

CURRICULUM VITAE

BARBARA A. SORG

Chair, R.S. Dow Neurobiology
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Education:

- B.S. 1981 Ball State University, Muncie, Indiana (Biology)
Ph.D. 1987 University of Maryland, College Park, Maryland (Biochemistry)

Professional Experience:

- 1981-1985 Research Assistant and Teaching Assistant: Department of Chemistry and Biochemistry, University of Maryland, College Park, MD
1985-1987 Research Assistant: Neuropsychiatric Institute, University of California at Los Angeles, Los Angeles, CA
1987-1988 Postdoctoral Fellow: Program in Genetics and Cell Biology, Washington State University (WSU), Pullman, WA
1988-1990 Research Associate: Department of Psychology, WSU, Pullman, WA
1990-1998 Research Assistant Professor: Department of Veterinary and Comparative Anatomy, Pharmacology and Physiology (VCAPP), WSU, Pullman, WA
1998-1999 Assistant Professor, Tenure-Track: Department of VCAPP, WSU, Pullman, WA
1999-2004 Associate Professor: Department of VCAPP, WSU, Pullman, WA
1999-2003 Interim Associate Director and Interim Director, WSU Alcohol and Drug Abuse Program, Pullman, WA
2003-2014 Director, WSU Alcohol and Drug Abuse Program, Pullman, WA
2004-2019 Professor, Department of VCAPP (currently Integrative Physiology and Neuroscience; IPN), WSU, Pullman, WA
2011-2019 Co-Director, WSU Translational Addiction Research Center (TARC)
2018-2019 Adjunct faculty, Legacy Research Institute, Portland, OR
2019-present Chair, Dow Neurobiology, Legacy Research Institute, Portland, OR

- 2019-present Adjunct professor, IPN, WSU
- 2019-present Adjunct professor, Department of Behavioral Neuroscience and Department of Chemical Physiology and Biochemistry, Oregon Health & Science University, Portland, OR

Research Grants:

Funded- Extramural

<u>DATE</u>		<u>AMOUNT</u> (TOTAL DIRECT)
08/92-08/94	(PI) <i>Molecular Mechanisms of Cocaine Sensitization.</i> NIH NIDA (Grant RO3 DA 07827).	\$ 97,122
06/93-06/98	(PI) <i>Stress and Role of Prefrontal Cortex in Sensitization.</i> NIH NIDA (Grant R29 DA 08212).	\$ 343,312
01/95-01/96	(PI) <i>Development of an Animal Model for Multiple Chemical Sensitivity.</i> Wallace Genetic Foundation.	\$ 46,930
01/96-01/97	(PI) <i>Role of Stress and the Amygdala in an Animal Model for Multiple Chemical Sensitivity.</i> Wallace Genetic Foundation.	\$ 39,250
09/98-08/01	(PI) <i>Role of Stress in Animal Model for Chemical Intolerance</i> NIH NIEHS (Grant R01 ES09135)	\$ 340,971
02/99-01/03	(PI) <i>Cortical Regulation of Sensitization.</i> NIH NIDA (Grant R01 DA 11787)	\$ 481,938
07/99-6/00	(PI) <i>Effects of Repeated Formaldehyde on Sleep</i> Environmental Sensitivities Research Institute	\$ 9,840
Conference Grant	(PI) <i>Role of Neural Plasticity in Chemical Intolerance</i> NIH NIEHS (R13)	\$ 10,000
Conference Grant	(PI) <i>Role of Neural Plasticity in Chemical Intolerance</i> (for 2000) Wallace Research Foundation	\$ 35,000
04/01-1/03	(PI) Supplemental to: <i>Cortical Regulation of Sensitization</i> for Christopher Sanchez, M.S. student NIH NIDA Research supplement for underrepresented Minorities	\$ 49,370
10/01-9/03	(PI) <i>Cocaine and Extracellular Matrix</i> NIH NIDA (Grant R21 DA 14915)	\$ 200,000
08/02-07/07	(PI) <i>Animal Model for Chemical Intolerance</i> NIH NIEHS (R01 ES 09135 renewal)	\$ 750,000

08/06-07/08	(PI) <i>Cocaine, Electroconvulsive Seizure and Neural Plasticity</i> NIH NIDA (R21 DA020125)	\$ 401,360 (direct + ICR)
09/07-08/12	(Co-I—Heiko Jansen, WSU, PI) <i>Circadian modulation of drug-seeking behavior</i> NIH NIDA (1R01DA023202)	\$1,659,715 (direct + ICR)
08/11-09/13	(PI) <i>Matrix metalloproteinases and cocaine</i> NIH NIDA (R21DA030647)	\$ 275,000
06/12-05/17	(PI) <i>Extracellular matrix, cocaine, and memory</i> NIH NIDA (R01DA033404-01)	\$1,000,000
04/16-03/22-NCE	(PI) (Co-PI Travis Brown, University Wyoming) <i>Perineuronal nets and cocaine-associated memories</i> NIH NIDA (R01 DA040965-01A1)	\$1,976,843 (direct + ICR)
04/18-06/23	(Co-I) (PI Jonathan Wisor, WSU Spokane) <i>Sleep deprivation elevates, and sleep alleviates, oxidative stress in the brain</i> NIH NINDS (R01 NS078498-05)	\$1,883,160 (direct + ICR)
09/19-08/22-NCE	(PI) <i>Identifying prefrontal cortex neural ensembles in cocaine-associated memories</i> NIH R21 (DA047121) Cutting Edge Basic Research Award (CEBRA) (direct + ICR)	\$420,750
03/23-02/27	(PI) <i>Cocaine, parvalbumin, and perineuronal nets</i> NIH R01 (DA55645) (6 th percentile ranking) (direct + ICR)	\$3,562,010

NIH grants: Sponsor or Co-sponsor

07/07-06/08	(Mentor) (Pre-doctoral Fellowship for Travis E. Brown) <i>Role of Matrix Metalloproteinases in Drug Relapse</i> NIH NRSA (F31 DA023729)	\$ 25,300
07/10-06/13	(Co-Mentor) (F31 DA028020 Pre-doctoral Fellowship for Brian R. Lee) <i>Neurocircuitry plasticity after cocaine seeking</i> NIH/NRSA	\$ 103,655
03/11-02/16	(Co-Mentor) (PI Yanhua Huang) <i>Regulation of nucleus accumbens neurons by sleep deprivation</i> NIH K99/R00 (DA029565-01)	\$ 784,584

07/18-06/23	(Mentor) (PI Postdoc Jordan Blacktop) <i>Role of Lateral Hypothalamic Area Perineuronal Nets in the Reinstatement of Cocaine-Seeking Behavior</i> NIH K99/R00 (DA045082)	\$ 963,288 (direct + ICR)
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Funded-Intramural

07/90-07/91	(PI) <i>Cocaine and Stress-Induced Changes in Rat Brain Dopamine</i> WSU-Alcohol and Drug Abuse Research Program	\$ 14,393
07/91-07/92	(PI) <i>Molecular Mechanisms of Cocaine-Induced Sensitization in Brain Dopaminergic Systems.</i> WSU-Alcohol and Drug Abuse Research Program	\$ 16,872
01/01-5/03	(PI) <i>Effect of Electroconvulsive Seizure on Relapse to Cocaine-Seeking Behavior in Rats</i> WSU Alcohol and Drug Abuse Research Program	\$ 25,000
07/03-12/04	(Co-I—Heiko Jansen, WSU, PI) <i>Role of the Circadian Pacemaker in Cocaine-addicted Relapse</i> WSU Alcohol and Drug Abuse Research Program	\$ 24,983
03/05-09/06	(Mentor) to Travis Brown-Graduate Student Support Fellowship <i>Cocaine Reinstatement and Brain Extracellular Matrix</i> WSU Alcohol and Drug Abuse Research Program	\$ 12,000
01/09-11/10	(PI) <i>Reconsolidation and Disruption of Cocaine-associated Memories</i> WSU Alcohol and Drug Abuse Research Program	\$ 35,000
07/10	(Co-PI—Heiko Jansen, WSU, PI) Equipment grant WSU Alcohol and Drug Abuse Research Program	\$ 33,778
03/12	(PI) Equipment grant WSU Alcohol and Drug Abuse Research Program	\$ 11,700
01/14-06/15	(PI) <i>Adenosine: Linking Cocaine Addiction to Sleep Abnormalities</i> WSU Alcohol and Drug Abuse Research Program	\$ 24,434
06/14-09/14	(Mentor) to Megan Slaker-Graduate Student Support Fellowship <i>RNA Interference to Investigate the Role of Perineuronal Nets in Cocaine-seeking Behavior</i> WSU Alcohol and Drug Abuse Research Program	\$ 10,566
07/15-01/17	(Mentor) to Dr. Jordan M. Blacktop, Postdoctoral Fellowship <i>Role of lateral hypothalamic area perineuronal nets in cocaine self-administration</i> WSU Alcohol and Drug Abuse Research Program (124777)	\$ 15,000

