78
Spring 2012	31:338 Advanced Topics in Behavioral and Cognitive Neuroscience	12	5.81	6.00	5.95	6.00	6.00
Spring 2010	31:002 Biological Psychology	193	5.74	5.54	5.41	5.85	5.68
Spring 2008	31:190 Psychology Seminar: Sleep	21	5.31	5.97	5.79	6.00	5.97
Fall 2006	31:338 Advanced Topics in Behavioral and Cognitive Neuroscience	12					
Spring 2006	31:234 Developmental Psychobiology	16					
Spring 2005	31:012 Introduction to Brain and Behavior	240	5.59	5.53	5.50	5.90	5.62
Spring 2004	31:190 Psychology Seminar	21	5.91	5.91	5.82	5.97	5.77
Spring 2003	31:338 Advanced Topics in Behavioral and Cognitive Neuroscience	11					
Spring 2002	31:012 Introduction to Brain and Behavior	240	5.68	5.59	5.54	5.85	5.70
Fall 2000	31:012 Introduction to Brain and Behavior	240	5.56	5.58	5.57	5.83	5.70
Fall 1999	31:3 General Psychology	80	5.69	5.73	5.80	5.90	5.83
Spring 1999	31:132 Biopsychology of Motivated Behaviors	50	5.80	5.79	5.80	5.97	5.77
Fall 1998	31:3 General Psychology	80	5.87	5.80	5.84	5.93	5.87
Spring 1998	31:132 Biopsychology of Motivated Behaviors	60	5.70	5.91	5.89		5.98
Fall 1997	31:003 General Psychology	52	5.39	5.63	5.64		5.65

Spring 1997	31:132 Biopsychology of Motivated Behaviors	50	5.65	5.84	5.77		5.94
Fall 1996	31:003 General Psychology	52	5.53	5.61	5.79		5.82
Fall 1995	31:132 Biopsychology of Motivated Behaviors	42	5.65	5.33	5.41		5.50
Spring 1995	31:003 General Psychology	61	5.30	5.63	5.63		5.56
Spring 1995	31:234 Developmental Psychobiology	11	5.64	5.82	6.00		6.00
Fall 1994	31:132 Motivation	50	5.66	5.59	5.68		5.71
Spring 1994	31:003 General Psychology	60	5.17	5.26	5.51		5.40
Fall 1993	31:132 Motivation	64	5.16	5.51	5.42		5.47
Spring 1993	31:003 General Psychology	48	5.42	5.55	5.58		5.45
Spring 1993	31:234 Developmental Psychobiology	16	5.19	5.75	5.38		5.63
Fall 1992	31:132 Motivation	61	5.02	5.51	5.32		5.51

#### GUEST LECTURES (PARTIAL LIST)

Fall 2022	PSY:3275	The Science of Sleep (1 lecture)
Fall 2021	PSY:3275	The Science of Sleep (1 lecture)
Fall 2020	PSY:3275	The Science of Sleep (1 lecture)
Spring 2020	PSY:5212	Foundations in Behavioral & Cognitive Neuroscience (2 lectures)
Spring 2013	02:184	Developmental Neurobiology (1 lecture)
Spring 2012	02:184	Developmental Neurobiology (1 lecture)
Spring 2011	31:242	Fundamentals of Learning and Behavior (1 lecture)

#### GRADUATE TEACHING (PRE-2003)

Fall 2002	31:241	Proseminar in Behavioral and Cognitive Neuroscience (16)
Fall 2001	31:241	Proseminar in Behavioral and Cognitive Neuroscience (18)
Fall 2000	31:241	Proseminar in Behavioral and Cognitive Neuroscience (11)
Fall 1999	31:338	Advanced Topics in Behavioral and Cognitive Neuroscience (16)
Fall 1998	31:241	Behavioral and Cognitive Neuroscience I (Course coordinator) (12)
Spring 1998	31:242	Behavioral and Cognitive Neuroscience II (Course coordinator + 10 lectures) (6)
Fall 1997	31:241	Behavioral and Cognitive Neuroscience I (Course coordinator) (18)
Spring 1997	31:242	Behavioral and Cognitive Neuroscience II (7 lectures) (8)
	31/338	Advanced Topics in Behavioral and Cognitive Neuroscience (5)

