Stephen V. Mahler, Ph.D.
Assistant Professor
Department of Neurobiology & Behavior
University of California Irvine
mahlers@uci.edu
http://faculty.sites.uci.edu/mahlerlab/
@svmahler

Education and Training:

Postdoctoral Fellow (2009-2015). Medical University of South Carolina, Gary Aston-Jones Lab
Biopsychology Ph.D. (2009). University of Michigan, Kent C. Berridge Lab
Biopsychology M.S. (2006). University of Michigan, Kent C. Berridge Lab
Social Sciences M.A. (2003). University of Chicago, Harriet de Wit Lab
Psychology B.S. with Honors (2001). Loyola University Chicago

Honors and Awards:

Associate Member, American College of Neuropsychopharmacology (2019)
Co-Chair, European Behavioral Pharmacology Society Panel (2019)
Hellman Fellow, Cross-Disciplinary Award for Early Career Investigator (2018)
Co-Chair and Presenter, American College of Neuropsychopharmacology Panel (2018)
Publons Peer Review Award, Top 1% Reviewer in Neuroscience and Behavior (2018)
Co-Chair, Winter Conference on Brain Research Panel (2017 & 2018)
Winter Conference on Brain Research Travel Award (2017)
"Hot Topic" Presentation at American College of Neuropsychopharmacology Meeting (2014)
Co-Chair, Society for Neuroscience meeting mini-symposium (2013)
American College of Neuropsychopharmacology Meeting Young Investigator Travel Award (2012)
Poster Selected for Display in NIDA Director's Offices (2012)
NIDA Travel Award for the Society for Neuroscience Conference (2012 & 2014)
Faculty of 1000 Associate Member Travel Award (2012)
Society for Neuroscience Chapter Award (South Carolina Chapter; 2011)
University of Michigan Wyvell Award: Best Biopsychology Dissertation (2009)
Michigan Society for Neuroscience Conference: Best Graduate Student Poster (2008)
American Psychological Association CARE Imprinting Travel Award (2007)
International Behavioral Neuroscience Society Travel Award (2006 & 2013)
NSF Graduate Research Fellowship Honorable Mention (2004)
Rackham Graduate School Travel Grants (2004-2006)
NIDA Travel Grant (CPDD Annual Meeting; 2003)
Phi Beta Kappa (2001)
Magna Cum Laude, Loyola University Chicago (2001)
Psi Chi (1997)
Golden Key (1997)
National Merit Scholar (1995)

Current Funding:

1. ICAL: Impact of Cannabinoids Across Lifespan: NIDA P50 Center of Excellence (PI: Daniele Piomelli; Mahler: Behavioral Project Director; 2018-2022)
2. ICAL: Impact of Cannabinoids Across Lifespan: NIDA P50 Center of Excellence (Mahler: Animal Core Director; 2018-2022)
3. TRDRP Research Award: Long-Term Effects of Adolescent E-Cigarette Vapor on Drug Intake and Therapeutic Response. (Fowler, Mahler MPI; 2020-2023).
4. NIDA F30 NRSA: Effects of early-life adversity on opioid addiction vulnerability (PI: Levis. Mentor: Mahler. Co-Mentor: Baram; 2020-2025)
5. DSPAN F99/K00: Chemogenetic Dissection of Ventral Pallidum Circuits in Decision Making and Compulsive

Drug Seeking in Rats. (PI: Farrell. Mentor: Mahler. Co-mentor: Wood; 2020-2026).