07/16-01/18	(Mentor) to Dr. John Harkness, Postdoctoral Fellowship <i>Investigation of single gene knockdown-induced perineuronal net plasticity for therapeutic potential in cocaine-seeking behavior</i> WSU Alcohol and Drug Abuse Research Program (128334)	\$ 15,000
07/18-01/20	(PI) with Co-PI Dale Fortin <i>Targeting the Degradation of Perineuronal Nets</i>	\$ 30,000
07/19-12/19	(Mentor) to Angela Gonzalez, Ph.D. student <i>Investigation of retrieval-extinction parameters using a variable ratio schedule during cocaine self-administration</i> (135212)	\$ 13,207
2001-present	(Mentor) Undergraduate grants (Mentor) of 9 individuals total for semester-long or summer-long projects WSU Alcohol and Drug Abuse Research Program (\$2,000-\$6,000 each)	
04/19-03/20	(Co-I) with PI Shaban Demirel <i>EEG activity patterns for memory updating</i> Legacy Research Institute Kiesow Collaboration	\$ 5,000
04/22-03/24	(PI) <i>Impact of FDA-approved ketamine for reducing relapse in an animal model for cocaine addiction</i> Good Samaritan Foundation of Legacy Health	\$278,030
04/22-03/24	(PI) <i>Non-invasive rhythmic brain stimulation to reduce relapse in a cocaine model of addiction</i> Good Samaritan Foundation of Legacy Health	\$406,516
04/22-03/25	(PI) <i>Impact of FDA-approved ketamine for reducing relapse in an animal model for cocaine addiction</i> Good Samaritan Foundation of Legacy Health	\$623,505

Invited Presentations:

1. Symposium on Relationship of Sensitization to Animal Models of Psychosis; 17th Congress of Collegium Internationale Neuro-Psychopharmacologicum; Kyoto, Japan. 1990.
2. Symposium on Animal Models of Psychosis; C.I.N.P. Satellite Symposium on Trends in Schizophrenia and Mood Disorders Research; Kyoto, Japan. 1990.
3. Department of Biological Sciences, University of Idaho; Moscow, ID. 1990.
4. National Conference of Chemical Sensitivity and Low Chemical Exposure; Baltimore, MD. 1994.
5. Laboratoire de Psychobiologie des Comportements Adaptatifs; INSERM, Universite de Bordeaux; Bordeaux, France. 1994.

6. Workshop on Animal Models of Nervous System Susceptibility to Indoor Air Contaminants; U.S. EPA; Chapel Hill, NC. 1994.
7. Workshop on Multiple Chemical Sensitivity; Health Effects Institute; Cambridge, MA. 1995.
8. Conference on Risk Assessment Issues for Sensitive Human Populations; Dayton, OH. 1995.
9. Workshop on Experimental Approaches to Chemical Sensitivity; Environmental and Occupational Health Sciences Institute; Princeton, NJ. 1995.
10. 37th Occupational Health and Preventative Medicine Workshop; U.S. Navy; Virginia Beach, VA. 1996.
11. Department of Biological Sciences, University of Idaho; Moscow, ID. 1996.
12. NIDA meeting: "Stress, the CRF System and Drugs of Abuse", Washington, D.C. 1998.
13. Department of Medicine-Respiratory Sciences, University of Arizona Health Sciences Center, Tucson, AZ. 1998.
14. American Chemical Society, Symposium on Multiple Chemical Sensitivity, Boston, MA. 1998.
15. University of Bergen, Symposium on Sensitization/Somatization, Bergen, Norway. 1998.
16. Center for Disease Control, The Health Impact of Chemical Exposures During the Gulf War: A Research Planning Conference, Atlanta, 1999.
17. Washington State Weed Association, Yakima, WA. 1999.
18. Environmental Sensitivities Research Institute Conference, Herndon, VA. 1999.
19. Role of Neural Plasticity in Chemical Intolerance, New York Academy of Sciences Conference, (Principle Co-organizer), New York, NY. 2000.
20. National Institute on Drug Abuse weekly seminar series, Baltimore, MD. 2000.
21. Department of Pharmacology and Therapy, LSU Medical Center, Shreveport, LA. 2001.
22. University of Tennessee Health Science Center, Department of Pharmacology, Memphis, TN. 2003.
23. National Institutes of Environmental Health Sciences: Addiction and Chemical Intolerance: A Shared Etiology? (Meeting Co-organizer), North Carolina. 2005.
24. National Institute on Drug Abuse: Frontiers in Addiction Research (Chair): Reconsolidation of Memory: A New Approach to Treat Drug Addiction? Washington, D.C. 2005.
25. Medical University of South Carolina, Department of Neurosciences, Charleston, SC. 2008.
26. University of Chicago, Department of Psychiatry and Behavioral Neuroscience, Chicago, IL. 2011.
27. Washington State University – Spokane Riverpoint Campus, Spokane, WA. 2011.
28. Oregon Health & Science University, Behavioral Neuroscience, Portland, OR, 2012.
29. University of Wyoming, School of Pharmacy, Laramie, WY, 2012.
30. Legacy Research Institute, Portland, OR, 2013
31. Pavlovian Society, Portland, OR, 2015

32. Macquarie University Human Sciences Perspectives Workshop, Sydney, Australia, 2015
33. University of New South Wales Inter-University Meeting (Keynote Speaker) Sydney, Australia, 2015
34. American College of Neuropsychopharmacology (ACNP), Hollywood, FL, 2015.
35. Washington State University, Sleep and Performance Research Center, Spokane, 2016
36. Oregon Chapter, Society for Neuroscience, Portland, OR, 2016
37. National Institute on Drug Abuse NIDA-NIAAA Neuroscience Consortium Cutting-Edge Seminar, Bethesda, MD, 2016
38. Netherlands Institute of Neuroscience, Amsterdam, Netherlands, 2016
39. Jaume I University, Castellon, Spain, 2016
40. John van Geest Centre for Brain Repair (James Fawcett special group meeting with PIs from UK and Spain), University of Cambridge, Cambridge, UK, 2016
41. Labroots Neuroscience Virtual Conference, March, 2017
42. WSU Spokane College of Medicine Retreat, Spokane, WA, May, 2017 - internal
43. Research Society on Alcoholism, Denver, CO, June, 2017
44. WSU Translational Addiction Research Center, September, Vancouver, WA, 2017 - internal
45. Legacy Research Institute, Portland, OR, October, 2017
46. Controlling Neuronal Plasticity, Prague, Czech Republic, December, 2018
47. University of Wyoming, Laramie, WY, May, 2019
48. Oregon Health & Science University, Portland, OR, September, 2019
49. West Virginia University Health Sciences Center, Morgantown, WV, October, 2019
50. Research Society on Alcoholism, June, 2021
51. Oregon Health & Science University, Portland, OR, October, 2021
52. University of Mississippi Medical Center, Jackson, MS, October, 2022
53. International Conference on Learning and Memory, Huntington Beach, CA, April, 2023
54. College on Problems of Drug Dependence, Denver, CO, June, 2023

Principal Organizer or Co-organizer:

New York Academy of Sciences-sponsored meeting entitled "Role of Neural Plasticity in Chemical Intolerance". June 16-19, 2000, Rockefeller University, NY. (Co-organizer, Chair)

National Institute of Environmental Health Sciences: "Addiction and Chemical Intolerance: A Shared Etiology?" September, 2005, North Carolina (Co-organizer)

National Institute on Drug Abuse: Frontiers in Addiction Research: "Reconsolidation of Memory: A New Approach to Treat Drug Addiction?" November, 2005 (Organizer and Chair)

Society for Neuroscience Mini-symposium "Casting a Wide Net: Role of Perineuronal Nets in Neural Plasticity" October, 2016 (Organizer and Chair)