- Fall 1996 31:241 Behavioral and Cognitive Neuroscience I (3 lectures) (10)  
Spring 1994 31:338 Advanced Topics in Neuroscience and Behavior (10)  
31:244 Behavioral Neuroscience (2 lectures) (7)  
Spring 1993 31:244 Behavioral Neuroscience (2 lectures) (4)

#### OTHER TEACHING

- Summer, 2003 31:185 Research Practicum (Jonathan Mowers)

#### GRADUATE STUDENT SUPERVISION

##### Doctoral Students

Taylor Christiansen (Psychology), 2023-present

Midha Ahmad (Psychology), 2021-present

- Best oral presentation, Gordon Research Seminar on Sleep Regulation and Function, Galveston, Texas, March 2024
- Simon Award, Department of Psychological and Brain Sciences, 2024
- Gormezano Award for the best student-authored paper in BCN

Angela Richardson (Neuroscience), 2020-present

Ryan Glanz, PhD (Psychology), 2017-2022

- Dissertation: "Development of sensory processing in rat primary motor cortex"
- Gormezano Award for the best student-authored paper in BCN
- Graduate College Post-Comprehensive Research Award
- Current: Private technology company

Lex Gómez, PhD (Neuroscience), 2017-2022

- Dissertation: "Developmental changes in sensory processing and state-dependent activity in sensorimotor and prefrontal cortex of infant rats"
- Ballard Seashore Dissertation Year Fellowship
- Publication Award from the Iowa Neuroscience Graduate Program
- Postdoc: Johns Hopkins University

Carlos Del Rio-Bermudez, PhD (Psychology), 2013-2018

- Dissertation: "Sleep-dependent sensorimotor processing and network connectivity in the infant rat"
- Simon Award from the Department of Psychology
- Ballard Seashore Dissertation Year Fellowship
- Lewis Award from the Department of Psychology
- Gormezano Award for the best student-authored paper in BCN
- Graduate College Post-Comprehensive Research Award
- Postdoc: University of Bern
- Current: Science writer

Didhiti Mukherjee, PhD (Psychology), 2012-2018

- Dissertation: “It’s not you, it’s me: Corollary discharge in the precerebellar nuclei of sleeping infant rats”
- Ballard Seashore Dissertation Year Fellowship
- Gormezano Award for the best student-authored paper in BCN
- Graduate College Post-Comprehensive Research Award
- Postdoc: University of Maryland/Johns Hopkins University

Alexandre Tiriac, PhD (Psychology), 2010-2016

- Dissertation: “State-dependent processing of reafference arising from self-generated movements in infant rats”
- Dissertation Award from the International Society for Developmental Psychobiology (ISDP)
- Gormezano Award for the best student-authored paper in BCN
- Graduate Deans’ Distinguished Dissertation Award
- Postdoc: University of California, Berkeley
- Current: Assistant Professor, Vanderbilt University

William (Trey) Todd, PhD (Psychology), 2006-2012

- Dissertation: “Night and day: Distinct retinohypothalamic innervation patterns predict the development of nocturnality and diurnality in two Murid rodent species”
- Lewis Award from the Department of Psychology
- Postdoc: Harvard Medical School
- Current: Assistant Professor, University of Wyoming

Andrew Gall, PhD (Psychology), 2004-2011

- Dissertation: “The developmental emergence of a wake-promoting pathway regulating ultradian and circadian rhythms in infant rats”
- Ballard Seashore Dissertation Year Fellowship
- Gormezano Award for the best student-authored paper in BCN
- Postdoc: Michigan State University
- Current: Associate Professor, Hope College

Ethan Mohns, PhD (Psychology), 2003-2009

- Dissertation: “Interactions between the developing neocortex and hippocampus during active sleep”
- Simon Award from the Department of Psychology
- Gormezano Award for the best student-authored paper in BCN
- Postdoc: Janelia Farm (HHMI), Yale University
- Current: Research Associate, Yale University