Training Grant Participation:

1. T32 Training Program in Addiction (2020) PI: Wood. (Affiliate)
2. T32 Training Program in Learning & Memory (2020) PI: Yassa. (Affiliate; Sophia Levis—2019-20)

Prior Fellowships and Grants:

NIDA F31 NRSA: Ventral pallidum GABA circuits in risky decision making (PI: Farrell, Mentor: Mahler. Co-Mentor: Wood; 2019-2020).
Hellman Fellowship (Mahler, 2018-19).
School of Biological Sciences/School of Medicine Seed Grant (Mahler, 2017-18) Co-I: Gary Lynch
National Institute on Drug Abuse; R00 Pathway to Independence (Mahler, 2015-19)
National Institute on Drug Abuse; K99 Pathway to Independence (Mahler, 2013-2015)
National Institute on Drug Abuse; F32 Individual Postdoctoral NRSA Fellowship (Mahler, 2010-2012)
National Institute on Drug Abuse; F31 Individual Predoctoral NRSA Fellowship (Mahler, 2006-2009)

Publications (*Google Scholar h-Index:* 27):

Published/In Press:

44. Lawson, KA, Flores, AY, Hokenson, RE, Ruiz, CM, **Mahler, SV**. (in press). Nucleus accumbens chemogenetic inhibition suppresses amphetamine-induced ultrasonic vocalizations in male and female rats. Brain Sciences.

43. Ruiz, CM, Torrens, A, Lallai, V, Castillo, E, Manca, L., Martinez, MX, Justeson, DN, Fowler, CD, Piomelli, D, Mahler, SV. (in press). Pharmacokinetic and pharmacodynamic properties of aerosolizes ('vaped') THC in adolescent male and female rats. Psychopharmacology.

42. Levis, SC, Baram, TZ, **Mahler, SV.** (in press) Neurodevelopmental origins of substance use disorders: Evidence from animal models of early-life adversity and addiction. European Journal of Neuroscience.

41. Farrell, MR, Esteban, JSD, Faget, L, Floresco, SB, Hnasko, TS, **Mahler, SV.** (2021). Ventral pallidum GABA neurons mediate motivation underlying risky choice. Journal of Neuroscience.

40. Levis, SC, **Mahler, SV**, Baram, TZ. (2021). The developmental origins of opioid use disorder and its comorbidities. Frontiers in Human Neuroscience.

39. Quintanilla, J, Cox, BM, Gall, CD, **Mahler, SV**, Lynch, GS (in press). Retrograde Enhancement of Episodic Learning by a Post Learning Stimulus. Learning & Memory.

38. Brodnik, ZD, Xu, W, Batra, A, Lewandowski, S, Ruiz, CM, Mortensen, O, Kortagere, S, **Mahler, SV**, España, RA. (2020). Chemogenetic manipulation of dopamine neurons dictates cocaine potency at distal dopamine transporters. Journal of Neuroscience, 40(44), 8767-8779.

37. Ruiz, CM, Torrens, A, Castillo, E, Perrone, CR, Cevallos, J, Inshishian, V, Harder, E, Justeson, D, Huestis, MA, Swarup, V, Piomelli, D, **Mahler, SV**. (2020). Pharmacokinetic, behavioral, and brain activity impacts of Δ^9-tetrahydrocannabinol in adolescent male and female rats. Neuropsychopharmacology.

36. Torrens, A, Vozella, V, Huff, H, McNeil, B, Ahmed, F, Ghidini, A, **Mahler, SV**, Huestis, MA, Das, A, Piomelli, D (2020). Comparative pharmacokinetics of Δ^9-tetrahydrocannabinol in adolescent and adult male mice. Journal of Pharmacology and Experimental Therapeutics, 374(1), 151-160.

35. James, MH & **Mahler, SV** (2020). Do striatal push/pull circuits hold the key to relapsing heroin addiction? Neuropsychopharmacology, 45(8), 1243-1244.

34. Levis, SC, Bentzley, BS, Molet, J, Bolton, JL, Perrone, CR, Baram, TZ, & **Mahler, SV**. (in press). On the

early-life origins of vulnerability to opioid addiction. Molecular Psychiatry.

