Matthew J. Will

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EDUCATION

1988-1992	**BA, Psychology** Saint John's University, Collegeville, MN
1995-1997	**MA, Psychology** University of Colorado, Boulder, CO Behavioral Neuroscience Program
1997-2000	**PhD, Psychology** University of Colorado, Boulder, CO Behavioral Neuroscience Program

POSITIONS HELD

1993-1994	Research Assistant, Institute of Child Development, University of Minnesota, Minneapolis, MN
1994-1995	Research Assistant, Department of Psychology, University of Colorado, Boulder, CO
1995-2000	Graduate Research Assistant, University of Colorado, Boulder, CO
2000-2004	Postdoctoral Fellow, University of Wisconsin-Madison Medical School, Dept. of Psychiatry, Madison, WI
2004-2010	Assistant Professor, Department of Psychological Sciences, University of Missouri, Columbia, MO
2004-pres	Faculty Member, Interdisciplinary Neuroscience Program, University of Missouri, Columbia, MO
2005-2015	Treasurer, Society for Neuroscience Mid-Missouri Chapter
2006-pres	Research Faculty, Thompson Center for Autism and Neurodevelopmental Disorders. University of Missouri, Columbia, MO
2011-pres	Associate Professor, Department of Psychological Sciences, University of Missouri, Columbia, MO
2016-2021	Director, Cognition and Neuroscience Graduate Training Area
2018-pres	Executive Committee Member, Interdisciplinary Neuroscience Program
2023-pres	Associate Editor, *Frontiers in Behavioral Neuroscience*

FELLOWSHIP AWARDS AND HONORS

1996-1997	Academic Dean's Fellowship, University of Colorado, Boulder
2001-2004	Ruth L. Kirschstein National Research Service Award (NRSA)
2006	Summer Research Fellowship, University of Missouri, Columbia
2021	Summer Research Fellowship, University of Missouri, Columbia

PROFESSIONAL MEMBERSHIP

Society for Neuroscience
Society for the Study of Ingestive Behavior
Midwestern Psychological Association

TEACHING EXPERIENCE

Laboratory Instructor, University of Colorado, Boulder

- Biopsychology
- Physiology and Neuroanatomy Laboratory
- Psychology of Learning Laboratory
- Sensation and Perception Laboratory
- Computer Laboratory for Psychological Research
- Comparative Ethology

Instructor, University of Missouri, Columbia

- Mind, Brain and Behavior (2210)*
- Research Methods (3010)
- Health Psychology (3830)*
- Physiological Psychology (4210)*
- Functional Neuroscience (8210)*
- Integrative Neuroscience (8442)
- Reward and Motivation Graduate Seminar (9110)
- Studies in Physiological Psychology (9120)
- World of Neuroscience (2017)

**online and classroom*

Online Course Development, University of Missouri, Columbia

- Physiological Psychology (4210) – 15wk, 8wk, and 2.5wk (intersession)
- Mind, Brain and Behavior (2210) – 15wk and 2.5wk (intersession)
- World of Neuroscience (2017) - 15wk course

Volunteer Course Development and Instruction

- Integrative Neuroscience (8442) – 3 lectures every spring semester
- World of Neuroscience (2017) – Co-coordinate/teach 15wk team-taught course

Invited Presentations (2005 – present)

- *Opioid Modulation of Food Reward*, Cognition and Neurosciences Seminar, U of Missouri
- *Why do we eat when we aren't hungry?* Bond Life Sciences Center, Life Sciences Seminar, U of Missouri
- *Functional Neuroanatomy of Reward and Stress Pathways*, Department of Psychological Sciences, Alcohol Proseminar, U of Missouri
- *Role of Amygdala in mediating Binge-eating*, Department of Psychological Sciences, Clinical Proseminar, U of Missouri
- *Amygdala: not just the almond-shaped fear-mediating nucleus*, Department of Biological Sciences, Neuroscience Seminar, U of Missouri
- *Autism and alcoholism: genes and behavior*, Thompson Center for Autism Neurodevelopmental Disorders, U of Missouri
- *Why we really can't eat just one*, Saturday Morning Science*,* Bond Life Sciences Center, U of Missouri