Adele Seelke, PhD (Psychology), 2001-2007

- Dissertation: “The developmental emergence of state-dependent neocortical activity in infant rats”
- Dissertation Award from the International Society for Developmental Psychobiology (ISDP)
- Lewis Award from the Department of Psychology
- Gormezano Award for the best student-authored paper in BCN
- Postdoc: University of California, Davis
- Current: Research Associate II, University of California, Davis

Karl Karlsson, PhD (Psychology), 2000-2005

- Dissertation: "The neural substrates of atonia and myoclonic twitching during sleep in infant rats"
- Dissertation Award from the International Society for Developmental Psychobiology (ISDP)
- Gormezano Award for the best student-authored paper in BCN
- Postdoc: UCLA
- Current: Professor, Reykjavik University, Iceland
  - CEO, 3Z Pharmaceuticals

Joy Kreider, PhD (Psychology), 1996-2003

- Dissertation: "The neural substrates of active sleep in infant rats"
- Postdoc: University of Colorado, University of Texas

Greta Sokoloff, PhD (Psychology), 1996-2001

- Dissertation: "Physiological and behavioral interactions during huddling by infant rats and hamsters"
- Dissertation Award from the International Society for Developmental Psychobiology (ISDP)
- Spence Award from the Department of Psychology
- Lewis Award from the Department of Psychology
- Postdoc: Indiana University, University of Chicago
- Current: Research Scientist, University of Iowa

### Masters Students

Zipeng You, MA (Psychology), 2018-2023

Alan Plumeau, MA (Neuroscience), 2012-2016

Brandt Uitermarkt, MA (Psychology), 2011-2013

Sean Lewis, MA (Psychology), 1999-2001

### POSTDOCTORAL SUPERVISION

James C. Dooley, PhD, 2016-2022

- Outstanding Early Investigator Award, Sleep Research Society, 2022.
- Career Development Award, Sleep Research Society Foundation, 2022.
- Winner, OVPR Postdoctoral Research Scholar/Fellow Excellence Award, 2020.
- Current: Assistant Professor, Purdue University

Arash Tadjalli, PhD, 2012-2014

- Current: Assistant Professor, Western Atlantic University School of Medicine

Greta Sokoloff, PhD, 2011-2012.

- Current: Research Scientist, University of Iowa

Baishali Ray, PhD, 2006-2007

Yossi Rathner, PhD, 2006-2007

- Current: Senior Lecturer, University of Melbourne

Gonzalo Viana di Prisco, M.D., Ph.D., 2005-2006

- Current: Assistant Research Professor, Indiana University School of Medicine

## OTHER CONTRIBUTIONS TO INSTRUCTIONAL PROGRAMS

### **Comprehensive Exam Committees**

Amy Korthank (1995), Greta Sokoloff (1998), Joy Kreider (1998), Shujing Xu (2000), D. Nicholson (2000), Jatin Vaidya (2001), Angela Grippo (2001), Sean Lewis (2001), Karl Karlsson (2002), Adele Seelke (2003), Imelda Pasley (2004), Michael Morris (2004), Ethan Mohns (2005), Damon Ng (2005), Andy Gall (2006), Amy Jo Marcano-Reik (2006), Dan Brooks (2007), William Todd (2008), Aaron Buss (2009), Ryan Opheim (2009), Marcus Galle (2009), Jeremy Duncan (Biology, 2009), Mary Goldsberry (2010), Adam Steinmetz (2011, chair), Alex Tiriac (2012), Brandt Uitermarkt (2013), Stephen Brzycky (2013, chair), Victória Müller Ewald (Neuroscience, 2016), Sean Farley (2016), Carlos Del Rio-Bermudez (2016), Benton Purnell (Neuroscience, 2017), Kelle Nett (Neuroscience, 2018), Emily Walsh (Neuroscience, 2019), Zipeng Kev You (Blumberg, 2022), Valentine Soto (Neuroscience, 2023).

### **M.A. Committee Service**

M. Henry (Johnson, 1993), M. Cicha (Johnson, 1993), J. Gagliardi (Wasserman, 1994), J. Xu (Johnson, 1995), Edison Perdomo (Johnson, 1996).

