

PUBLICATIONS (*Italics* denotes student authors)

- McDougall SA, *Roe MJ, Robinson J, Cotter LL, Gonzalez DJ, Gleason, DC, Crawford C.A* (2022). Effects of the serotonin 5-HT_{1B} receptor agonist CP 94253 on the locomotor activity and body temperature of preweanling and adult male and female rats. *European journal of pharmacology*, 926, 175019. <https://doi.org/10.1016/j.ejphar.2022.175019>
- Harmony ZR, Alderson EM, Garcia-Carachure I, Bituin LD, Crawford CA* (2020). Effects of nicotine exposure on oral methamphetamine self-administration, extinction, and drug-primed reinstatement in adolescent male and female rats. *Drug and Alcohol Dependence*, 209:107927. doi:10.1016/j.drugalcdep.2020.107927
- McDougall SA, *Rios JW, Apodaca MG, Park GI, Montejano NR, Taylor JA, Moran AE, Robinson JAM, Baum TJ, Teran A, Crawford CA* (2020). Effects of dopamine and serotonin synthesis inhibitors on the ketamine-, d-amphetamine-, and cocaine-induced locomotor activity of preweanling and adolescent rats: sex differences. *Behavioural Brain Research*, 379:112302. doi:10.1016/j.bbr.2019.112302
- Crawford CA, Moran AE, Baum TJ, Apodaca MG, Montejano NR, Park GI, Gomez V, McDougall SA* (2020). Effects of monoamine depletion on the ketamine-induced locomotor activity of preweanling, adolescent, and adult rats: Sex and age differences. *Behavioral Brain Research*, 379:112267. doi:10.1016/j.bbr.2019.112267
- Crawford CA, Teran A, Ramirez GI, Katz CG, Mohd-Yusof A, Eaton SE, Real V, McDougall SA* (2019). Age-dependent effects of dopamine receptor inactivation on cocaine-induced behaviors in male rats: Evidence of dorsal striatal D2 receptor supersensitivity. *Journal of Neuroscience Research*, 97, 1546–1558.
- McDougall SA, *Park GI, Ramirez GI, Gomez V, Adame BC, Crawford CA* (2019). Sex-dependent changes in ketamine-induced locomotor activity and ketamine pharmacokinetic in preweanling, adolescent, and adult rats. *European Journal of Neuropsychopharmacology*, 29, 740-755.
- Kokash J, Alderson EM, Reinhard SM, Crawford CA, Binder DK, Ethell IM, Razak KA* (2019). Genetic reduction of MMP-9 in the Fmr1 KO mouse partially rescues prepulse inhibition of acoustic startle response. *Brain Research*, 1719, 24-29.
- Kostrzewa RM, Wydra K, Filip M, Crawford CA, McDougall SA, Brown RW, Borroto-Escuela DO, Fuxe K, Gainetdinov RR* (2018). Dopamine D2 receptor supersensitivity as a spectrum of neurotoxicity and status in psychiatric disorders. *Journal of Pharmacology and Experimental Therapeutics*, 366, 519-526.
- McDougall SA, *Apodaca MG, Mohd-Yusof A, Mendez AD, Katz CG, Teran A, Garcia-Carachure I, Quiroz AT, Crawford CA* (2018). Ontogeny of cocaine-induced behaviors and cocaine pharmacokinetics in male and female neonatal, preweanling, and adult rats. *Psychopharmacology*, 235, 1967-1980.