- *Addicted to the Brain*, Public Lecture, Brain Awareness Week, Ragtag Cinema, Columbia, Missouri
- *Why we really can't eat just one*, Televised Series, Community Perspectives on Obesity, Columbia Access Television, Columbia, Missouri
- *Neurobiology of Food Addiction*, Truman State University Summer Research Scholar Program, Bond Life Sciences Center, U of Missouri
- *The Neuroscience of Flavor Learning*, Consumption and Reward, Midwestern Psychological Association Symposia, Chicago, IL
- *Living to eat or eating to live: where do brain opioids fit in?*, Nutrition and Exercise Seminar Series, Acuff Auditorium, Univ of Missouri
- *Can physical activity reduce food cravings?* Psychology Department, Kansas State University
- *Long-term voluntary wheel running effects on ventral striatal opioid driven high-fat feeding behaviors in Sprague-Dawley and Wistar rat strains*, Midwestern Psychological Association Symposia, Chicago, IL
- *Influence of exercise on diet preference: sex differences and opioids*, Psychology Department, University of Vermont

Mentorship of Undergraduate Students

Current Undergraduate Research Assistants

Lizzie Pickering, Psychological Sciences
Carlos Sardina, Psychological Sciences
Sanya Suri, Psychological Sciences

Past Undergraduate Research Assistants

Tim Schweizer, Psychological Sciences (2024)
Tabitha Houska, Biochemistry (2024)
Ella Konrad, Psychological Sciences (2024)
Taylor Sims, (2022) Biological Sciences
Elizabeth Stevens, (2022) Psychological Sciences
Amanda Day, Psychological Sciences (2022) B.A. Psychological Sciences
Madeleine Brownfield, (2021) B.S. Biochemistry
Jeffrey Bodeen, (2021) B.S. Psychological Sciences, Biological Sciences
Cassandra Eddy, Health Sciences
Stephanie Muscott, (2021) Psychological Sciences
Jordan Petronella, (2020) B.S. Psychological Sciences
Esiri Emeje (2021) B.S. Psychological Sciences (IMSD Express mentor)
Kennedy Duncan (2020) B.S. Biological Sciences (IMSD Express mentor)
Ngozichukwu Ibe (post bac)
Leticia Rivera (2020) B.S. Biological Sciences (Bryant Scholar and IMSD Express mentor)
Mikala Cessac, (2019) B.S. Psychological Sciences, B.S. Biological Sciences
Kelsey Mason (2020) B.S. Psychological Sciences, B.S. Biological Sciences (Capstone Honors Mentor)

Emily Bathe (2018) B.A. Psychological Sciences
Valerie Weise (2018)* B.S. Psychological Sciences, B.S. Biological Sciences (currently in Addictions Neuroscience PhD program at IUPUI)
Jane Nelson (2018) B.A. Psychological Sciences
Justin Moore (2018) Psychological Sciences
Kiersten Fodor (2018) B.A. Psychological Sciences
Anna Tamasi (2017) B.S. Honors, Biological Sciences
Graydon Gereau (2017) B.A. Honors, Psychological Sciences, Biological Sciences
Sam McNair (2017) B.S. Honors, Biological Sciences
Julie Muckerman, (2016) B.A. Honors, Psychological Sciences
Anna Wright (current MU student)
Lauren Welby, (2015) B.S. Biological Sciences, B.A. Psychological Sciences
Andrew Snyder, (2015) B.S. Biological Sciences
Brett Wahle, (2015) B.S. Psychological Sciences
Matt McCabe, (2014) B.A. Honors, Psychological Sciences, B.S. Political Science (Neuroscience PhD program at University of Vermont)
Ted Floros, (2011) B.S. Biological Sciences, B.A. Psychological Sciences
Sophia McQuirk, (2009) B.A. Honors Psychological Sciences
Seema Trivedi, B.A. (2009) Biological Sciences
Kylie Klosterman, (2008) B.A. Honors Psychological Sciences
Amanda Gillman, (2008) B.A. Psychological Sciences
James Polston, (2008) B.A. Psychological Sciences
Alicia Pardee, (2008) B.A. Honors Psychological Sciences
Jordan McCall, (2007) B.A. Honors Psychological Sciences, M.A. in Public Health, PhD Neuroscience, Washington University, Assistant Professor, Washington University, Center for Clinical Pharmacology at STLCOP and WashU School of Medicine.
Ali Sawani, (2007) B.A. Biological Sciences, MD from University of Michigan
Kelly Griffin, (2006) B.S. Biological Sciences
Annie Lai, B.S. (2005) Biochemistry
Kyle Parker, B.A. (2005) Psychological Sciences, Instructor, Washington University