### **Ph.D. Committee Service**

Kim Kirkpatrick-Steger (Wasserman, 1995), Jennifer Thomas (Wasserman, 1995), Y. Moon (Gormezano, 1995), A. Eisenberg (Markovsky, Sociology, 2000), Lynn Niefeld (Gerkin, Education, 2000), Edison Perdomo (Johnson, 2000), Greta Sokoloff (Blumberg, 2001), Joy Kreider (Blumberg, 2003), Dan Nicholson (Freeman, 2003), Gale Kleven (Robinson, 2005), Michele Brumley (Robinson, 2005), Karl Karlsson (Blumberg, 2005), Andrea Frank (Wasserman, 2007), Adele Seelke (Blumberg, 2007), Hunter Halverson (Freeman, 2008), Valerie Mendez-Gallardo (Robinson, 2011), Mark Lobas (Weiner, Neuroscience), Jeremy Duncan (Fritsch, Biology), Adam Steinmetz (Freeman, 2013), Seth Hurley (Johnson, 2015), Mary Goldsberry (Freeman, 2015), Carlos Del Rio-Bermudez (2016), Eric Emmons (Narayanan, Neuroscience, 2016), Caitlin Cosme (LaLumiere, 2016), Victória Augusta Müller Ewald (LaLumiere, Neuroscience, 2020), Benton Purnell (Buchanan, Neuroscience, 2020), Sean Farley (Freeman, 2021), Jessica Lewis (Parker, 2022), Matthew Broschard (Freeman, 2022), Stuti Gupta (Freeman, 2022), Ryan Glanz (Blumberg, 2022), Zipeng Kev You (Blumberg, 2023), Yutong Wang (Abel, Neuroscience, 2023), Emily Walsh (Abel, Neuroscience, 2023).

### **Research Advisory Committees (RAC) and Other Advising**

Greta Sokoloff (Blumberg), Joy Kreider (Blumberg), Penney Nichols-Whitehead (Plumert), David Medina (Wasserman), Brenda Donaghy (Gormezano), Maura Stansfield (Robinson), Dan Nicholson (Freeman), Gale Kleven (Robinson), Sean Lewis (Blumberg), Michele Brumley (Robinson), Andrea Frank (Wasserman), Karl Karlsson (Blumberg), Adele Seelke (Blumberg), Ethan Mohns (Blumberg), Chi Wing Ng (Poremba), Amy Jo Marcano (Robinson), Jeffrey Anderson (Blumberg), Andrew Gall (Blumberg), Daniel Brooks (Wasserman), William Todd (Blumberg), Valerie Mendez-Gallardo (Robinson), Katie Devine (Robinson), Jang Jin Kim (Lee), Yongsang Jo (Lee), Mary Levillain (Freeman), Seth Hurley (Johnson), Alexandre Tiriac (Blumberg), Xin Huang (Neuroscience Graduate

Program), Brandt Uitermarkt (Blumberg), Joshua Richmond (Radley), Caitlin Cosme (Lalumiere), Sean Farley (Freeman), Justin Reber (Tranel), Mathew Broschard (Freeman), Ryan Glanz (Blumberg), Zipeng You (Blumberg), Gonzalo Quinones (Baran), Midha Ahmad (Blumberg), Taylor Christiansen (Blumberg).

### **Undergraduate Honors Committees**

C. Novak (Johnson, 1993), S. Ulrich (Wasserman, 1993), J. Tremmel (Christensen, 1994), C. Betti (Wasserman, 1994), T. Mueller (Blumberg, 1995), Carol Bunten (Blumberg, 1995), S. Pertzborn (Robinson, 1995), Beth Ann Beenken (Blumberg, 1996), Don Peterson (Robinson, 1996). Catherine Kosinski (Blumberg, 1997), Sarah Karlen (Blumberg, 1999), Lisa Kreber (Blumberg, 1999), Tim Pleskac (Blumberg, 2000), K. Bennett (Robinson, 2000), O. Bailey (Robinson, 2000), E. Johnson (Blumberg, 2003), Jessica Middlemis-Brown (Blumberg, 2005), Alex Fanning (Blumberg, 2013), Alex Yonk (Blumberg, 2016).