- McDougall SA, Rudberg KN, Veliz A, Dhargalkar JM, Garcia AS, Romero LC, Gonzalez AE, Mohd-Yusof A, Crawford CA (2017). Importance of D1 and D2 receptor stimulation for the induction and expression of cocaine-induced behavioral sensitization in preweanling rats. *Behavioral Brain Research*, 326, 226-236 PMID: [PMC5422209](#)
- Amodeo LR, Greenfield VY, Humphrey DE, Varela V, Pipkin JA, Eaton SE, Johnson JD, Plant CP, Harmony ZR, Wang L, Crawford CA (2015). Effects of acute or repeated paroxetine and fluoxetine treatment on affective behavior in male and female adolescent rats. *Psychopharmacology*, 232, 3515-3528. PMID: PMC4561584
- McDougall SA, Eaton SE, Mohd-Yusof A, Crawford CA (2015) Age-dependent changes in cocaine sensitivity across early ontogeny in male and female rats: possible role of dorsal striatal D2(High) receptors. *Psychopharmacology*, 232, 2287-2301. PMID: PMC4465861
- Pipkin JA, Kaplan GJ, Plant CP, Eaton SE, Gil SM, Zavala AR, Crawford, CA (2014). Nicotine exposure beginning in adolescence enhances the acquisition of methamphetamine self-administration, but not methamphetamine-primed reinstatement in male rats. *Drug and Alcohol Dependence*, 142, 341-344. PMID: PMC4127152
- McDougall SA, Valentine JM, Gonzalez AE, Humphrey DE, Widarma CB, Crawford CA (2014) Behavioral effects of dopamine receptor inactivation during the adolescent period: age-dependent changes in dorsal striatal D2(High) receptors. *Psychopharmacology*, 231, 1637-1647. PMID: PMC3969390
- Der-Ghazarian T, Widarma CB, Gutierrez A, Amodeo LR, Valentine JM, Humphrey DE, Gonzalez AE, Crawford CA, McDougall SA (2014). Behavioral effects of dopamine receptor inactivation in the caudate-putamen of preweanling rats: role of the D2 receptor. *Psychopharmacology*, 231, 651-662. PMID: PMC3946740
- Varela FA, Der-Ghazarian T, Lee RJ, Charntikov S, Crawford CA, McDougall SA (2014). Repeated aripiprazole treatment causes dopamine D2 receptor up-regulation and dopamine supersensitivity in young rats. *Journal of Psychopharmacology*, 28, 376-386.
- Crawford CA, Der-Ghazarian T, Britt CE, Varela FA, Kozanian OO (2013). Novelty-induced conditioned place preference, sucrose preference, and elevated plus maze behavior in adult rats after repeated exposure to methylphenidate during the preweanling period. *Behavioural Brain Research*, 246, 29-35. PMID: PMC3636810.
- McDougall SA, Mohd-Yusof A, Kaplan GJ, Abdulla ZI, Lee RJ, Crawford CA (2013). Postnatal manganese exposure does not alter dopamine autoreceptor sensitivity in adult and adolescent male rats. *European Journal of Pharmacology*, 706, 4-10. PMID: PMC3633626.