<u>Bachelor's degree (Honors capstone research project mentor)</u>

- 2005 Kelly Griffin
- 2007 Jordan McCall
- 2008 Kylie Klosterman
- 2008 Alicia Pardee
- 2009 Sophia McQuirk
- 2016 Julie Muckerman
- 2017 Anna Tamasi
- 2018 Valerie Weise
- 2020 Kelsey Mason
- 2023 Ella Konrad

<u>Fellowship and Grant Awardees – Undergraduate Research Assistants</u>

- Life Sciences Undergraduate Research Opportunity Program (LSUROP)

2006 Ali Sawani
2011 Ted Floros

- IMSD-EXPRESS program
  2006 Ali Sawani
  2009 Holly Payne
  2019 Leticia Rivera
  2019 Kennedy Duncan
  2019 Esirioghene Emeje
  2020 Leticia Rivera
  2020 Esirioghene Emeje
  2020 Kennedy Duncan
- Undergraduate Research Mentorship Program (URMP)
  2008 Alicia Pardee
  2016 Gray Gereau
- Discovery Fellows Honors Program
  2016 Sam McNair
- Bryant Scholars Program
  2018 Leticia Rivera
- McNair Fellowship Program
  2023 Carlos Sardina
- Mizzou Forward Undergraduate Research Grant Program
  2024 Carlos Sardina

Mentorship of Graduate Students
(Primary advisor or co-advisor*)

MA Psychology
2008 Carolyn Pritchett-Kelley (Assistant Professor, University of West Florida)

PhD Psychology
2015 Howard Johns (Instructor, Westminster College)
2020 Melissa Tapia (post doc Wake Forest Medical School of Medicine)
2024 Courtney Gann* (Epic Principal Trainer, Arkansas Children's)
2025 Yonca Cam (Staff Scientist, Washington University School of Medicine)

PhD Neuroscience
2012 Karen Jones* (post doc, UC Davis)
2013 Kyle Parker (post doc, Wash U)
2015 Patrick Hecht* (post doc, USC)
2019 Jenna Lee (post doc, Michigan State)
2022 Taeson Woo* (post doc, NYU)

PUBLICATIONS

MY BIBLIOGRAPHY
(total citations as of Jan 2024 on Google Scholar = 4275, h-index = 28)

L.C. Sutton, S. E Lea, M.J. Will, B.A. Schwartz, C.E. Hartley, J.C. Poole, L.R. Watkins and S.F. Maier. (1997). Inescapable shock-induced potentiation of morphine analgesia. Behavioral Neuroscience. 111: 1105-1113.

MJ Will, L.R. Watkins, S.F. Maier. (1998). Uncontrollable stress potentiates the rewarding properties of morphine. Pharmacology, Biochemistry & Behavior. 60 (3): pp. 655-664.

R.E Grahn, M.J. Will, S.E. Hammack, S. Maswood, M.B. McQueen, L.R. Watkins, and S.F. Maier. (1999). Activation of serotonin-immunoreactive cells in the dorsal raphe nucleus in rats exposed to an uncontollable stressor. Brain Research. 826 pp. 35-43.

KT Nguyen, T Deak, MJ Will, MK Hansen, BN Hunsaker, M Fleschner, LR Watkins, & SF Maier. (2000). Timecourse and corticosterone sensitivity of the brain, pituitary, and serum interleukin-1B protein response to acute stress. Brain Research, 859: 193-201.

MJ Will, A Der-Avakian, JL Pepin, BT Durkan, LR Watkins, & SF Maier. (2002). Modulation of the locomotor properties of morphine and amphetamine by uncontrollable stress. Pharmacology, Biochemistry, & Behavior, 71:1-2 345-51.

AE Kelley, V. Bakshi, SN Haber, TL Steininger, MJ Will, and M. Zhang. (2002). Opioid modulation of taste hedonics within the ventral striatum. Physiology & Behavior 76 (3): 365-377.

Grahn, R.E., Hammack, S.E., Will, M.J., O'Connor, K. A., Deak, T., Sparks, P.D., Watkins, L.R., Maier, S.F. (2002). Blockade of alpha1 adrenoreceptors in the dorsal raphe nucleus prevents enhanced conditioned fear and impaired escape performance following uncontrollable stressor exposure in rats. Behav Brain Res 134:1-2 387-392.