### **Undergraduate Honors Supervised**

Thomas Mueller (1995); Carol Bunten (1995; Medical School, University of Iowa); Beth Ann Beenken (1996; Medical School, University of Iowa); Catherine Kosinski (1997; Graduate School, University of Illinois, Chicago); Sarah J. Karlen (1999; Graduate School, UC-Davis); Lisa Kreber (1999; Graduate School, University of Colorado); Timothy Pleskac (2000; Graduate School, University of Maryland); Elizabeth A. Boline (2001; Graduate School, Finch Health Sciences University); Eric D. Johnson (2003); Jessica E. Middlemis-Brown (2005; Graduate School, University of Michigan); Alexander Fanning (2013; Graduate School, University of Texas); Alex Yonk (2016; Graduate School, Rutgers University).

### **Undergraduates Supervised in the Laboratory**

Matthew Stolba, Donald Peterson, Robert Hoover, Colin MacMurray, Carol Bunten, Wayne Lance, Tom Mueller, Kristi Kelly, Greta Sokoloff, Nancy Beach, Mary Lou Schneider, Robert Legislador, Tim Hunsicker, Beth Ann Beenken, Catherine Kosinski, Gregory Garner (SROP), Everett Nixon (SREP), Sarah Karlen\*, Nigel Kopp, Lisa Kreber, Megan Adams, Jeremy Bertsch, Jayson Eiberg, Elizabeth Boline, Tara Goldader, Necole Streeper (IBA), Eric Johnson, Jessica Middlemis-Brown\*†, Lastascia Granger, Erin Nelson, Cassandra Coleman#, James Gibson (IBA), Colorado Reed, Lauren Jones, James Willey, Jordan Williams, Ashlynn Gerth (IBA), Alexander Fanning#, Ben Peterson, Sheela Hussey, Nicholas Sattler (IBA), Josie Delgado (IBA), Breanne Peterson, Alex Yonk, Erin Halstead, Katherine von Fosson, Lester Moy, Anya Egense, Zipeng You, Rikki Laser+ (IBA), Asia Banks (SROP), Meredith Hickerson, Haley Laughlin, Elizabeth Janey#, Laura Evans, Grant Hurt, Juliana Start, Ellie Moon, Orlando Hernandez, Alexia Lynn, Victory Obielodan (Science Alliance), Karen Kawala (LSAMP IINSPIRE), Daylan Carney, Lydia Carr, Becky Yu, Chani Parrott, Hayley Chappell, Abby McLeod, Abby Myroth, Khushi Mehta.

\* Recipient of the Collegiate Scholar Award

† Recipient of the Robbie Prize (Biological Sciences)

# Recipient of Iowa Center for Research by Undergraduates (ICRU) Fellowship

+ Recipient of ICRU's Excellence in Undergraduate Research Award, Honors at Iowa Scholar Award.

### **Iowa Sciences Academy Trainees**

Necole Streeper, James Gibson, Ashlynn Gerth, Josie Delgado, Nicholas Sattler, Rikki Laser, Alexia Lynn, Abby Myroth.

## SERVICE

### DEPARTMENT

Chair, Department of Psychological and Brain Sciences, 2017-present.  
Member, Faculty Search Committee, Learning & Neuroplasticity, 2017-2018.  
Chair, Faculty Search Committee, Developmental Science, 2016-2017.  
Departmental Reorganization Committee, 2015.  
Faculty Search Committee, Joint hire in Psychology and Neurology, 2014-2015.  
Faculty Advisory Committee, 2014-2017 (3-year elected term).  
Strategic Communications Committee, 2013-2014.  
Chair, Promotion and Tenure Committee for Prof. Larissa Samuelson, 2013.  
Faculty Search Committee, Department of Psychology (BCN), 2004-2005, 2009-2010.  
Committee for Departmental Self-Study, 2000-2002.  
Departmental "Web Czar," which involved reorganizing, rewriting, and updating the department's web pages, 1999-2002.  
Renovation Planning Committee: 1998-2003.  
Departmental Colloquium Committee, 1998-2002.  
Training Area Coordinator (Behavioral and Cognitive Neuroscience), 1996-2002.  
Chair of BCN faculty recruiting committee, 1996-1997, 1999-2000.  
Committee on Graduate Studies, 1996-2002.  
Chair, Animal Care and Use Committee, 1999.  
Organized and chaired four "Good-to-Great" meetings, Summer, 1999.  
Ad-Hoc Graduate Student Recruiting Committee, 1995-1996.  
Endowment Committee, 1994-1995.  
Professional Concerns Committee, 1994-1995.  
Faculty Advisory Committee, 1994-1997 (3-year elected term).  
Committee on Undergraduate Studies, 1993-1994.