- Mittal N, Tan M, Egbuta O, Desai N, Crawford C, Xie CW, Evans C, Walwyn W. (2012) Evidence that behavioral phenotypes of morphine in β -arr2^{-/-} mice are due to the unmasking of JNK signaling. *Neuropsychopharmacology*. 37(8):1953-62. PMID: 22491351; PMCID: PMC3376327.
- Der-Ghazarian T, Gutierrez A, Varela FA, Herbert MS, Amodeo LR, Charntikov S, Crawford CA, McDougall SA (2012) Dopamine receptor inactivation in the caudate-putamen differentially affects the behavior of preweanling and adult rats. *Neuroscience*. 226, 427-40. PMID: 23000622; PubMed Central PMCID: PMC3490053.
- Akopian G, Crawford C, Petzinger G, Jakowec MW, Walsh JP (2012). Brief mitochondrial inhibition causes lasting changes in motor behavior and corticostriatal synaptic physiology in the Fischer 344 rat. *Neuroscience*, 215, 149-155.
- Thiel KJ, Painter MR, Pentkowski NS, Mitroi D, Crawford CA, Neisewander JL (2012). Environmental enrichment counters cocaine abstinence-induced stress and brain reactivity to cocaine cues but fails to prevent the incubation effect. *Addiction Biology*, 17, 365-377.
- Iñiguez SD, Charntikov S, Baella SA, Herbert MS, Bolaños-Guzmán CA, Crawford CA (2012). Post-training cocaine exposure facilitates spatial memory consolidation in C57BL/6 mice. *Hippocampus*, 22, 802-803. PMID 21542053
- Siviy SM, Crawford CA, Akopian G, Walsh JP (2011). Dysfunctional play and dopamine physiology in the Fischer 344 rat. *Behavioural Brain Research*, 220, 294-304. PMID 21335036
- McDougall SA, Der-Ghazarian T, Britt CE, Varela FA, Crawford CA (2011). Postnatal manganese exposure alters the expression of D2L and D2S receptor isoforms: relationship to PKA activity and Akt levels. *Synapse*, 65, 583-591. PMID 21484877
- Crawford CA, Baella SA, Farley CM, Herbert MS, Horn LR, Campbell RH, Zavala AR (2011). Early methylphenidate exposure enhances cocaine self-administration but not cocaine-induced conditioned place preference in young adult rats. *Psychopharmacology*, 213, 43-52. PMID: 20848087
- Crawford CA, Akopian G, Ring J, Jakowec MW, Petzinger GM, Andersen JK, Vittozzi-Wong P, Wang K., Farley CM, Charntikov S, Mitroi D, Beal MF, Chow R, Walsh JP (2011). Acute and long-term response of dopamine nigrostriatal synapses to a single low dose of 3-nitropropionic acid-mediated chemical hypoxia. *Synapse*, 65, 339-350, PMID: 20730800
- Cortez AM, Charntikov S, Der-Ghazarian T, Horn LR, Crawford CA, McDougall SA (2010). Age-dependent effects of kappa-opioid receptor stimulation on cocaine-induced stereotyped behaviors and dopamine overflow in the caudate-putamen: an in vivo microdialysis study. *Neuroscience*, 169, 201-213. PMID: 20435099

- Der-Ghazarian T, Charntikov S, Varela FA, Crawford CA, McDougall SA (2010). Effects of repeated and acute aripiprazole or haloperidol treatment on dopamine synthesis in the dorsal striatum of young rats: comparison to adult rats. *Journal of Neural Transmission*, 117, 573-583. PMID 20372943
- Halladay LR, Iñiguez SD, Furqan F, Previte MC, Chisum AM, Crawford CA (2009). Methylphenidate potentiates morphine-induced antinociception, hyperthermia, and locomotor activity in young rats. *Pharmacology, Biochemistry, and Behavior*, 92, 190-6.
- McDougall SA, Charntikov S, Cortez AM, Amodeo DA, Martinez CE, Crawford CA (2009). Persistence of one-trial cocaine-induced behavioral sensitization in young rats: regional differences in Fos immunoreactivity. *Psychopharmacology*, 203, 617-28.
- Akopian G, Crawford C, Beal F, Cappellett M, Jakowec M, Petzinger G, Gheorghe S, Reichel C, Chow R, Walsh J (2008). Decreased striatal dopamine release underlies increased expression of long-term synaptic potentiation at corticostriatal synapses 24 hours after 3-nitropropionic acid induced chemical hypoxia. *Journal of Neuroscience*, 28, 9585-9597.
- McDougall SA, Reichel CM, Farley CM, Flesher MM, Der-Ghazarian T, Cortez AM, Wacan JJ, Martinez CE, Varela FA, Butt AE, Crawford CA (2008). Postnatal manganese exposure alters dopamine transporter function in adult rats: potential impact on nonassociative and associative processes. *Neuroscience*, 154, 848-860.
- Iñiguez S, Cortez A, Crawford CA, McDougall SA (2008). Effects of aripiprazole and terguride on dopamine synthesis in the dorsal striatum and medial prefrontal cortex of preweanling rats. *Journal of Neural Transmission*, 115, 97-106.
- McDougall SA, Baella SA, Stuebner NM, Halladay LR, Crawford CA (2007). Cocaine-induced behavioral sensitization in preweanling and adult rats: Effects of a single drug-environment pairing. *Psychopharmacology*, 193, 323-32.
- Crawford CA, Villafranca SW, Cyr MC, Farley CM, Reichel CM, Gheorghe SL, Krall CM, McDougall SA (2007). Effects of early methylphenidate exposure on morphine- and sucrose-reinforced behaviors in adult rats: Relationship to dopamine D2 receptors. *Brain Research*, 1139, 245-253.
- Farley CM, Baella SA, Wacan JJ, Crawford CA, McDougall SA (2006). Pre- and postsynaptic actions of a partial D2 receptor agonist in reserpinized young rats: Longevity of agonistic effects. *Brain Research*, 1124, 37-44.
- Reichel CM, Wacan JJ, Farley CM, Stanley BJ, Crawford CA, McDougall SA (2006). Postnatal manganese exposure attenuates cocaine-induced locomotor activity and reduces dopamine transporters in adult male rats. *Neurotoxicology and Teratology*, 28, 323-332.