Winter Conference on Brain Panel “Net Gain and Loss: Perineuronal Nets, Plasticity, and Drugs of Abuse” January, 2018 (Organizer and Chair)

Society for Neuroscience Nanosymposium “Circuitry and Cell-Type Specific Neurophysiology of Addiction” November, 2018 (Co-chair)

College on Problems of Drug Dependence Symposium “Circadian and Sleep Factors in Substance Use Disorder: Role of the Extracellular Matrix”, June, 2022 (Organizer and Chair)

International Conference on Learning and Memory “Role of interneurons in learning and memory: Relevance to psychiatric disorders”, April, 2023 (Organizer and Chair)

Papers (Refereed): (1/23: citations: 6,646; H-index 44)

1. **Sorg, B.A.**, D. Agrawal, H.C. Agrawal and A.T. Campagnoni (1986). Expression of myelin proteolipid protein and basic protein in normal and dysmyelinating mutant mice. *J. Neurochem.* 46: 379-387.
2. **Sorg, B.A.**, M.M. Smith and A.T. Campagnoni (1987). Developmental expression of the myelin proteolipid protein and basic protein mRNAs in normal and dysmyelinating mutant mice. *J. Neurochem.* 49: 1146-1154.
3. Campagnoni, A.T., **B.A. Sorg**, H.J. Roth, K. Kronquist, S.L. Newman, K. Kitamura, C.W. Campagnoni and B.F. Crandall (1987). Expression of myelin protein genes in the developing brain. *J. Physiol.* (Paris, France) 82: 229-238.
4. **Sorg, B.A.**, N.S. Magnuson and R. Reeves (1989). Effect of dexamethasone on the expression of interleukin-2 in a mouse T cell line. *Intl. J. Biochem.* 21: 961-970.
5. **Sorg, B.A.** and P.W. Kalivas (1991). Effects of cocaine and footshock stress on extracellular dopamine levels in the ventral striatum. *Brain Res.* 559: 29-36.
6. See, R.E., **B.A. Sorg**, M.A. Chapman and P.W. Kalivas (1991). *In vivo* assessment of dopamine release and metabolism in the ventral striatum of awake rats following administration of dopamine D1 and D2 receptor agonists and antagonists. *Neuropharmacology* 30: 1269-1274.
7. **Sorg, B.A.** and P. Whitney (1992). Effect of trait anxiety and situational stress on working memory capacity. *J. Res. Personality* 26: 235-241.
8. **Sorg, B.A.** (1992). Mesocorticolimbic dopamine systems: Cross-sensitization between stress and cocaine. *Ann. NY Acad. Sci.* 654: 136-144.
9. **Sorg B.A.** and P.W. Kalivas (1993). Effects of cocaine and footshock stress on extracellular dopamine levels in the medial prefrontal cortex. *Neuroscience* 5: 695-703.
10. **Sorg, B.A.**, S.-Y. Chen and P.W. Kalivas (1993). Time course of tyrosine hydroxylase expression following behavioral sensitization to cocaine. *J. Pharmacol. Exp. Ther.* 266(1):424-430.
11. Kalivas, P.W., M.S. Hooks and **B.A. Sorg** (1993). The pharmacology and neural circuitry involved of sensitization to psychostimulants. *Behav. Pharmacol.* 4: 315-334.
12. Hooks, M.S., **B.A. Sorg** and P.W. Kalivas (1994). The relationship between mRNA levels and the locomotor response to novelty. *Brain Res.* 663: 312-316.

13. **Sorg, B.A.**, M.S. Hooks and P.W. Kalivas (1994). Neuroanatomy and neurochemical mechanisms of time-dependent sensitization. *Toxicol. Indust. Health* 10: 369-386.
14. **Sorg, B.A.** and C. Ulibarri (1995). Application of a protein synthesis inhibitor into the ventral tegmental area but not the nucleus accumbens, prevents behavioral sensitization to cocaine. *Synapse* 20: 217-224.
15. **Sorg, B.A.**, B.J.M. Guminski, M.S. Hooks and P.W. Kalivas (1995). Cocaine alters glutamic acid decarboxylase mRNA differentially in the nucleus accumbens core and shell. *Mol. Brain Res.* 29: 381-386.
16. Prasad, B.M., **B.A. Sorg**, C. Ulibarri and P.W. Kalivas (1995). Sensitization to stress and psychostimulants: Involvement of dopamine transmission versus the HPA axis. *Ann. NY Acad. Sci.* 771: 617-625.
17. Prasad, B.M., C. Ulibarri, P.W. Kalivas and **B.A. Sorg** (1996). Effect of adrenalectomy on the initiation and expression of cocaine-induced sensitization. *Psychopharmacol.* 125: 265-273.
18. See, R.E., A.M. Lynch and **B.A. Sorg** (1996). Subchronic administration of clozapine, but not haloperidol and metoclopramide, decreases dopamine D2 receptor mRNA levels in the nucleus accumbens and caudate putamen in rats. *Neuroscience* 72: 99-104.
19. **Sorg, B.A.**, J.R. Willis, T.C. Nowatka, C. Ulibarri, R.E. See, and H.H. Westberg (1996). Proposed animal neurosensitization model for MCS in studies with formaldehyde. *Toxicology* 111:135-145.
20. **Sorg, B.A.**, and B.M. Prasad (1997). Potential role of stress and sensitization in the development and expression of multiple chemical sensitivity. *Env. Health Persp. S2* 105:539-547.
21. Bell, I.R., J. Rossi III, M.E. Gilbert, G. Kobal, L.A. Morrow, D.B. Newlin, **B.A. Sorg** and R.W. Wood (1997). Testing the neural sensitization and kindling hypothesis for illness from low levels of environmental chemicals. *Env. Health Persp. S2* 105:539-547.
22. **Sorg, B.A.**, D.L. Davidson, P.W. Kalivas, and B.M. Prasad (1997). Repeated cocaine alters cocaine-induced increase in extracellular dopamine levels in the medial prefrontal cortex. *J. Pharm. Exp. Ther.* 281:54-61.
23. Meiergerd, S.M., J.O. Schenk, and **B.A. Sorg** (1997). Repeated cocaine and stress increase dopamine clearance in the rat medial prefrontal cortex. *Brain Res.* 773:203-207.
24. Kalivas, PW, RC Pierce, J Cornish and **BA Sorg** (1998). A role for sensitization in craving and relapse in cocaine addiction. *J Psychopharmacol* 12:49-53.
25. Prasad, B.M., C. Ulibarri, and **B.A. Sorg** (1998). Stress-induced cross-sensitization to cocaine: Effect of adrenalectomy and corticosterone after short- and long-term withdrawal. *Psychopharmacol.* 136:24-33.
26. **Sorg, B.A.**, J.R. Willis, R.E. See, B. Hopkins, and H.H. Westberg (1998). Repeated low-level formaldehyde exposure produces cross-sensitization to cocaine: Possible relevance to chemical sensitivity in humans. *Neuropsychopharmacol.* 18:385-394.
27. Prasad, B.M., T. Hochstatter and **B.A. Sorg** (1999). Expression of cocaine sensitization: regulation by the medial prefrontal cortex. *Neuroscience* 88: 765-774.