33. Farrell, MR, Ruiz, CM, Castillo, E, Faget, L, Khanbijian, C, Liu, S, Schoch, H, Rojas, G, Hnasko, TS, & **Mahler, SV.** (2019). Ventral pallidum is essential for cocaine relapse after voluntary abstinence in rats. Neuropsychopharmacology, 44(13), 2174-2185.
***Featured in "Research Highlight" article:** Ventral pallidum: a promising target for addiction intervention. McGovern, DJ & Root, DH, Neuropsychopharmacology
***Cover Image (December 2019)**

32. Bonaventura, J, Eldridge, MA, Hu, F, Gomez, JL, Sanchez-Soto, M, Abramyan, AM, Lam, S, Boehm, M, Ruiz, CM, Farrell, MR, Moreno, A, Faress, IMG, Andersen, N, Lin, JY, Moaddel, R, Morris, P, Shi, L, Sibley, DR, **Mahler, SV**, Nabavi, S, Pomper, MG, Bonci, A, Horti, AG, Richmond, BJ & Michaelides, M. (2019). High-potency ligands for DREADD imaging and activation in rodents and monkeys. Nature Communications, 10(1): 4627. doi: 10.1038/s41467-019-12236-z

31. Jayachandran, M, Linley, S, Schlecht, M, **Mahler, SV**, Vertes, RP, Allen, TA. (2019). Prefrontal pathways provide top down control of memory for sequences of events. Cell Reports, 28(3): 640-654.E6. doi: 10.1016/j.celrep.2019.06.053

30. Halbout, B, Marshall, AT, Azimi, A, Liljeholm, M, **Mahler, SV**, & Ostlund, SB. (2019). Chemogenetic inhibition of ventral tegmental area dopamine neurons or their inputs to the nucleus accumbens disrupts cue-triggered reward seeking but not reward taking. ELife, 8. pii: e43551. doi: 10.7554/eLife.43551.

29. **Mahler, SV**, Brodnik, ZD, Cox, BM, Buchta, WC, Bentzley, BS, Quintanilla, J, Cope, ZA, Lin, EC, Riedy, MD, Scofield, MD, Messinger, J, Ruiz, CM, Riegel, AC, España, RA & Aston-Jones, G. (2019). Chemogenetic manipulations of ventral tegmental area dopamine neurons reveal multifaceted roles in cocaine abuse. Journal of Neuroscience, 39(3), 503-518.

28. Mitchell, MR, Berridge, KC, **Mahler, SV.** (2018). Nucleus accumbens shell hedonic hotspot: Endocannabinoid enhanced 'liking' requires endogenous opioid signals. Cannabis & Cannabinoid Research, 3(1), 166-170. doi: 10.1089/can.2018.0021

27. Bolton, JL, Ruiz, CM, Rismanchi, N, Sanchez, GA, Castillo, E, Huang, J, Cross, C, Baram, TZ & **Mahler, SV.** (2018). Early-Life Adversity Facilitates Acquisition of Cocaine Self-Administration and Induces Persistent Anhedonia. Neurobiology of Stress, 8, 57-67.

26. Farrell, MR, Schoch, H, & **Mahler, SV**. (2018). Modeling Cocaine Relapse in Rodents: Behavioral Considerations and Circuit Mechanisms. Progress in Neuropsychopharmacology & Biological Psychiatry, 87(Pt A), 33-47.

25. **Mahler, SV** & Aston-Jones, G. (2018). CNO evil? Considerations for the use of DREADDs in behavioral neuroscience. Neuropsychopharmacology, 43, 934-936.

24. **Mahler, SV.** (2018). Stay alert: don't get hurt. Nature Neuroscience, 21(1), 3-5.

23. James, MH, McGlinchey, EM, Vattikonda, A, **Mahler, SV** & Aston-Jones, G. (2018). Cued reinstatement of cocaine- but not sucrose-seeking is dependent upon dopamine signaling in prelimbic cortex and is associated with recruitment of prelimbic neurons that project to contralateral nucleus accumbens core. International Journal of Neuropsychopharmacology, 21(1), 89-94.

22. Schoch, H, Huerta, MY, Ruiz, CM, Farrell, MR, Jung, KM, Huang, JJ, Campbell, RR, Piomelli, D & **Mahler, SV**. (2018). Adolescent cannabinoid exposure increases natural reward seeking and alters learning. Psychopharmacology, 235(1), 121-134.