- Crawford CA, William MT, Kohutec JL, Choi FY, Yoshida ST, McDougall SA, Vorhees, CV (2006). Neonatal 3,4-methylenedioxymethamphetamine (MDMA) exposure alters neuronal protein kinase A activity, serotonin and dopamine content, and [³⁵S]GTPγS binding in adult rats, *Brain Research*, 1077, 178-186.
- Yoshida ST, Baella SA, Stuebner NM, Crawford CA, McDougall SA (2006). Effects of a partial D2-like receptor agonist on striatal dopamine autoreceptor functioning in preweanling rats, *Brain Research*, 1073-1074, 269-275.
- Lit L, Crawford CA (2006). Effects of training paradigms on search dog performance. *Applied Animal Behaviour Science*, 98, 277-292.
- McDougall SA, Reichel CM, Cyr MC, Karper PE, Nazarian A, Crawford CA (2005). Importance of D₁ receptors for associative components of amphetamine-induced behavioral sensitization and conditioned activity: A study using D₁ receptor knockout mice. *Psychopharmacology*, 183, 20-30.
- Armstrong V, Reichel CM, Doti JF, Crawford CA, McDougall SA (2004). Repeated amphetamine treatment causes a persistent elevation of glial fibrillary acidic protein in the caudate-putamen. *European Journal of Pharmacology*, 488, 111-115.
- Crawford CA, Choi FA, Kohutec J, Yoshida ST, McDougall SA (2004). Changes in PKA activity and G_{sa} and G_{olfa} levels after amphetamine- and cocaine-induced behavioral sensitization. *Synapse*, 51, 241-248.
- Crawford CA, Willimans MT, Newman ER, McDougall SA, Vorhees CV (2003). Methamphetamine Exposure During the Prewanling Period Causes Prolonged Changes in Dorsal Striatal Protein Kinase A Activity, Dopamine D₂-Like Binding Sites, and Dopamine Content. *Synapse*, 48, 131-7.
- Cepeda C, Crawford CA, Margulies JE, Watson JB, Levine MS, Cohen RW (2002). Enhanced Epileptogenic Susceptibility in a Genetic Model of Reactive Synaptogenesis: the Spastic Han-Wistar Rat. *Developmental Neuroscience*, 24, 262-271.
- Karper PE, De La Rosa H, Newman ER, Krall CM, Nazarian A, McDougall SA, Crawford CA (2002). Role of D₁-like receptors in amphetamine-induced behavioral sensitization: a study using D_{1A} receptor knockout mice. *Psychopharmacology*, 159, 407-414.
- Armstrong V, Nazarian A, Zavala AR, Krall CM, Crawford CA, McDougall SA (2001). Effects of acute and repeated methamphetamine treatment on the ultrasonic vocalizations of postnatal rats. *Pharmacology, Biochemistry and Behavior*, 70, 273-278.
- McDougall SA, Zavala AR, Karper PE, Abbott DL, Figueroa S, Crawford CA (2001). Chronic amphetamine exposure during the preweanling period does not affect avoidance learning or novelty-seeking of adults rats. *Neurobiology of Learning and Memory*, 75, 338-345.