28. **Sorg, BA**, and T Hochstatter. (1999). Behavioral sensitization after repeated formaldehyde exposure in rats. *Toxicol. Indust. Health* 15:346-55.
29. **Sorg, B.A.** (1999). Multiple chemical sensitivity: potential role for neural sensitization. *Crit. Rev. Neurobiol.* 13:283-316 (invited review).
30. Wayment, H.K., J.O. Schenk, and **B.A. Sorg.** (2001). Characterization of extracellular dopamine clearance in the medial prefrontal cortex: role of monoamine uptake and monoamine oxidase inhibition. *J. Neurosci.* 21:35-44
31. **Sorg, BA**, N. Li and W.-R. Wu. (2001). Dopamine D1 receptor activation in the medial prefrontal cortex prevents the expression of cocaine sensitization. *J. Pharmacol. Exp. Ther.* 297:501-508.
32. **Sorg, B.A.**, T.M. Bailie, M.L. Tschirgi, N.Li and W.-R. Wu. (2001). Exposure to repeated low-level formaldehyde in rats increases basal corticosterone levels and enhances the corticosterone response to subsequent formaldehyde. *Brain Res.* 898:314-320.
33. Sanchez, C.J. and **B.A. Sorg.** (2001) Conditioned fear stimuli reinstate cocaine-induced conditioned place preference. *Brain Res.* 908:86-92.
34. **Sorg, B.A.**, M.L. Tschirgi, S. Swindell, L. Chen and J. Fang (2001). Repeated formaldehyde effects in an animal model for multiple chemical sensitivity. *Ann. NY Acad. Sci.* 933:57-67.
35. **Sorg, B.A.** and D.B. Newlin., (2002) Sensitization as a mechanism for multiple chemical sensitivity: relationship to evolutionary game theory. *Scand. J. Psychol.* 43:161-167.
36. Wu, W.-R., N. Li and **B.A. Sorg.** (2002) Regulation of medial prefrontal cortex dopamine response to acute and repeated cocaine: effect of alpha-amino-3-hydroxy-5-methylisoxazole-4-propionate/kainate receptors. *Neurosci.* 114:507-516.
37. **Sorg, BA**, DL Davidson, T Hochstatter and PW Sylvester (2002) Repeated cocaine decreases the avoidance response to a novel aversive stimulus. *Psychopharmacol.* 163:9-19.
38. Sanchez, CJ, TM Bailie, W-R Wu, N Li and **BA Sorg** (2003) Manipulation of D1-like receptor activation in the rat medial prefrontal cortex alters stress- and cocaine-induced reinstatement of conditioned place preference behavior. *Neurosci.* 119:497-505.
39. Wu, WR, N Li and **BA Sorg** (2003) Prolonged effects of repeated cocaine on medial prefrontal cortex dopamine response to cocaine and natural predatory odor challenge in rats. *Brain Res* 991:232-239.
40. **Sorg, BA**, S. Swindell and ML Tschirgi. (2004) Repeated low-level formaldehyde exposure produces enhanced fear conditioning to odor in male, but not female, rats. *Brain Res.* 1008:11-19.
41. **Sorg, BA**, N Li and WR Wu. (2004) Activation of dopamine D1 receptors in the medial prefrontal cortex produces bidirectional effects on cocaine-induced locomotor activity in rats: effects of repeated stress *Neurosci.* 127:187-196.
42. Sleipness, EP, **BA Sorg** and HT Jansen. (2005) Time of day alters long-term sensitization to cocaine in rats. *Brain Res.* 1065:132-137. PMID: 16309631
43. Cloutier, S, MR Forquer and **BA Sorg.** (2006) Low level lindane exposure alters extinction of conditioned fear in rats. *Toxicol.* 217:147-154.

44. Carter K, K Lukowiak, JO Schenk and **BA Sorg**. (2006) Repeated cocaine effects on learning, memory and extinction in the pond snail *Lymnaea stagnalis*. *J. Exp. Biol.* 209: 4273-4282. PMID: 17050842
45. Sleipness EP, **BA Sorg** and HT Jansen. (2007) Diurnal differences in dopamine transporter and tyrosine hydroxylase levels in rat brain: dependence on the suprachiasmatic nucleus. *Brain Res.* 1129: 34-42. PMID: 17156761
46. Brown TE, MR Forquer, DL Cocking, HT Jansen, JW Harding and **BA Sorg**. (2007) Role of matrix metalloproteinases in the acquisition and reconsolidation of cocaine-induced conditioned place preference. *Learn. Mem.* 14: 214-223. PMCID: PMC1838561
47. Sleipness EP, **BA Sorg**, Jansen HT. (2007) Contribution of the suprachiasmatic nucleus to day:night variation in cocaine-seeking behavior. *Physiol Behav* 91:523-530. PMID: 17573077
48. Huang YH, Lin Y, Brown TE, Han MH, Saal DB, Neve RL, Zukin RS, **BA Sorg**, Nestler EJ, Malenka RC, Dong Y. (2008) CREB modulates the functional output of nucleus accumbens neurons: a critical role of N-methyl-D-aspartate glutamate receptor (NMDA) receptors. *J Biol Chem* 283:2751-2760. PMCID: PMC2535571
49. Bjorklund NL, **BA Sorg**, Schenk JO. (2008) Neuronal dopamine transporter activity, density and methamphetamine inhibition are differentially altered in the nucleus accumbens and striatum with no changes in glycosylation in rats behaviorally sensitized to methamphetamine. *Synapse* 62:736-745. PMID: 18651643
50. Sleipness EP, Jansen HT, Schenk JO, **BA Sorg**. (2008) Time-of-day differences in dopamine clearance in the rat medial prefrontal cortex and nucleus accumbens. *Synapse* 62:877-885. PMCID: PMC3031299
51. Brown TE, Forquer MR, Harding JW, Wright JW, **BA Sorg**. (2008) Increase in matrix metalloproteinase-9 levels in the rat medial prefrontal cortex after cocaine reinstatement of conditioned place preference. *Synapse* 62:886-889. PMID: 18792988
52. Brown TE, Lee BR, **BA Sorg**. (2008) The NMDA antagonist MK-801 disrupts reconsolidation of a cocaine-associated memory or conditioned place preference but not for self-administration in rats. *Learn Mem* 15:857-865. PMCID: PMC2632842
53. Brown TE, AR Wilson, DL Cocking, **BA Sorg**. (2009) Inhibition of matrix metalloproteinase activity disrupts reconsolidation but not consolidation of a fear memory. *Neurobiol Learn Mem* 91:66-72. PMCID: PMC2719776
54. Mu P, T Fuchs, DB Saal, **BA Sorg**, Y Dong, J Panksepp. (2009) Repeated cocaine induces sensitization of ultrasonic vocalization in rats. *Neurosci Lett* 453:31-35. PMCID: PMC2680749
55. Wright JW, PC Meighan, TE Brown, RV Wiediger, **BA Sorg**, JW Harding. (2009) Habituation-induced neural plasticity in the hippocampus and prefrontal cortex mediated by MMP-3. *Behav Brain Res* 203:27-34.
56. Huang YH, Y Lin, P Mu, BR Lee, TE Brown, G Wayman, H Marie, W Liu, Z Yan, **BA Sorg**, OM Schlüter, RS Zukin, Y Dong. (2009) In vivo cocaine experience generates silent synapses *Neuron* 63:40-47. PMCID: PMC2721479
57. Mu P, J Moyer, M Ishikawa, Y Zhang, J Panksepp, **BA Sorg**, O Schlüter, Y Dong. (2010) Exposure to cocaine dynamically regulates the intrinsic membrane excitability of nucleus accumbens neurons. *J Neurosci* 30:3689-3699. PMCID: PMC2853189