21. Buchta, WC, **Mahler, SV**, Harlan, B, Aston-Jones, G, Riegel, AC. (2017). Dopamine terminals from the

ventral tegmental area gate intrinsic inhibition in the prefrontal cortex. Physiological Reports, 5(6), e13198

20. James, MH, **Mahler, SV**, Moorman, DE, & Aston-Jones, G. (2017). A decade of orexin/hypocretin in addiction: Where are we now? Current Topics in Behavioral Neuroscience, 33, 247-282.

19. McGlinchy, EM, James, MH, **Mahler, SV**, Pantazis, C & Aston-Jones (2016). Prelimbic to accumbens core pathway is recruited in a dopamine-dependent manner to drive cued reinstatement of cocaine seeking. Journal of Neuroscience, 36(33), 8700-11.

18. Smith, KS, Bucci, DJ, Luikart, BW, & **Mahler, SV**. (2016) DREADDs: Use and application in behavioral neuroscience. Behavioral Neuroscience, 130(2), 137-55.

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17. **Mahler, SV**, Moorman, DE, Smith, RJ, James, MH & Aston-Jones, G. (2014). Motivational activation: A unifying hypothesis of orexin/hypocretin function. Nature Neuroscience, 17(10), 1298-1303.

16. **Mahler, SV**, Vazey, EM, Beckley, JT, Keistler, CR, McGlinchy, EM, Kaufling, J, Wilson, SP, Deisseroth, K, Woodward, JJ & Aston-Jones, G (2014). Designer receptors show role for ventral pallidum input to ventral tegmental area in cocaine seeking. Nature Neuroscience, 17(4), 577-585.

15. **Mahler, SV**, Hensley-Simon, M, Tahsili-Fahadan, P, LaLumiere, RT, Thomas, C, Fallon, RV, Kalivas, PW & Aston-Jones, G. (2014). Modafinil attenuates reinstatement of cocaine seeking: Role for cystine-glutamate exchange and metabotropic glutamate receptors. Addiction Biology, 19(1), 49-60.

14. **Mahler, SV**, Smith, RJ & Aston-Jones, G. (2013). Interactions between VTA orexin and glutamate in cue-induced reinstatement of cocaine seeking in rats. Psychopharmacology, 226, 687-698.

13. **Mahler, SV**, Moorman, DE, Feltenstein, ME, Cox, BM, Ogburn, KB, Bachar, M, McGonigal, JT, Ghee, SM & See, RA (2013). A rodent "self- report" measure of methamphetamine craving? Rat ultrasonic vocalizations during methamphetamine self-administration, extinction, and reinstatement. Behavioural Brain Research, 236, 78-89.

12. **Mahler, SV**, & Aston-Jones, GS. (2012). Fos activation of selective afferents to ventral tegmental area during cue-induced reinstatement of cocaine seeking in rats. Journal of Neuroscience, 32(38), 13309-13325.
***Featured in "Journal Club" article:** Cole, S, Furlong, TM & Perry CJ. (2013). "Recruitment of multiple pathways to ventral tegmental area during cocaine-seeking behavior" Journal of Neuroscience, 33(6), 2239-41.

11. **Mahler, SV**, Smith, RJ, Moorman, DE, Sartor, GC & Aston-Jones, G. (2012). Multiple roles for orexin/hypocretin in addiction. Progress in Brain Research, 198, 79-121.

10. **Mahler, SV** & Berridge, KC. (2012). What and when to 'want?' Amygdala opioid focusing of incentive salience on cues for sugar and sex. Psychopharmacology. 221, 407-26.

9. **Mahler, SV** & de Wit, H (2010). Cue reactors: Individual differences in cue-induced craving after food or smoking abstinence. PLoS One 5(11): w15475. Doi:10.1371/journal.pone.0015475

8. Smith, KS, **Mahler, SV**, Peciña, S & Berridge, KC (2010). Hedonic hotspots: Generating sensory pleasure in the brain. In: ML Kringelbach & KC Berridge (Eds.). Pleasures of the Brain. Oxford University Press: Oxford UK.