- Bandrowski AE, Ashe JH, Crawford CA (2001). Tetanic stimulation and metabotropic glutamate receptor agonists modify synaptic responses and protein kinase activity in rat auditory cortex. *Brain Research*, 894, 218-232.
- Crawford CA, Zavala AR, Karper PE, McDougall SA (2000). Long-term effects of postnatal amphetamine treatment on striatal protein kinase A activity, dopamine D₁-like and D₂-like binding sites, and dopamine content. *Neurotoxicology and Teratology*, 22, 799-804.
- Crawford CA, Zavala AR, Karper PE, Collins RL, Loring-Meier TE, Watson JB, McDougall SA (2000). Amphetamine treatment during the preweanling period produces enduring changes in striatal protein kinase A activity. *Pharmacology, Biochemistry, and Behavior*, 66, 835-40.
- Zavala AR, Nazarian A, Crawford CA, McDougall SA (2000). Cocaine-induced behavioral sensitization in the young rat. *Psychopharmacology*, 151, 291-8.
- Karper PE, Nazarian A, Crawford CA, Drago J, McDougall SA (2000). Role of D₁ receptors for κ -opioid-mediated locomotor activity and antinociception during the preweanling period: A study using D₁ receptor knockout mice. *Physiology and Behavior*, 68, 585-90.
- Cepeda C, Li Z, Cromwell HC, Altemus KL, Crawford CA, Nansen EA, Ariano MA, Sibley DR, Peacock WJ, Mathern GW, Levine MS (1999). Electrophysiological and morphological analyses of cortical neurons obtained from children with catastrophic epilepsy: dopamine receptor modulation of glutamatergic responses. *Developmental Neuroscience*, 21, 223-235.
- McDougall SA, Collins RL, Karper PE, Watson JB, Crawford CA (1999). Effects of repeated methylphenidate treatment in the young rat: sensitization of both locomotor activity and stereotyped sniffing. *Experimental and Clinical Psychopharmacology*, 7, 208-218.
- Colwell CS, Cepeda C, Crawford C, Levine MS (1998). Postnatal development of glutamate receptor-mediated responses in the neostriatum. *Developmental Neuroscience*, 20, 154-163.
- Collins RL, Zavala AR, Ingersoll VY, Crawford CA, McDougall SA (1998). Kappa opioid behavioral sensitization in the preweanling rat: relationship to Fos immunoreactivity. *Psychopharmacology*, 13, 282-291.
- Crawford CA, McDougall SA, Meier TL, Collins RL, Watson JB (1998). Repeated methylphenidate treatment induces behavioral sensitization and decreases in protein kinase A and dopamine-stimulated adenylyl cyclase activity in the dorsal striatum. *Psychopharmacology*, 136, 34-43.