MJ Will, EB Franzblau, AE Kelley. (2003). Enhancement of fat intake induced by intra-accumbens μ-opioid stimulation is dependent on the activation of a distributed network. Journal of Neuroscience 23 (7): 2882-2888.

AE Kelley, MJ Will, TL Steininger, M Zhang, SN Haber. (2003). Influence of high-fat diet on preproenkephalin gene expression in the ventral striatum. European Journal of Neuroscience, Vol. 18, (9): 2592-2598.

MJ Will, A Der-Avakian, RE Grahn, SE Hammack, PD Sparks, JL Pepin, BT Durkan, LR Watkins, & SF Maier. (2004). Electrolytic lesions and pharmacological inhibition of the dorsal raphe nucleus prevent stressor potentiation of morphine conditioned place preference in rats. Psychopharmacology, Vol. 171 (2): 191-8.

MJ Will, EB Franzblau, AE Kelley. (2004). The amygdala is critical for opioid-mediated binge eating of fat. Neuroreport., Vol 15 (12): 1857-60.

A Der-Avakian, MJ Will, ST Bland, T Deak, KT Nguyen, MJ Schmid, RL Spencer, LR Watkins, and SF Maier. (2005). Surgical and pharmacological suppression of glucocorticoids prevents the enhancement of morphine conditioned place preference by uncontrollable stress in rats. Psychopharmacology, Vol. 179; 409-417.

A Der-Avakian, MJ Will, ST Bland, T Deak, KT Nguyen, MJ Schmidt, RL Spencer, LR Watkins, and SF Maier. (2005). Surgical and pharmacological suppression of glucocorticoids prevents the enhancement of morphine conditioned place preference by uncontrollable stress in rats. Psychopharmacology Vol. 179: 409-17.

AE Kelley, BA Baldo, WE Pratt, MJ Will. (2005). Corticostriatal-hypothalamic circuitry and food motivation: integration of energy, action and reward. Physiology and Behavior. 15; 86 (5): 773-95.

MJ Will, WE Pratt, AE Kelley. (2006). Pharmacological characterization of high-fat feeding induced by opioid stimulation of the ventral striatum. Physiology and Behavior. Sep 30;89 (2):226-34.

MJ Will, W Van der Heyden, AE Kelley. (2007). Striatal opioid peptide gene expression differentially tracks short-term satiety but does not vary with negative energy balance, in a manner opposite to hypothalamic NPY. Am J Physiol Regul Integr Comp Physiol. Jan 292 (1): R217-26.

DK Miller, JR Lever, KR Rodvelt, JA Baskett, MJ Will, GR Kracke. (2007). Lobeline, a potential pharmacotherapy for drug addiction, binds to mu opioid receptors and diminishes the effects of opioid receptor agonists. Drug Alcohol Depend. Jul 10;89(2-3):282-91.

Fountain ED, Mao J, Whyte JJ, Mueller KE, Ellersieck MR, Will MJ, Roberts RM, Macdonald R, Rosenfeld CS. (2008). Effects of diets enriched in omega-3 and omega-6 polyunsaturated fatty acids on offspring sex-ratio and maternal behavior in mice. Biol Reprod. Feb; 78(2):211-7.

MJ Will, CE Pritchett, KE Parker, H Ma, AM Sawani, A Lai. (2009). Behavioral characterization of amygdala involvement in mediating intra-accumbens opioid-driven feeding behavior. Behavioral Neuroscience. Vol. 123, No. 4, 781-793.

CE Pritchett, AL Pardee, S McGuirk, MJ Will. (2010). The role of nucleus accumbens adenosine-opioid interaction in mediating palatable food intake. Brain Research, Jan 8;1306:85-92.

KE Parker, JG McCall, MJ Will. (2010). Basolateral amygdala opioids contribute to increased high-fat intake following intra-accumbens opioid administration, but not following 24-hr food deprivation. Pharmacology, Biochemistry, and Behavior, Dec;97(2):262-6.

MD Roberts, L Gilpin, KE Parker, TE Childs, MJ Will, FW Booth. (2012) Dopamine D1 receptor modulation in nucleus accumbens lowers voluntary wheel running in rats bred to run high distances. Physiol Behav. Feb 1;105(3):661-8.

SW Fowler, JM Walker, D Klakotskiaia, MJ Will, P Serfozo, A Simonyi, TR Schachtman. (2013). Effects of a metabotropic glutamate receptor 5 positive allosteric modulator, CDPPB, on spatial learning task performance in rodents. Neurobiol Learn Mem. Jan;9925-31.