7. **Mahler, SV** & Berridge, KC. (2009). Which cue to 'want?' Central amygdala opioid activation enhances and targets incentive salience on a prepotent reward cue. Journal of Neuroscience, 29(20), 6500-13.

6. **Mahler, SV**, Smith, KS & Berridge, KC. (2007). Endocannabinoid hedonic hotspot for sensory pleasure: Anandamide in nucleus accumbens shell enhances 'liking' of a sweet reward. Neuropsychopharmacology, 32(11), 2267-78.

5. Acheson, A, **Mahler, SV**, Chi, H & de Wit, H. (2006) Differential effects of nicotine on alcohol consumption in men and women. Psychopharmacology, 186(1), 54-63.

4. **Mahler, SV** & de Wit, H. (2005). Effects of haloperidol on reactions to smoking cues in humans. Behavioural Pharmacology, 16(2), 123-6.

3. Alsene, KA, **Mahler, SV**, & de Wit, H. (2005). Effects of *d*-amphetamine and smoking abstinence on cue-induced cigarette craving. Experimental and Clinical Psychopharmacology, 13(3), 209-18.

2. Young, EM, **Mahler, S**, Chi, H, & de Wit, H. (2005). Mecamylamine and ethanol preference in healthy volunteers. Alcoholism: Clinical & Experimental Research. 29(1), 58-65.

1. Roney, JR, **Mahler, SV** & Maestripieri, D. (2003). Behavioral and hormonal responses of men to brief interactions with women. Evolution and Human Behavior, 24, 365-375.

Committee Service:

UCI Ph.D. Committees:

Mitchell Farrell (Chair; Stephen Mahler Laboratory; 2016-Present; ***NIDA F31 NRSA & NIDA DSPAN F99/K00 Recipient***).
Sophia Levis (Chair; Mahler and Tallie Baram Laboratories; 2018-Present; ***NIDA F30 NRSA Recipient***)
Julian Quintanilla (Co-Chair; Gary Lynch Laboratory; 2018-Present; ***NSF GRFP Recipient***)

Alberto Lopez (Marcelo Wood Laboratory; 2016-2018)
Rianne Campbell (Marcelo Wood Laboratory; 2016-Present)
Anjelica Cardenas (Shahrdad Loftipour Laboratory, 2018-Present)
Jessica Yaros (Mike Yassa Laboratory; 2019-Present)
Yasmine Sherafat (Christie Fowler Laboratory; 2019-Present)
Angelene Dukes (Christie Fowler Laboratory; 2019-Present)
Steven Granger (Mike Yassa Laboratory; 2019-Present)
Ricardo Azevedo (Sunil Gandhi Laboratory; 2020-Present)

UCI Rank and Tenure Committees:

Three Tenure Review Committees (2016-20)
Five Merit Review Committees (2016-20)

Other UCI Service:

Graduate Student Advisor: Department of Neurobiology & Behavior (2020-Present)

University of California Irvine Center for Addiction Neuroscience (ICAN), Executive Committee (2015-Present).

University of California ICAL: Impact of Cannabinoids Across Lifespan, Executive Committee (2018-Present).

Awards and Honors Committees: Judging honors theses, choosing award-winning students (2017-Present).

Graduate Curriculum Committee: Redesigning 1st year Interdepartmental Neuroscience Program core curriculum (2017-Present)

Peer Reviewing Service:

Ad Hoc NIH Study Section Service: NMB (June 2018), R21 CEBRA (June 2020), Behavioral Neuroscience F02A NRSA section (June, Nov 2020)

Top Ten Most Peer Reviews, *Neuropsychopharmacology* (2015; 2017)

Publons "Top 1% Peer Reviewer" (2018)

Ad Hoc Reviewer for *Addiction Biology, Behavioural Brain Research, Biological Psychiatry, Brain, Behavior, and Evolution, Brain Research, British Journal of Pharmacology, Cannabis & Cannabinoid Research, European Neuropsychopharmacology, International Journal of Neuropsychopharmacology, Journal of Neuroscience, Nature Communications, Nature Neuroscience, Neuropsychopharmacology, Neuroscience, Physiology and Behavior, PLoS One, PNAS*, and *Psychopharmacology*

Teaching Experience:

Classroom Teaching:

The University of California, Irvine.