### COLLEGE

Acting DEO for expedited tenure case of Eric Hunter, Department of Communication Sciences and Disorders, 2023.  
Elected member, CLAS Executive Committee, Fall 2022-2025.  
Member, Science Stipends Subcommittee, 2021.  
Co-Chair, CLAS Budget Committee, Fall 2020-Spring 2022.  
DEO Advisory Group, Representative for Natural Sciences and Math, Fall 2020-Spring 2022.  
Member, Search Committee for CLAS Research Support Manager (Pre-Award Support for PBS, HHP, and CSD), 2020-2021.

CLAS Policy Review Committee, 2019-2020.

Named Chairs and Professorships Ad Hoc Committee, 2018-2021.

Director, The DeLTA Center, University of Iowa, 2016-2017.

Promotion and Tenure Committee, 2012-2015.

Executive Board, DeLTA Center, 2011-2019.

Interim Director, DeLTA Center, July-December 2010.

Named Chairs and Professorships Ad Hoc Committee, 2009-2012.

Student Appeals Committee, 2005-2006.

Promotion review committee, School of Social Work, 2003-2004.

Elected to Faculty Assembly, 2003-2006

Chair, Dean's Task Force for the Promotion of Excellence in the College of Liberal Arts and Sciences, 2002.

Internal review committee of the Department of Anthropology, Fall 2001.

Faculty Evaluation Committee for Semester Assignments, Fall 1998.

#### UNIVERSITY

CLAS representative on Graduate Council, 2016-2017.

Search Committee for Director of Iowa Neuroscience Institute, 2014-2016.

Faculty Senate, 2014-2017.

Principles of Scholarly Integrity (650:270/604) Faculty Facilitator, Graduate College, 2012-2013.

Provost Search Committee, 2010-2011.

Neurosensory Genetics of Aging faculty search committee (cluster hire), Department of Biology, 2010-2011, 2011-2012.

Admissions Committee, Neuroscience Graduate Program: 2010-2011, 2011-2012.

Executive Committee, Neuroscience Graduate Program: 2000-2002.

Curriculum Committee, Neuroscience Graduate Program: 1997-1999; Summer, 2000-2001.

Biosciences Advisory Council, Office of the Vice-President for Research: 1997-1999.

Curriculum and Comprehensives Committee, Neuroscience Graduate Program: 1996-1997.

Admissions Committee, Neuroscience Graduate Program: 1993-1994; 1994-1995.

#### PROFESSION

##### **Professional Societies and Conferences**

Member, Task Force to plan content for a new Basics of Sleep Guide, Sleep Research Society, 2021-2022.

Publication Policy Committee, Sleep Research Society, 2016-2019.

Conference organizer, Winter Animal Behavior Conference, Steamboat, Colorado, January 14-21, 2012.

President, International Society for Developmental Psychobiology (ISDP), 2007-2008.

Executive Committee, International Society for Developmental Psychobiology (ISDP), 2006-

2009.  
 American Psychological Association/Bureau of Scientific Affairs (APA/BSA) liaison to the Society for Neuroscience, 2005-2007.  
 Program Committee (Division 6), American Psychological Association, 2005-2007 (Chair, 2005-2006).  
 Member, Committee on Animal Research and Ethics (CARE), American Psychological Association, 2002-2005 (Chair, 2005).  
 Board Member, International Society for Developmental Psychobiology, 1998-2002.  
 Co-organizer of the annual Winter Animal Behavior Conference, Jackson, Wyoming, January 2001.  
 Invited participant, American Psychological Association's (APA) 3rd annual Science Leadership Conference (SciLC), Adventures in Advocacy: Training the Civic Scientist, October 13-15, 2007.