KL Jones, MJ Will, PM Hecht, CL Parker, DQ Beversdorf. (2013). Maternal diet rich in omega-6 polyunsaturated fatty acids during gestation and lactation produces autistic-like sociability deficits in adult offspring. Behavioral Brain Research. Feb 1;105(3):661-8.

Baldo BA, Pratt WE, Will MJ, Hanlon EC, Bakshi VP, Cador M. (2013) Principles of motivation revealed by the diverse functions of neuropharmacological and neuroanatomical substrates underlying feeding behavior. Neurosci Biobehav Rev. Nov;37(9 Pt A):1985-98.

AS Sage, SC Vannest, KH Fan, MJ Will, SZ Lever, JR Lever, DK Miller. (2013). N-Phenylpropyl-N'-(3-methoxyphenethyl)piperazine (YZ-185) Attenuates the Conditioned-Rewarding Properties of Cocaine in Mice. ISRN Pharmacol. Sep 5;

KE Parker; HW Johns; TG Floros; MJ Will. (2014). Central amygdala opioid transmission is necessary for increased high-fat intake following 24-hour food deprivation, but not following intra-accumbens opioid administration. Behavioral Brain Research. Mar 1;260:131-8.

PM Hecht, MJ Will, TR Schachtman, L Welby, DQ Beversdorf. (2014). Effect of Beta-Adrenergic Antagonist on a Novel Cognitive Flexibility Task in Rodents. Behavioral Brain Research. Mar 1;260:148-54.

Hoertel HA, Will MJ, Leidy HJ. (2014). A randomized crossover, pilot study examining the effects of a normal protein vs. high protein breakfast on food cravings and reward signals in overweight/obese "breakfast skipping", late-adolescent girls. Nutrition Journal. Aug 6;13:80.

Parker KE, McCall JG, McGuirk SR, Trivedi S, Miller DK, Will MJ. (2015). Effects of co-administration of 2-arachidonylglycerol (2-AG) and a selective μ-opioid receptor agonist into the nucleus accumbens on high-fat feeding behaviors in the rat. Brain Res. Aug 27;1618:309-15.

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Smethells JR, Zlebnik NE, Miller DK, Will MJ, Booth F, Carroll ME. (2016). Cocaine self-administration and reinstatement in female rats selectively bred for high and low voluntary running. Drug Alcohol Depend. Oct 1;167:163-8.

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Sjaarda CP, Hecht P, McNaughton AJM, Zhou A, Hudson ML, Will MJ, Smith G, Ayub M, Liang P, Chen N, Beversdorf D, Liu X. (2017). Interplay between maternal Slc6a4 mutation and prenatal stress: a possible mechanism for autistic behavior development. Scientific Reports. Aug 18;7(1):8735.

Lee JR, Muckerman JE, Wright AM, Davis DJ, Childs TE, Gillespie CE, Vieira-Potter VJ, Booth FW, Ericsson AC, Will MJ. (2017). Sex Determines Effect of Physical Activity on Diet Preference: Association of Striatal Opioids and Gut Microbiota Composition. Behav Brain Res. Sep 15;334:16-25.

Matsui F, Hecht P, Yoshimoto K, Watanabe Y, Morimoto M, Fritsche K, Will M, Beversdorf D. (2018). DHA Mitigates Autistic Behaviors Accompanied by Dopaminergic Change in a Gene/Prenatal Stress Mouse Model. Neuroscience. Feb 10;371:407-419.

Belenchia AM, Jones KL, Will M, Beversdorf DQ, Vieira-Potter V, Rosenfeld CS, Peterson CA. (2018). Maternal vitamin D deficiency during pregnancy affects expression of adipogenic-regulating genes peroxisome proliferator-activated receptor gamma (PPARγ) and vitamin D receptor (VDR) in lean male mice offspring. Eur J Nutr. Mar;57(2):723-730.

Tapia MA, Lee JR, Gereau GB, Moore JM, Weise VN, Mason KL, Cessac ME, Bodeen JL, Miller DK, Will MJ. (2019). Sigma-1 receptor antagonist PD144418 suppresses food reinforced operant responding in rats. Behav Brain Res. Apr 19;362:71-76. doi: 10.1016/j.bbr.2019.01.011. Epub 2019 Jan 9.