58. Kennedy, CD, SW Houmes, KL Wyrick, SM Kammerzell, K Lukowiak, **BA Sorg** (2010) Methamphetamine enhances memory of operantly-conditioned respiratory behavior in the snail *Lymnaea stagnalis*. *J Exp Biol* 213:2055-2065. PMID: 20511519
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60. **Sorg, BA**, G Stark, A Sergeeva and HT Jansen (2011) Photoperiodic suppression of drug reinstatement. *Neuroscience* 176:284-295. PMCID: PMC3040258
61. Brown TE, B Lee, P Mu, D Ferguson, D Dietz, Y Ohnishi, Y Lin, A Suska, M Ishikawa, Y Huang, H-W Shen, PW Kalivas, **BA Sorg**, RS Zukin, E Nestler, Y Dong, O Schlüter (2011) A silent synapse-based mechanism for cocaine-induced locomotor sensitization. *J Neurosci* 31:8163-8174. PMCID: PMC3286116
62. Browning JR, DA Browning, AO Maxwell, Y Dong, HT Jansen, J Panksepp, **BA Sorg** (2011) Positive affective vocalizations during cocaine and sucrose self-administration: A model for spontaneous drug desire in rats *Neuropharmacol* 61: 268-275. PMCID: PMC3115664
63. **Sorg, BA** (2012) Reconsolidation of drug memories. *Neurosci Biobehav Rev.* 36: 1400-1417. PMCID: PMC3526670
64. Jansen, HT, A Sergeeva, G Stark, **BA Sorg** (2012). Circadian discrimination of reward: evidence for simultaneous yet separable food- and drug-entrained rhythms in the rat. *Chronobiol Intl* 29:454-468. PMID: 22475541
65. Sanchez, EJ, RP Hayes, BN Webb, AK Subramanian, MS Nissen, JT Barr, JP Jones, EA Shelden, **BA Sorg**, M Fill, JO Schenk, C Kang (2013). Potential role of cardiac calsequestrin in the lethal arrhythmic effects of cocaine. *Drug Alc Depend* 133:344-351. PMCID: PMC4097383
66. Browning, JR, HT Jansen, and **BA Sorg** (2014). Inactivation of the paraventricular thalamus abolishes the expression of cocaine conditioned place preference in rats. *Drug Alc Depend* 134: 387-390. PMCID: PMC3910376
67. Lukowiak K, B Heckler, TE Bennett, EK Schriener, K Wyrick, C Jewett, RP Todd, and **BA Sorg** (2014) Enhanced memory persistence is blocked by a DNA methyltransferase inhibitor in the snail *Lymnaea stagnalis*. *J Exp Biol* 217:2920-2929. PMID: 24902747
68. **Sorg BA**, RP Todd, M Slaker and L Churchill (2015) Anisomycin in the medial prefrontal cortex reduces reconsolidation of cocaine-associated memories in the rat self-administration model. *Neuropharmacol* 92:25-33. PMCID: PMC4346388
69. Slaker M, L Churchill, RP Todd, JM Blacktop, DG Zuloaga, J Raber, RA Darling, TE Brown, and **BA Sorg** (2015) Removal of perineuronal nets in the medial prefrontal cortex impairs the acquisition and reconsolidation of cocaine-conditioned place preference. *J Neurosci* 35:4190-4202. PMCID: PMC4355195
70. Slaker, M, JM Blacktop, and **BA Sorg** (2016) Caught in the net: Perineuronal nets and addiction. *Neural Plasticity* (Invited review) PMC4745418
71. Zhang, X, VM Chiu, RP Todd, **BA Sorg**, and HH Hill (2016) Neuronal metabolomics by ion mobility mass spectrometry in cocaine self-administering rats after early and late withdrawal. *Analyt Bioanalyt Chem* 408:4233-4245 PMID: 27108279.

72. **Sorg, BA**, S Berretta, JM Blacktop, JW Fawcett, H Kitagawa, JCF Kwok and M Miquel. (2016) Casting a wide net: role of perineuronal nets in neural plasticity. *J Neurosci* 36:11459-11468. PMID: 27911749.
73. Slaker, ML, J Harkness and **BA Sorg** (2016) A standardized and automated method of perineuronal net analysis using *Wisteria floribunda* agglutinin staining intensity. *IBRO Reports* 1:54-60. PMID: 28713865
74. Slaker, ML, J Barnes, **BA Sorg** and JW Grimm (2016) Impact of environmental enrichment on perineuronal nets in the prefrontal cortex following early and late abstinence from sucrose self-administration in rats. *PLOS ONE* 11:e0168256. PMID: 27977779
75. Blacktop, JM, RP Todd and **BA Sorg** (2017) Role of perineuronal nets in the anterior dorsal lateral hypothalamic area in the acquisition of cocaine-induced conditioned place preference and self-administration. *Neuropharmacol*, 118:124-136.
76. Dingess PM, Harkness JH, Slaker M, **Sorg BA**, and Brown TE (2018) Consumption of a high fat diet alters perineuronal nets in the prefrontal cortex. *Neural Plasticity*, PMID: 29849552.
77. Blacktop, JM and **BA Sorg** (2019) Perineuronal nets in the lateral hypothalamus area regulate cue-induced reinstatement of cocaine seeking behavior. *Neuropsychopharmacol* PMID: 30258113.
78. Slaker, ML, ET Jorgensen, DM Hegarty, X Liu, Y Kong, F Zhang, RJ Linhardt, TE Brown, SA Aicher and **BA Sorg**. (2018) Cocaine exposure modulates perineuronal nets and synaptic excitability of fast-spiking interneurons in the medial prefrontal cortex. *eNeuro* 0221-18.2018. PMID: 30294670.
79. Su, W., S. Matsumoto, **B. Sorg**, and L.S. Sherman (2019) Distinct roles for hyaluronan in neural stem cell niches and perineuronal nets. *Matrix Biology* 78-79:272-283. PMCID: PMC6068007.
80. Harkness, JH, PN Bushana, RP Todd, WC Clegern, **BA Sorg** and JP Wisor (2019) Sleep disruption elevates oxidative stress in parvalbumin-positive cells of the rat cerebral cortex. *Sleep* PMID: 30371896.
81. Hegarty, DM, AE Gonzalez, JH Harkness, **BA Sorg** and SA Aicher (2019) Quantitative anatomical approaches to examining plasticity in neural circuits. *Microsc Microanal.* 25 (Suppl 2) 1124-1125. PMID: 36644160.
82. Dingess, PM, Z. Zhaojie, **BA Sorg**, CR Ferrario, and TE Brown (2020) Sex- and region-specific effects of high fat diet on PNNs in obesity susceptible rats. *Physiol Behav* 222:112963. PMID: 32416158.
83. Jorgenson, EJ, AE Gonzalez, JH Harkness, DM Hegarty, A Thakar, DJ Burchi, JA Aadland, SA Aicher, **BA Sorg** and TE Brown (2021) Cocaine memory reactivation induces functional adaptations within parvalbumin interneurons in the rat medial prefrontal cortex. *Addiction Biol* (e12947) PMID: 32750200.
84. Reyes, K-A, PS Kudva, B Heckler, AE Gonzalez, and **BA Sorg** (2021) Rat ultrasonic vocalization as an index of memory. *Neurosci Lett* 741:135458 PMCID: PMC7750257.
85. Harkness, JH, AE Gonzalez, PN Bushana, ET Jorgensen, DM Hegarty, AA Di Nardo, A Prochiantz, JP Wisor, SA Aicher, TE Brown, and **BA Sorg**. (2021) Diurnal changes in

- perineuronal nets and parvalbumin neurons in the rat medial prefrontal cortex. *Brain Structure & Function* 226:1135 PMID: PMC8086998.
86. Wingert, JC, and **BA Sorg** (2021) Impact of perineuronal nets on electrophysiology of parvalbumin interneurons, principal neurons, and brain oscillations: A review. *Front Synaptic Neurosci* 13:673210. PMID: 34040511.
 87. Fawcett, JW, M Fyhn, P Jendelova, JCF Kwok, J Ruzicka, and **BA Sorg** (2022) The extracellular matrix and perineuronal nets in memory. *Mol Psychiatry* Jun 27 PMID: 35760878.
 88. Brown, TE, and **BA Sorg** (2023) Net gain and loss: Influence of natural rewards and drugs of abuse on perineuronal nets. *Neuropsychopharmacol* PMID: 35568740.
 89. Gonzalez, AE, ET Jorgensen, JD Ramos, JH Harkness, JA Aadland, TE Brown and **BA Sorg** (2022) Impact of perineuronal net removal in the rat medial prefrontal cortex on parvalbumin interneurons after reinstatement of cocaine conditioned place preference. *Front Cell Neurosci*. July 28 PMID: 9366391.

Chapters and Other Publications:

1. Macklin, W.B., M.V. Gardinier, P.L. Deininger, **B.A. Sorg** and C.W. Campagnoni (1987). Myelin proteolipid protein expression in normal and jimpy mice. In: *A Multidisciplinary Approach to Myelin Diseases*. Plenum Press, New York, NY, pp. 29-46.
2. **Sorg, B.A.**, N.S. Magnuson and R. Reeves (1989). Regulation of interleukin-2 expression by dexamethasone in a mouse T cell line. In: *Molecular Biology of Stress*. S. Breznitz and O. Zinder, eds. Alan R. Liss, New York, NY, pp. 215-224.
3. Steketee, J.D., **B.A. Sorg** and P.W. Kalivas (1992). The role of the nucleus accumbens in sensitization to drugs of abuse. *Prog. Neuro-Psychopharmacol. Biol. Psychiat.* 16: 237-246.
4. **Sorg, B.A.** and J.D. Steketee (1992). Mechanisms of cocaine-induced sensitization. *Prog. Neuro-Psychopharm. Biol. Psychiat.* 16: 1003-1012.
5. **Sorg, B.A.** and P.W. Kalivas (1993). Behavioral sensitization to stress and psychostimulants: Role of dopamine and excitatory amino acids in the mesocorticolimbic system. *Seminars Neurosci.* 5: 343-350.
6. **Sorg, B.A.** and P.W. Kalivas (1995). Stress and neuronal sensitization. In: *Neurobiological and Clinical Consequences of Stress: From Normal Adaptation to PTSD*. M.J. Friedman, D.S. Charney and A.Y. Deutch, eds. Raven Press, pp. 83-103.
7. Kalivas, P.W. and **B.A. Sorg** (1996). Role of neurotransmitters in the ventral tegmental area in stress-induced activation of dopamine transmission. *NIAAA Monogram.* 29:139-144.
8. Kalivas, P.W. and **B.A. Sorg** (1996). Animal models of psychosis reveal involvement of hippocampal-cortico-striatal-mesencephalic circuitry. In: *Dopamine Disease States*. R.J. Beninger, T. Palomo and T. Archer, eds. CYM Press, Madrid, Spain. pp. 463-475.
9. Kalivas, P.W., R.C. Pierce and **B.A. Sorg** (1999). A role for sensitization in psychostimulant-induced paranoia and psychosis. In: *Interactive Monaminergic Disorders*. RJ Beninger, T Palomo, and T Archer, eds. CYM Press: Madrid, Spain; pp. 453-460

10. Keegan, R.D., L. Shuang, **B.A. Sorg** and R.M. Quock (2003) The role of nitric oxide in locomotor regulation in mice and its interaction with nitrous oxide. *Proc. West. Pharmacol. Soc.* 46:114-115.
11. **Sorg, B.A.**, T.M. Bailie and N. Li (2011) Dopamine receptor stimulation or blockade in the medial prefrontal cortex suppresses extinction of a conditioned fear response in rats. In: *Psychology of Fear: New Research (Psychology of Emotions, Motivations and Actions)* Allen D. Gervaise, Ed., Elsevier, pp 83-94. (Invited chapter).
12. **Sorg, B.A.** and T.E. Brown (2012) Matrix metalloproteinases, memory consolidation, reconsolidation, and drugs of abuse. In: *Matrix Metalloproteinases: Biology, Functions and Clinical Implications* (Oshiro, N and Miyagi, E., eds). Nova Publishers, pp. 127-150. (Invited chapter).
13. **Sorg, B.A.** (2013) Memory reconsolidation and drugs of abuse. In: *Biological Research on Addiction: Comprehensive Addictive Behaviors and Disorders, Vol 2* (Miller, P.M., ed) pp. 323-332 (Invited chapter).
14. Hegarty, D.M., A.E. Gonzalez, J.H. Harkness, **B.A. Sorg**, and S.Aicher (2019) Quantitative anatomical approaches to examining plasticity in neural circuits. *Microsc. Microanal.* 25 (Supple 2) doi: 10.1017/S1431927619006354.

Books Edited:

1. **Sorg, B.A.** and Bell, I.R. (2001). Role of Neural Plasticity in Chemical Intolerance. *Annals of the New York Academy of Sciences* 933:329 pp. (Conducted 100% editing for this volume)

Other Publications

1. **Sorg, B.A.** (1999) Multiple chemical sensitivities. *Agrichemical and Environmental News* 155:1-3.
2. **Sorg, B.A.** (1999) Multiple chemical sensitivities: understanding the phenomenon. *Washington State Weed Association*
3. Brain Facts: (2016) *Putting the brakes on brain changes* <http://www.brainfacts.org/brain-basics/cell-communication/articles/2016/image-of-the-week-putting-the-brakes-on-brain-changes-122016/>

Abstracts: (approximately 8-10/year; majority are Society for Neuroscience Abstracts; others: College on Problems of Drug Dependence, Winter Brain Conference, misc.)

U.S. Patent (10603462) with John Harkness, Ryan Todd: *Trolley for the Automation of Sleep Disruption*

Grant Reviewer

2023	Natural Sciences and Engineering Research Council of Canada (NSERC)
2021	NIH-Ad hoc; NIDA Career Development and Education, ZDA1 SKM-D
2020	NIH-Ad hoc: SEP (ZRG1 IFCN-C)
2020	Biotechnology and Biological Sciences Research Council, UK (BBSRC)

2020-2022 NIH BPN (Blueprint Neurotherapeutics) – Ad hoc; ZNS1 SRB-T
2020 University of Washington Diabetes Research Center
2019 Neurological Foundation of New Zealand
2019 Netherlands Organisation for Scientific Research
2018 French Agence Nationale de la Recherche
2016, 2017 NIH Cutting-Edge Basic Research Awards (CEBRA; ZDA1 JXR-D 12 S)
(ad hoc)
2016, 2018 Foundation for Polish Science
2016 WSU-Vancouver Mini-grants
2015, 2019 NIH BPN (Blueprint Neurotherapeutics)—Ad hoc; ZNS1 SRB-T
2013, 2017 Medical Research Council (UK)—Ad hoc
2013 NIH BRLE—Ad hoc
2013, 2018 Israel Science Foundation—Ad hoc
2013-2019 NIH NMB Study Section, **Standing Member**
2012 NIH-Ad hoc: NMB and ZRG1 IFCN-L
2011 NSF—Ad hoc
2011 NIH—Ad hoc: NIDA ZDA1 GXM-A; NIDA B/START; ZDA1-JXR-D; ZDA1
JXR-D – program projects
2006-2009 NIH -- Ad hoc: NIDA-L, ZDA1 RXL-E and NMB (2008), ZDA1 GMX-A and
ZDA1 GMX-A (2009) ZDA
1999-2005 NIH (NIDA) **Standing Member**, Medications Development (SEP Chair, 2002)
1999 NIH (NIDA) Medications Development Special Emphasis Panel
1997-2004 U.S. Army Medical Research and Materiel Command, Ad-hoc
1998-1999 Department of Veterans Affairs
1993-present Washington State University Alcohol and Drug Abuse Program
1997-1998 University of Idaho EPSCoR Foundation

Editorial Board Member:

2010-present: *Journal of Addiction Research & Therapy*

Ad Hoc Manuscript Reviewer: (approx 12-24 manuscripts/year)

Reviewing Editor for Frontiers in Molecular Neuroscience, Alcoholism Clinical and Experimental Research, Behavioural Brain Research, Biological Psychiatry, BMC Biology; Brain Research, Brain Research Bulletin, Brain Structure and Function, Cell Reports, Drug and Alcohol Dependence, eLIFE, Environmental Health Perspectives, Environmental Research, European Journal of Neuroscience, European Neuropsychopharmacology, Experimental Neurology, Frontiers in Behavioral Neuroscience (and Molecular Neuroscience), Hearing Research, Indian Journal of Medicine, International Journal of Neuropsychopharmacology, International Neuropsychiatric Disease Journal, Journal of Experimental Biology, Journal of Neurochemistry, Journal of Neuroscience, Journal of Psychosomatic Research, Journal of Visualized Experiments, Learning and Memory, Nature Metabolism, Neurobiology of Ageing, Neurobiology of Disease, Neurobiology of Learning and Memory, Neuropsychopharmacology, Neuroscience Letters, Neuroreport, Neuroscience and Biobehavioral Reviews, Neurotoxicology, Proceedings of the National Academy of Sciences; Psychopharmacology, Pharmacology, Biochemistry and Behavior, PLOS One, Radiation Research, Science Advances; Scientific Reports, Toxicology, Translational Psychiatry, Trends in Genetics, Trends in Pharmacological Sciences, Western Journal of Medicine

Honors and Awards:

- 01/01/87-12/31/88 Traineeship: PHS NRSA (Grant #2 T32 A1 07025-7A1); Immunology Training Grant.
- 10/2009 WSU Honor's College Thesis Advisor Award

Scientific Organizations:

- Society for Neuroscience
- Institute of Translational Health Sciences, University of Washington
- College on Problems of Drug Dependence
- Sleep Research Society

Local Groups/Associations

- 1995-1996 Northern Rocky Mountain Chapter - Society for Neuroscience (Treasurer)
- 1997-1998 Northern Rocky Mountain Chapter - Society for Neuroscience (President)
- 2016-present Society for Neuroscience, Oregon Chapter (secretary, 2020)
- 2021 Steve Gleason Institute for Neuroscience, WSU Spokane

Service to Legacy Research Institute

- 2019-present Institutional Animal Care and Use Committee
- 2020 Legacy Research Institute Promotions Committee (Chair)