### Journal Editorial Positions

Reviewing Editor, *Journal of Neuroscience*, December 2022-present.  
 Co-Editor (with Dima Amso) of a special issue of *Developmental Psychobiology* to mark its 50<sup>th</sup> anniversary, 2017-2019.  
 Editorial Board, *The American Psychologist*, 2016-2020.  
 Editor-in-Chief, *Behavioral Neuroscience*, 2008-2014.  
 Associate Editor, *Archives of Scientific Psychology*, 2012-2015.  
 Co-Editor (with John Spencer and David Shenk) of a collection of articles entitled “How we develop—Developmental systems and the emergence of complex behaviors” for Wiley’s WIREs series, 2014-2016.  
 Consulting Editor, *Behavioral Neuroscience*, 2007, 2014-present.  
 Co-editor with Nancy Dess of (and co-author of the introduction for) a special section entitled “Speaking up, speaking out: Views on advocating for our science.” *International Journal of Comparative Psychology*, 20: 1-24, 2007.  
 Associate Editor, *Behavioral Neuroscience*, 2001-2007.  
 Editorial Board, *Developmental Psychobiology*, 1997-present.

### Journal Reviewing

Ad hoc reviewer for:

*American Journal of Physiology*  
*American Psychologist*  
*Animal Behaviour*  
*Behavioral & Brain Sciences*  
*Behavioral Neuroscience*  
*Behaviour*  
*Behavioural Brain Research*  
*Biological Psychiatry*  
*Biological Reviews*  
*Brain Research*  
*Brain Structure and Function*  
*Canadian Journal of Physiology and Pharmacology*  
*Cell Reports*  
*Cerebral Cortex*  
*Child Development*

*Child Development Perspectives*  
*Current Biology*  
*Developmental Psychobiology*  
*Developmental Psychology*  
*Developmental Reviews*  
*eLife*  
*eNeuro*  
*Epilepsia*  
*European Journal of Pharmacology*  
*Frontiers in Human Neuroscience*  
*Frontiers in Neurology*  
*Infant Behavior and Development*  
*Journal of Comparative Psychology*  
*Journal of Experimental Biology*  
*Journal of Neuroscience*  
*Nature Communications*  
*Neural Plasticity*

*Neuron*  
*Neuroscience and Biobehavioral*  
*Reviews*  
*Neuroscience Letters*  
*Physiology & Behavior*  
*PLoS ONE*  
*Proceedings of the National Academy of*  
*Sciences*  
*Progress in Neurobiology*  
*Psychological Bulletin*

*Psychological Review*  
*Psychonomic Bulletin & Review*  
*Seminars in Cell and Developmental*  
*Biology*  
*Sleep*  
*Sleep Medicine*  
*Trends in Neurosciences*  
*Trends in Cognitive Sciences*

## **Grant Reviewing**

Phase I reviewer of applications for NIH Director's Pioneer Award, January 2022.  
Ad Hoc member, Biobehavioral Regulation, Learning, and Ethology (BRLE), October 2017.  
Ad Hoc member, Neurobiology of Learning and Memory (LAM), NIH, June 2017.  
Member, NIH Special Emphasis Panel, ZRG1 IFCN-Z (02), February 2016.  
Member, NIH Special Emphasis Panel, ZRG1 IFCN-Z (02), September 2013.  
Panel member, Spring 2013 Preliminary Proposals Review Panel in the Neural Systems Cluster, Division of Integrative Organismal Systems, NSF, March 11-13, 2013.  
Mail reviewer, Pathway to Independence (K99) program, NIH, July 2011, February 2012.  
Member, Special Emphasis Panel for evaluation of K18 awards through OppNet, BBBP-L, NIH, June 2010.  
Ad Hoc Member, Neurobiology of Circadian Rhythm and Sleep (IFCN-D 3), NIH, March 2007  
Citizens United for Research in Epilepsy (CURE), Member of Scientific Review Board, 2004-2005.  
Ad Hoc Member, Biobehavioral and Behavioral Processes-1 (BBBP-1), NIH, June 2002, June 2003, October 2005.  
Member of grant review panel, "Animal models of SIDS" RFA, National Institute of Child Health and Human Development, August 1991.