Lee JR, Tapia MA, Nelson JR, Moore JM, Gereau GB, Childs TE, Vieira-Potter VJ, Booth FW, Will MJ. (2019). Sex dependent effects of physical activity on diet preference

in rats selectively bred for high or low levels of voluntary wheel running. Behav Brain Res. Feb 1;359:95-103.

Tapia MA, Lee JR, Weise VN, Tamasi AM, Will MJ. (2019). Sex differences in hedonic and homeostatic aspects of palatable food motivation. Behav Brain Res. 2019 Feb 1;359:396-400.

Lee JR, Parker KE, Tapia MA, Johns HW, Floros TG. Roberts MD, Booth FW, Will MJ. (2019). Voluntary wheel running effects on intra-accumbens opioid high-fat feeding and locomotor behavior in Sprague-Dawley and Wistar rat strains. Physiology & Behavior. Jul 1;206:67-75.

Tapia MA, Lever JR, Lever SZ, Will MJ, Park ES, Miller DK. (2019). Sigma-1 receptor ligand PD144418 and sigma-2 receptor ligand YUN-252 attenuate the stimulant effects of methamphetamine in mice. Psychopharmacology. Nov;236(11):3147-3158. doi: 10.1007/s00213-019-05268-2.

Lee JR, Tapia MA, Weise VN, Nelson JR, Tamasi MA, Fodor KR, Mason KL, Rivera LL, Booth FW, Will MJ. (2019). Voluntary Wheel Running Effects on Intra-Accumbens Opioid Driven Diet Preferences in Male and Female Rats. Neuropharmacology. Sep 1;155:22-30.

Tapia MA, Lee JR, Bathe EL, Rivera LL, Mason KL, Cessac ME, Miller DK, Will MJ. (2019). Sigma-1 receptor antagonist, PD144418, selectively reduces female motivation for food during negative energy balance. Behav Brain Res. Nov 5;373:112087. doi: 10.1016/j.bbr.2019.112087. Epub Jul 17.

Tapia MA, Sage AS, Fullerton EI, Judd JM, Hildebrant PC, Will MJ, Lever SZ, Lever JR, Miller DK. (2020). The sigma receptor ligand N-phenylpropyl-N'-(4-methoxyphenethyl)3piperazine (YZ-067) enhances the cocaine conditioned-rewarding properties while inhibiting the development of sensitization of cocaine in mice. Psychopharmacology (Berl). Mar;237(3):723-734.

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Raza Qazi, Kyle E. Parker, Choong Yeon Kim, Rudriger Rill, Makenzie R. Norris, Jaeyoon Chung, Jenny Kim, John Bilbily, Marie C. Walicki, Graydon B. Gereau, Hyoyoung Lim, Yanyu Xiong, Jenna R. Lee, Melissa A Tapia, Matthew J. Will, Sangtae Ha, Jordan G. McCall, Jae-Woong Jeong. (2022). Scalable and modular wireless-network infrastructure for large-scale behavioural neuroscience. Nature Biomedical Engineering. Jun;6(6):771-786.

microRNA as a Maternal Marker for Prenatal Stress-Associated ASD, Evidence from a Murine Model. Taeseon Woo, Candice King, Nick I Ahmed, Madison Cordes, Saatvika Nistala, Matthew J Will, Clark Bloomer, Nataliya Kibiryeva, Rocio M Rivera, Zohreh Talebizadeh, David Q Beversdorf. J Pers Med. 2023 Sep 20;13(9):1412.

Kocum CG, Cam Y, Shay DA, Schweizer TA, Konrad ER, Houska TK, Sardina CA, Schachtman TR, Vieira-Potter VJ, Will MJ. Voluntary wheel running access produces opposite effects in male and female rats on both palatable diet consumption and associated ventral striatal opioid- and dopamine-related gene expression. Frontiers in Integrative Neuroscience (*invited, special issue*). 2024 Jul 26:18:1426219.

Cam Y, Kocum CG, Houska TK, Konrad ER, Schweizer TA, Will MJ. Palatable feeding effects on expression and reinstatement of morphine conditioned place preference in male and female rats. Behav Brain Res. 2025 Feb 4;477:115320.

Cam Y, Kocum CG, Konrad ER, Schweizer TA, Houska TK, Sardina CA, Suri SK, Will MJ. Incentive motivation for palatable food blocked by intra-accumbens melanin-concentrating hormone (MCH) receptor-1 antagonist in female rats. Pharmacol Biochem Behav. 2024 Sep 26;245:173884.