--Biology 38: Mind, Memory and the Brain (Undergraduate Non-Majors)
--Neuroscience 110: Neurobiology & Behavior (Undergraduate Bio Majors)
--Neurobiology & Behavior 209: Behavioral Neuroscience (1st Year Ph.D. Students)
--Neurobiology & Behavior 208: Systems Neuroscience (1st Year Ph.D. Students)
--Neurobiology & Behavior Neuroanatomy Bootcamp: (Incoming INP Students)
--Neurobiology & Behavior 121/233: Drug Addiction (Undergrad/Grad)

The University of Michigan.

Graduate Student Instructor:
"Introduction to Biopsychology" (Fall 2004, Fall 2005)
Teaching Assistant:
"Drugs of Abuse: Brain and Behavior" (2007)

UCI Laboratory Mentorship:

Postdocs	**Grad Students** (R=rotation) √CNLM Award $NRSA/NSF	**Undergraduates** *UROP, **#**Bio199, **@**NIDA Funded √CNLM Award
Hannah Schoch (2015-17)	Mitchell Farrell (2016-Present) $√√	Erik Castillo
	Sophia Levis (MD/PhD; 2018-Present) √$	Jenny Cevallos***#**
	Julian Quintanilla (2017-18) $	Leyu Chiu
	Rianne Campbell (R;2016)	Christopher Cross
	Yasmine Sherafat (R; 2017) $√	Gregory de Carvalho
	Andrew Chen (R; 2017)	Jasmine Heyer
	Elizabeth Hubbard (R; 2018)	Jeff Huang***#**
	Rachael Hokensen (R; 2018)	Michelle Huerta**@**
	Abigail Flores (R, 2020)	Christine Khanbijian**#**
	Maricela Martinez (R, 2020)	Gagandeep Lal
		Stephanie Lenogue**@**
		Siyu Liu**#**
		Adam Manoogian
		Iohanna Pagnoncelli
		Gerardo Rojas**@**
		Eden Harder***#**
		Christina Perrone**#**
		Drew Justeson****#**
		Samantha Rodriguez**#**
		Jeanine Esteban****#**√
		Johanna Montesinos****#**
		Yiyan Xie
		Qiying Ye

		Jorge Mendoza√

Outreach and Commitment to Diversity:

Neuroscience Outreach:

--Presentation to OC Psychiatric Association (2019)
--Nu Rho Psi "Spotlight Neuroscientist," Talk/lunch/lab tour with UCI Neuroscience Club (2019)
--Center for Neurobiology of Learning and Memory High School Lecture on Addiction (2019)
--Volunteer Outreach, Addiction Awareness: Compton Unified High School District (2019)
--Myrtle Philip Community School, (6th grade), Whistler, BC, Canada (2018)
--Bozeman, MT High School Outreach (2015)
–Medical University of South Carolina Brain Awareness Week (2011-14)
–Ashley Hall High School research and medicine immersion (2010-14)

Research Talks to URM-Oriented Universities and Groups:

--Building Infrastructure Leading to Diversity Colloquium; Cal State Long Beach (2018)
--Minority Science Training Program; UC Irvine (2015, 2018, 2019, 2020)

Mentoring:

--NIDA Diversity Summer Internship Program (2015-17)
--Postdoc Association career dialogue panel (2016-17)
--Current Lab Composition: 55% URM, 64% Female
--MSTP Retreat, group leader (2019)

Reviewing:

--Graduate Women in Science National Fellowship, Reviewer (2019)
--NSF GRFP Fellowship, Reviewer (2019)