Service to Oregon Health & Science University

- 2020-2021 Program Advisory Committee, Portland Alcohol Research Center

Service to Washington State University and Community:

Outreach Presentations and Other Activities:

- Alcohol and Drug Abuse—presentation to Health and Wellness Center, Fall, 2000
- WSU Mom's Weekend-presentation on Drugs of Abuse, April, 2002
- Alive Sessions: once/year up through 2009
- Biomedical Science Program 5-year review, Marquette University, Spring, 2008
- Established formal partnership with Legacy Research Institute, Portland, OR, 2015
- Presentation to Legislative Staff Tour (Drug Addiction and Memory), WSU-Vancouver, 2015
- WSU-V Neuroscience promotion, STEM Girls Conference, Camus High School 2016, 2017
- Presentation to *Technology Alliance* “Food for Thought” Series at the *Ranier Club* (Drug Addiction and Memory), Seattle, WA, 2016
- Kiggins Theatre “Science on Tap” (Drug Addiction and Memory), Vancouver, WA, 2016
- Washington State House of Representatives presentation to Commerce and Gaming Committee on marijuana research activities at WSU, Olympia, WA, 2016

- Clinton Street Theatre “Science on Tap” (Drug Addiction and Memory), Portland, OR, 2016
- Alberta Rose Theatre “Science on Tap (Drug Addiction and Memory), Portland, OR, 2016
- Portland Humanists Society (Memory of Drug Addiction), Portland, OR, 2017
- Washington State University Advisory Board (Addiction), Vancouver, WA, 2017
- Washington State Legislative and Congressional Staff (Addiction and Stress), Vancouver, WA 2017
- Portland State University (Perineuronal nets and cocaine memories), Portland, OR, 2019

University Committees at WSU

- 2003-2004 Alcohol and Drug Abuse Proposal Steering Committee
- 2003-2014 Alcohol and Drug Abuse Research Program, **Director** (2003-2014)
- 2011-2019 Translational Addiction Research Center, **Co-director** (2011-2019)
- 2013-2015 Sahlin Award Committee: Research Scholarship & Arts (Chair, 2 years)
- 2015-2018 Graduate School Mentor Committee
- 2014-present Alcohol and Drug Abuse Research Program Advisory Board
- 2021-2023 Portland Alcohol Research Center, external program advisory committee member

Department/College Committees at WSU

- 1996-1999 Animal Resource Unit Committee (Chair, 1998 & 1999)
- 1996-1997 Graduate Student Recruitment Committee (Chair)
- 1996-1998 Graduate Studies Committee (VCAPP)
- 1996 Space Committee (VCAPP)
- 1997-2000 Co-organizer for Brain Awareness activities
- 1997 Program Policy Committee (Neuroscience Program)
- 1997-2001 Graduate Studies Committee (VCAPP)
- 1996-2001 Faculty Mentor, (School of Vet. Med. students)
- 1999-2004 Wegner Hall Vivarium Committee
- 2002 Neuroscience 5-year Planning Committee (Chair)
- 2002-2003 Wegner Hall Vivarium Committee (Chair)
- 2002-2003 Neuroscience Curriculum Committee (undergraduate--Co-chair)
- 2002 Space/Resources Committee
- 2002/2003 Search Committee, Wegner Vivarium
- 2003-2010 CVM Research Committee (Chair '07 and '08)
- 2005 New Faculty Search Committee (Chair)
- 2005 Neuroscience Curriculum Committee (undergraduate)
- 2005-2007 Pharmacology/Toxicology Admissions Committee
- 2006-2007 Graduate Studies Committee
- 2007-2010 Chair's Advisory Committee
- 2007 VCAPP Planning Committee
- 2009/2010 CVM Faculty Executive Committee

2009/2010	Biomedical Sciences Building Design Committee
2009-present	Neuroscience Program Curriculum Committee
2010	New Faculty Search Committee (Chair)
2011-2016	College of Veterinary Medicine Tenure and Promotion Committee
2012	New Faculty Search Committee (IPN)
2013	New Faculty Search Committee (2 positions, IPN)
2012-2013	5-Year Strategic Planning Committee (IPN)
2012-present	Neuroscience Graduate Program Executive Committee (IPN)
2013-2019	Program Leader, Neuroscience, WSU Vancouver (excluding Fall, 2016)

Postdoctoral Fellows

1999-2004	Weiran Wu, M.D., Ph.D. – currently Psychiatrist, University Health System, San Antonio, TX
2014-present	Jordan Blacktop, Ph.D. – recipient of NIH K99 award (2018); currently Assistant Professor, Oregon Institute of Technology
2016-2019	John Harkness, Ph.D. – currently CEO of Rewire.com and recipient of NIH SBIR awards (2019, 2021)

Student Ph.D. Committees

1994	Balakrishna Prasad of Neuroscience (Chair)
1997	Frank Koegler of Neuroscience
1997	Zhiping Cao
1997	Tammy Stobb of Chemistry
1997	Shannon Long of Chemistry
1998	Holly Wayment of Chemistry
1998	Nicole Sanders of Neuroscience
1998	Cynthia Earles of Chemistry
1999	Julie Strattman of Psychology
1999	Jo Anne Alfaro of Chemistry
1999	Eniko Kramer of Psychology
1999	Laura Markowski of Chemistry
2000	Shuang Li (Pharmaceutical Sciences)
2000	Sean Sanders (Neuroscience)
2001	Myung Kim (Chemistry)
2001	Kishor Bugarith (Neuroscience)
2001	Olga Gurkovskaya (Pharmacol/Therap., LSU)
2002	Mike Olsen (Psychology)
2002	Evan Sleipness (Neuroscience) (Co-Chair)
2002	Erin Stoeffel (Psychology)
2003	Starla Meighan (Neuroscience)

- 2003 Trent Volz (Chemistry)
- 2003 Nicole Bjorklund (Chemistry)
- 2006 Pete Meighan (Neuroscience)
- 2004 Travis Brown (Neuroscience) (**Chair**)
- 2005 Sanjib Mukherjee (Neuroscience)
- 2005 Patrick Elias (Pharmaceutical Sciences)
- 2007 Adie Wilson (Neuroscience)
- 2006 Reka Natarajan (Neuroscience)
- 2006 Fan Liao (Neuroscience)
- 2006 Caroline Benoist (Neuroscience)
- 2006 Bhavani Kashyap (U. Idaho, Neuroscience)
- 2008 Brian Lee (Neuroscience) (**Co-chair**)
- 2008 Jenny Browning (Neuroscience) (**Co-chair**)
- 2008 Veronica Chiu (Chemistry)
- 2010 Seth Davis (Psychology)
- 2011 Brad Winters (Neuroscience)
- 2010 Peter Neumann (Neuroscience) (**Co-chair until 2012**)
- 2012 Megan Slaker (Neuroscience) (**Chair**)
- 2012 Melissa Mehalick (Psychology-WSU Vancouver)
- 2013 Phillip Uribe (Neuroscience-WSU Vancouver)
- 2014 Matthew Lambert (School of Biological Sciences-WSU Vancouver)
- 2014 Jessica Higginbotham (Neuroscience-WSU Pullman)
- 2014 Christie Pizzimenti (Behavioral Neuroscience, OHSU)
- 2015 Ram Kandasamy (Neuroscience-WSU Vancouver)
- 2015** Jeff Hoyt (Neuroscience-WSU Vancouver)
- 2016 Rikki Quinn (University of Newcastle, Australia; final PhD thesis only)
- 2017 Maria Carbó Gas (Universitat Jaume I, Spain; final PhD thesis only)
- 2017 Priyanka Bushana (WSU Spokane) (**Co-chair**)
- 2017 Pique Choi (Neuroscience, WSU Pullman)
- 2018** Angela Gonzalez (Neuroscience, WSU Vancouver) (**Chair**)

** Current

Student M.S. Committees

- 1996 Ken Bell of Neuroscience
- 1997 Jeff Stobb of Neuroscience
- 1998 Susan Bale of Zoology
- 1999 Mitch Green of Chemistry
- 2000 Cortney Wright (Chemistry)
- 2000 Christopher Sanchez (Neuroscience, **Chair**)
- 2000 Rick Schumacher (Chemistry)
- 2000 Shannon George (Chemistry)