Cam Y, Kocum CG, Houska TK, Konrad ER, Schweizer TA, Will MJ. Palatable feeding effects on expression and reinstatement of morphine conditioned place preference in male and female rats. Behav Brain Res. 2025 Feb 4;477:115320.

Woo T, Ahmed NI, Appenteng MK, King C, Li R, Fritsche KL, Sun GY, Cui J, Will MJ, Maurer SV, Stevens HE, Beversdorf DQ, Greenlief CM. Effect of Maternal Dietary DHA and Prenatal Stress Mouse Model on Autistic-like Behaviors, Lipid Peroxidation Activity, and GABA Expression in Offspring Pups. Int J Mol Sci. 2025 Jul 14;26(14):6730.

Cam Y, Sardina CA, Suri SK, Pickering EC, Padilla FM, Will MJ. Intra-accumbens melanin-concentrating hormone (MCH) receptor-1 antagonism on opioid-driven sucrose consumption in male and female rats. Pharmacol Biochem Behav. 2026 Jan;258:174134.

RESEARCH FUNDING (10 as PI)

Role of ventral striatal enkephalins and food reward
Direct costs: $125,776; Total cost: $125,776
Ruth L. Kirschstein National Research Service Award
National Institutes of Health / NIDA
2001-2004
Role: MJ Will (PI)

Neural mediators of diet preference and food intake

Total Direct Costs: $32,000
University of Missouri Research Board
2006-2007
Role: MJ Will (PI)

Neurobiological processes associated with autism
Co-Investigator
Total Direct Costs: $32,000
Thompson Center for Autism and Neurodevelopmental Disorders
2006-2007
Role: MJ Will (Co-PI)

Central opioid-cannabinoid interactions and food reward
Direct costs: $100,000; Total cost: $139,723
National Institute of Health / NIDA (RO3)
2008-2010
Role: MJ Will (PI)

Neurobiology of feeding: hunger vs. reward
Direct Costs: $61,000
2011-2014
Research Board, University of Missouri
Role: MJ Will (PI)

Psychology of Alcohol Use and Dependence Training
National Institutes of Health / NIDA
Role: Supporting Training Faculty of Training Grant

Clinical interaction between stress, diet, genetics, and inflammation in the etiology of autism
University of Missouri, Office of the Provost, Mizzou Advantage Program
Total Direct Costs: $50,000
2010-2012
Role: MPI (DQ Beversdorf, K Fritsche, MJ Will)

Sutherlandia Neurocognitive and Behavioral Consequences
Research Board
Total Direct Costs: $22,500
2013-2014
Role: MJ Will (Co-I), D Beversdorf (Co-I), Bill Folk (PI)

Examination of heroin self-administration behavior in rats selectively bred to voluntarily run high or low distances
University of Missouri Research Council
Total Direct Costs: $9,995
2016-2017

Role: MJ Will (PI), FW Booth (Co-I)

Roles of maternal DHA in maternal stress autism model
University of Missouri Research Council
Total Direct Costs: $9,995
2018-2019
MC Greenlief (PI), MJ Will (Co-I), and 4 others

Effects of PD144418, a sigma-1 receptor antagonist, on hedonic aspects of operant food motivation in male and female rats.
Psi Chi International Honor Society
Direct: $1500
2019
MJ Will (PI), Melissa Tapia (Co-PI)

Examining the influence of opiate withdrawal on hedonic feeding and interaction with drug seeking
University of Missouri Research Council
Total Direct Costs: $10,000
2021-2022
MJ Will (PI)

Impact of the melanin-concentrating hormone pathway inhibition and palatable diet consumption on the morphine conditioned place preference
Psi Chi International Honor Society
$1,500
2023-03-28 – 2024-03-31
Role: PI (Yonca Cam, Co-PI)

The Role of Estradiol on Central Dopamine Signaling and its Associations with Cocaine Preference and Exercise
F31 Submitted to NIH/NIDA
June 15, 2022 - June 14, 2024
($150,000.00)
Role: Co-Sponsor

Neuroendocrine dysfunction and hypertension
R01HL159157 (administrative supplement)
NIH NATL HEART LUNG AND BLOOD INST
$386,777
2023-07-01 – 2024-06-30
Role: Co-I (10% shared credit)