- Crawford CA, Drago J, Watson JB, Levine MS (1997). Effects of repeated amphetamine treatment on the locomotor activity of the dopamine D_{1A}-deficient mouse. *Neuroreport*, 8, 2523-2527.
- Duke MA, Meier TL, Bolanos CA, Crawford CA, McDougall SA (1997). Paradoxical effects of kappa opioid stimulation on the locomotor activity and Fos immunoreactivity of the preweanling rat: role of dopamine receptors. *Behavioral Neuroscience*, 111, 1114-1122.
- McDougall SA, Garmsem GM, Meir TL, Crawford CA (1997). Kappa opioid mediated locomotor activity in the preweanling rat: role of pre and postsynaptic dopamine receptors. *Psychopharmacology*, 133, 62-68.
- Crawford CA, Levine MS (1997). Dopaminergic function in the neostriatum and nucleus accumbens of young and aged Fischer 344 rats. *Neurobiology of Aging*, 18, 57-66.
- Levine MS, Altemus KL, Cepeda C, Cromwell HC, Crawford CA, Ariano MA, Drago J, Sibley DR, Westphal H (1996). Modulatory actions of dopamine on N-methyl-d-aspartate receptor-mediated responses are altered in D1A mutant mice. *The Journal of Neuroscience*, 16, 5870-5882.
- Reid MS, Hsu K, Tolliver BK, Crawford CA, Berger SP (1996). Evidence for the involvement of phospholipase A2 mechanisms in the development of stimulant sensitization. *Journal of Pharmacology and Experimental Therapeutics*, 276, 1244-1256.
- Cromwell HC, Witte EA, Crawford CA, Ly HT, Maidment NT, King BH (1996). Pemoline produces ipsilateral turning behavior in unilateral 6-OHDA-lesioned rats. *Progress in Neuro-Psychopharmacology & Biological Psychiatry*, 20, 503- 514.
- Berger SP, Hall S, Mickalian J, Reid M, Crawford C, Delucchi K, Carr K, Hall S (1996). Dopamine release mediates conditioned responses to cocaine. *Lancet*, 347, 504- 508.
- Crawford CA, McDougall SA, Bolanos C, Hall S, Berger SP (1995). The effects of the kappa agonist U-50,488 on cocaine- induced conditioned and unconditioned behaviors and Fos immunoreactivity. *Psychopharmacology*, 120, 392-399.
- Crawford CA, Rowlett JA, McDougall SA, Bardo MT (1994). Age-dependent differences in the rate of recovery of striatal dopamine D1 and D2 receptors inactivation with EEDQ. *European Journal of Pharmacology*, 252, 225-231.
- Crawford CA, McDougall SA, Bardo MT (1994). Ontogenetic effects of EEDQ on amphetamine-induced behaviors of rats: Role of presynaptic processes. *Psychopharmacology*, 116, 152-160.

- Crawford CA, McDougall SA, Bardo MT (1994). Effects of EEDQ on the synthesis and metabolism of dopamine in preweanling and adult rats. *Neuropharmacology*, 33, 1559-1565.
- McDougall SA, Duke MA, Bolanos CA, Crawford CA (1994). Ontogeny of behavioral sensitization in the rat: effects of direct and indirect dopamine agonists. *Psychopharmacology*, 116, 483-490.
- McDougall SA, Crawford CA, Nonneman AJ (1993). Behavioral effects of selective and nonselective dopamine agonist on young rats after irreversible antagonism of D1 and/or D2 receptors. *Psychopharmacology*, 111, 225-232.
- McDougall SA, Crawford CA, Nonneman AJ (1992). Effects of irreversible dopamine receptor inactivation on locomotor activity and grooming in the 17- and 90-day-old rat. *Psychopharmacology*, 106, 502-510.
- Crawford CA, McDougall SA, Rowlett JA, Bardo MT (1992). Depletion of dopamine binding sites and changes in dopamine and dihydroxyphenylacetic acid levels in 17- and 90-day-old rat striatum after irreversible receptor antagonism. *Neuroscience Letters*, 137, 265-269.
- McDougall SA, Crawford CA, Nonneman AJ (1992). Reinforced responding of the 11-day-old rat pup: Role of D-1 and D-2 dopamine receptors. *Pharmacology, Biochemistry & Behavior*, 42, 163-168.
- McDougall SA, Nonneman AJ, Crawford CA (1991). Effects of SCH 23390 and sulpiride on the reinforced responding of the young rat. *Behavioral Neuroscience*, 105, 742-752.
- Pierce RC, Crawford CA, Nonneman AJ, Bardo MT (1990). Effects of length of habitation and 6-hydroxydopamine lesions of the mesocortical/mesolimbic pathways of novelty-seeking behavior of rats. *Pharmacology, Biochemistry & Behavior*, 36, 321-325.

BOOKS OR BOOK CHAPTERS

- McDougall, S. A., Crawford, C. A., and Nonneman, A. J. (1994). Age-related differences in dopamine mediated behaviors: Effects of irreversible antagonism. In N. Spear, L. Spear, and M. Woodruff (Eds.), *Neurobehavioral plasticity: Learning, development and response to brain insults*. Hillsdale, NJ: Lawrence Erlbaum Associates.