- 2004 Kathleen Carter (Neuroscience) (**Chair**)
- 2004 Davelle Cocking (Pharmaceutical Sciences, **Chair**)
- 2005 Rick Heckert (Pharmaceutical Sciences)
- 2008 Karen Gerde (Psychology)
- 2012 Derrick Phillips (Neuroscience)

Graduate Student Rotations

- 1999 Lichao Chen (Neuroscience)
- 2000 Shuang Li (Pharmaceutical Sciences)
- 2000 Christopher Sanchez (Neuroscience)
- 2000 Jeff Herman (Pharmaceutical Sciences)
- 2000 Theresa Bjorness (Neuroscience)
- 2002 Evan Sleipness (Neuroscience)
- 2003 Travis Brown (Neuroscience)
- 2003 Kathleen Carter
- 2004 Davelle Cocking (Pharm. Sci.)
- 2005 Karina Villa (Pharm. Sci.)
- 2006 Robert Olson (Neuroscience)
- 2007 Adie Wilson (Neuroscience)
- 2008 Jenny Browning (Neuroscience)
- 2008 Brian Lee (Neuroscience)
- 2008 Stella Feng (Pharm. Sci.)
- 2009 Peter Neumann (Neuroscience)
- 2010 Rong Guo (Neuroscience)
- 2011 Kimberly Honn (Neuroscience)
- 2011 Megan Slaker (Neuroscience)
- 2017 Vanessa Real (Neuroscience)
- 2017 Isis Gil Miravet (visiting PhD student from Universitat Jaume I, Spain for 4 mo)

Undergraduate 495/499 Students

- 2001-2002 Kristi Ilyankoff
- 2001-2002 Elizabeth Ferluga (WSU Alcohol and Drug Abuse award)
- 2002-2003 Jennifer Homan
- 2003 Anastacia Shaver
- 2003-2004 Ryan Barnes (WSU Alcohol and Drug Abuse award)
- 2003 Patrick Hines
- 2004-2005 Rachel Burnham
- 2005-2006 Justine Gullaba
- 2005-2007 Leslie Green (Esparza)FB
- 2006-2007 *Steven Houmes (WSU Alcohol and Drug Abuse Program award)

2008 *Colin Kennedy (WSU Alcohol and Drug Abuse Program award)
2008-2011 *Katie Wyrick (WSU Alcohol and Drug Abuse Program award)
2009-2011 *Tom Bennett (WSU Alcohol and Drug Abuse Program award)
2009-2010 *Sam Kammerzell
2009-2010 Nick Sparks
2009-2011 Laura Curtis
2010-2012 Christopher Cao
2010-2012 Erik Larson
2010-2011 Wesley Millard
2010-2011 Ellen Shriner
2011-2013 *Cynthia Jewett (WSU Pullman)
2012-2014 *Ben Heckler (Portland State University)
2013-2014 Joel Ohrt (WSU Vancouver; WSU Alcohol and Drug Abuse Program award)
2013-2014 Jesse Chiem (University of Portland)
2013-2014 Silas Aho (WSU Vancouver)
2013-2017 *Priya Kudva (WSU Vancouver)
2013-2014 Ellie Ficco (WSU Vancouver)
2013-2014 Kyle Champion (WSU Vancouver)
2014-2016 *Kyrie Reyes (WSU Vancouver; WSU Alcohol and Drug Abuse Program award)
2014-2016 Kelsey O'Neill (WSU Vancouver)
2014-2017 Nathan Allen (WSU Vancouver)
2015-2018 *Angela Gonzalez (WSU Vancouver) - now Graduate Student in the lab
2016-2016 David Choi (WSU Vancouver)
2016-2018 *Jereme Wingert (WSU Vancouver; WSU Alcohol and Drug Abuse Program award) post-bacc in the lab until Fall 2021
2017-2018 Holly D'Andrea (WSU Vancouver)
2018-2020 Ashlynn Dean (WSU Vancouver)
2018-2020 Jonathan Anguiano (WSU Vancouver)
2018-2020 Abigail Gligor (WSU Vancouver)
2019-2020 Blake Marble (WSU Vancouver)
2019-2021 Jordan Kronstad (WSU Vancouver)
2021-2022 Tenzin Nordon (WSU Vancouver)
2021-2022 Roman Cimkovich (Portland State University)
+2022- Brittani Wallsten (Portland State University)
+2023- Jacqueline Minder-Almanza (WSU Vancouver)

+ Current students

* Co-authors on peer-reviewed publication

High School Students

2015 Nicole Lobokov (Camus High School summer project)

2016-2018 Monica Chen (Camus High School; winner of 2017 OregonBio Research Fast Pitch event at OMSI, Portland, OR)

Honor's Thesis Advisor

2001-2003 Elizabeth Ferluga (graduated with distinction)
2003-2004 Ryan Barnes
2003-2004 Amanda Lamp
2008-2009 Colin Kennedy
2009-2010 Sam Kammerzell (graduated with distinction)
2009-2011 Laura Curtis
2013-2015 Ellie Ficco (WSU Vancouver)
2014-2016 Kelsey O'Neill (WSU Vancouver)

TEACHING (contact hours listed)

Graduate

Neuro 520: Functional Neuroscience (\approx 8 students)

25 hr (Fall, 2001)

17 hr (Fall, 2002)

Neuro 540: Neuropharmacology (\approx 10 students)

3 hr (Spring 1995)

6 hr (Spring 1997)

Neuro 540: Special Topics in Neuroscience (5-8 students)

10 hr (Spring 2003--Course Director)

15 hr (Spring 2008--Course Director)

6 hr (Fall 2010)

3 hr (Fall 2012)

1 hr (Fall 2013)

Neuro 592: Research Writing and Seminar (2-9 students)

Meets once/week, 3 hr class time + individual time with students

Course Director (Spring, 2007—2018, excluding Fall 2016)

Pharm/Tox 502: Faculty Research in Pharmacology/Toxicology (\approx 6 students)

1 hr (Fall, 2002)

1 hr (Fall, 2003)

1 hr (Fall, 2005)

Pharm/Tox 506: Principles of Pharmacology (Fall 1999)

4 hr

Psych 579: Stress and Behavior (\approx 10 students)

2 hr (Spring 1995)

VPh/PT 529: Cellular/Molecular Neurobiology (\approx 10 students)

4 hr (Spring 1995)

6 hr (Spring 1996)

3 hr (Spring 1997)

24 hr (Spring 1999)
20 hr (Spring 2000)
15 hr (Spring 2001)
24 hr (Spring 2004)
20 hr (Spring 2005--Course Director)
20 hr (Spring 2006--Course Director)
20 hr (Spring 2007--Course Director)
8 hr (Spring 2008--Course Director)
8 hr (Spring 2009--Course Director)

VPh 555: Cell Physiology (\approx 15 students)

5 hr (Fall, 2000)
5 hr (Fall, 2001)
5 hr (Fall, 2002)

VPh 590: VCAPP Seminar Series

Course director (Fall 2000 and Spring 2001)
Course director (Spring 2003)

NURS 563

One lecture on Addiction (Spring 2013)

Ed Psych 502: Educational Psych (17 students)

One lecture on Memory and the Brain (Fall 2015)

Undergraduate

Neuro 138: Special Topics in Neuroscience (\approx 16-27 students)

Meets once/week for 1 hr
2 hr (Fall, 1999)
2 hr (Spring, 2000)
1 hr (Fall, 2002 – 2010)
Approx. 1/3-1/2 of course organizer (Spring 2014)
Course director since Spring 2015

Biology 210: One lecture on drugs of abuse

Neuro 303: Neurochemistry (undergraduate core course- 3 credit course) (\approx 10 students)

40 hr (Spring, 1998--Course Director)
28 hr (Spring, 1999--Course Director)

Neuro 403: Cellular Neurobiology (\approx 17-35 students)

30 hr (Spring, 2001--Course Director)
27 hr (Fall, 2001--Course Director)
27 hr (Fall, 2002--Course Director)
45 hr (Fall, 2003--Course Director)
35 hr (Fall, 2004--Course Director)
30 hr (Fall, 2005--Course Director)
24 hr (Fall, 2006--Course Director)
15 hr (Fall, 2007-2012--Course Director)
15 hr (Spring, 2013, 2015)

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15 hr (Fall, 2017, 2018)
1 hr (Fall, 2021, 2022)