## **External Promotion Reviews**

Department of Psychiatry and Human Behavior, Alpert Medical School of Brown University  
Department of Psychiatry, Perelman School of Medicine, University of Pennsylvania  
Department of Molecular, Cellular, and Developmental Biology, University of Michigan  
Department of Pediatrics, Columbia University Medical School  
Department of Cell and Systems Biology, University of Toronto  
Department of Psychology, Princeton University  
Department of Psychology, University of Texas  
Department of Psychology, Cornell University  
Department of Neurology, Medical College of Wisconsin  
Department of Psychological Sciences, Purdue University (twice)  
Department of Psychology, Indiana University  
Department of Psychology, University of California at Davis  
Department of Education, Rutgers University  
Department of Psychology, University of Tennessee

### **Textbook Reviews**

Rosenzweig, M. R., Breedlove, S. M., & Leiman, A. L. *Biological Psychology, Second Edition*, Sinauer Associates, Inc.

### **External Department Reviews**

Department of Psychology, The Ohio State University, external reviewer, September 9-11, 2018.

Department of Psychology, University of Massachusetts at Boston, evaluation of readiness for a Ph.D. program, August 2010.

Department of Psychology, University of Nebraska at Omaha, February 1999.

### **External Member/Examiner for Doctoral Dissertation**

External referee and consultant, Max Planck Institute for Ornithology, Seewiesen, Germany, 2018-2022 (Candidate: Gianina Ungurean; Mentor: Niels Rattenborg).

Graduate Program in Neuroscience, University of British Columbia, March 2013 (Candidate: David McVea; Mentor: Timothy Murphy).

### **Miscellaneous**

External Assessor for the Faculty Search Committee, Faculty of Biological and Environmental Sciences, University of Helsinki, 2022.

Member, committee to review nominees for the APA Early Career Award in Animal Learning and Behavior, Comparative, 2021.

Committee member, Five-year review of Lane Strathearn, Department of Pediatrics, University of Iowa Carver College of Medicine, 2019.

Member, Search Committee to identify editor of *Behavioral Neuroscience*, 2018-2019.

Member, committee to review nominees for the APA Early Career Award in Behavioral and Cognitive Neuroscience, 2016.

Member, Eleanor Maccoby Book Award Selection Committee, APA Division 7, 2016.

Internal Advisory Board, SIDS Program Project Grant, Harvard Medical School and Children's Hospital Boston, Dec. 9, 2011.

### **COMMUNITY AND OUTREACH**

Invited guest for one-hour [interview](#) on Wisconsin Public Radio, November 20, 2023.

Invited talk, Oaknoll Retirement Residence, October 17, 2023.

Our research featured in an article in [The New Yorker](#) entitled "What are dreams for?", August 31, 2023.

Interviewed for an article in [Medscape](#) on the riddle of REM sleep, June 5, 2023.

Guest speaker, University of Iowa Retirees Association, March 1, 2023.

Interviewed about animal instincts on an episode ("[Basic Instinct](#)") of the Unexplainable podcast on Vox, December 7, 2022.

Interviewed about sleep and dreams for [The Atlantic](#), August 25, 2022.

Interviewed about "sleeping" jumping spiders on NPR's [All Things Considered](#), August 17, 2022.

Featured scientist on a documentary about sleep ("Aux frontières du sommeil") produced in France by Martange and broadcasted on Canal+ on June 8, 2022.

Featured guest on the podcast, [PsychMic](#), September 2021.

Featured scientist in Episode 5 (Sleep) of the Netflix documentary, [Babies](#), 2020. (One-third of the one-hour episode was devoted to work in my lab.)

Invited speaker, Secular Humanist Group, Iowa City, September 18, 2018.

Invited speaker, Secular Humanist Group, Iowa City, February 21, 2017.

Invited speaker, Secular Students at Iowa, February 2, 2016.

Evolution and Intelligent Design, Trinity Episcopal Church, Iowa City, February 28, 2010.

Co-organizer of the 2<sup>nd</sup> Annual Iowa City Darwin Day Celebration, February 15-16, 2008.

Invited speaker, Secular Humanist Group, Iowa City, January 31, 2006.

One of four participants in a panel discussion on Intelligent Design sponsored by the UI Freethinkers, October 19, 2005.

One of several authors "auctioned off" for the Iowa City Public Library's "Celebrating Iowa Authors Annual Fundraiser," May 1, 2005.