

Matthew Pomrenze

- Instructor, Psychiatry and Behavioral Sciences
- Instructor, Psych/Major Laboratories and Clinical & Translational Neurosciences Incubator

Bio

ACADEMIC APPOINTMENTS

- Instructor, Psychiatry and Behavioral Sciences

Publications

PUBLICATIONS

- **Dopamine and serotonin inversely modulate D2 medium spiny neurons to regulate cocaine reward.** *Nature communications*
Cardozo Pinto, D. F., Guo, M. Y., Pomrenze, M. B., Morishita, W., Li, M. X., Zweifel, L. S., Eshel, N., Malenka, R. C.
2026
- **I've got a friend somewhere: control of social behavior across striatal subregions.** *Frontiers in behavioral neuroscience*
Li, M. X., Baek, J., Guo, M. Y., Pomrenze, M. B., Chen, A. P.
2026; 20: 1763517
- **Serotonin modulates nucleus accumbens circuits to suppress aggression in mice.** *Nature communications*
Zhang, Z., Touponse, G. C., Alderman, P. J., Yassine, T., Pomrenze, M. B., Harris, T. W., Shank, A. N., Malenka, R. C., Eshel, N.
2026
- **Cholinergic modulation of dopamine release drives effortful behaviour.** *Nature*
Touponse, G. C., Pomrenze, M. B., Yassine, T., Denomme, N., Wang, M., Mehta, V., Zhang, Z., Malenka, R. C., Eshel, N.
2026
- **I've got a friend in you: How the brain socializes during opioid withdrawal.** *Neuron*
Zhang, Z., Pomrenze, M. B., Eshel, N.
2025; 113 (21): 3498-3500
- **5-HT2C receptors in the nucleus accumbens constrain the rewarding effects of MDMA.** *Molecular psychiatry*
Pomrenze, M. B., Vaillancourt, S., Salgado, J. S., Raymond, K. B., Llorach, P., Sacai, H., Rijsketic, D. R., Hietamies, T. M., Touponse, G. C., Cardozo Pinto, D. F., Rastegar, Z., Casey, A. B., Eshel, et al
2025
- **Ketamine evokes acute behavioral effects via μ -opioid receptor expressing neurons of the central amygdala.** *Biological psychiatry*
Pomrenze, M. B., Vaillancourt, S., Llorach, P., Rijsketic, D. R., Casey, A. B., Gregory, N., Zhao, W., Girard, T. E., Mattox, K. T., Salgado, J. S., Malenka, R. C., Heifets, B. D.
2025
- **Opponent control of reinforcement by striatal dopamine and serotonin.** *Nature*
Cardozo Pinto, D. F., Pomrenze, M. B., Guo, M. Y., Touponse, G. C., Chen, A. P., Bentzley, B. S., Eshel, N., Malenka, R. C.
2024
- **5-HT2Creceptors in the nucleus accumbens constrain the rewarding effects of MDMA.** *bioRxiv : the preprint server for biology*
Pomrenze, M. B., Vaillancourt, S., Salgado, J. S., Raymond, K. B., Llorach, P., Touponse, G. C., Cardozo Pinto, D. F., Rastegar, Z., Casey, A. B., Eshel, N., Malenka, R. C., Heifets, B. D.
2024

- **Myelin plasticity in the ventral tegmental area is required for opioid reward.** *Nature*
Yalçın, B., Pomrenze, M. B., Malacon, K., Drexler, R., Rogers, A. E., Shamardani, K., Chau, I. J., Taylor, K. R., Ni, L., Contreras-Esquivel, D., Malenka, R. C., Monje, M.
2024
- **MDMA enhances empathy-like behaviors in mice via 5-HT release in the nucleus accumbens.** *Science advances*
Rein, B., Raymond, K., Boustani, C., Tuy, S., Zhang, J., St Laurent, R., Pomrenze, M. B., Borooun, P., Heifets, B., Smith, M., Malenka, R. C.
2024; 10 (17): eadl6554
- **Opioid receptor expressing neurons of the central amygdala gate behavioral effects of ketamine in mice.** *bioRxiv : the preprint server for biology*
Pomrenze, M. B., Vaillancourt, S., Llorach, P., Rijsketic, D. R., Casey, A. B., Gregory, N., Salgado, J. S., Malenka, R. C., Heifets, B. D.
2024
- **Opioidergic tuning of social attachment: reciprocal relationship between social deprivation and opioid abuse** *Frontiers in Neuroanatomy*
Galiza Soares, J. A., Sutley-Koury, S. N., Pomrenze, M. B., Tucciarone, J. M.
2025; 18: 1521016
- **Opioidergic tuning of social attachment: reciprocal relationship between social deprivation and opioid abuse.** *Frontiers in neuroanatomy*
Galiza Soares, J. A., Sutley-Koury, S. N., Pomrenze, M. B., Tucciarone, J. M.
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- **UNRAVELing the synergistic effects of psilocybin and environment on brain-wide immediate early gene expression in mice.** *Neuropsychopharmacology : official publication of the American College of Neuropsychopharmacology*
Rijsketic, D. R., Casey, A. B., Barbosa, D. A., Zhang, X., Hietamies, T. M., Ramirez-Ovalle, G., Pomrenze, M. B., Halpern, C. H., Williams, L. M., Malenka, R. C., Heifets, B. D.
2023
- **UNRAVELing the synergistic effects of psilocybin and environment on brain-wide immediate early gene expression in mice.** *bioRxiv : the preprint server for biology*
Rijsketic, D. R., Casey, A. B., Barbosa, D. A., Zhang, X., Hietamies, T. M., Ramirez-Ovalle, G., Pomrenze, M., Halpern, C. H., Williams, L. M., Malenka, R. C., Heifets, B. D.
2023
- **Modulation of 5-HT release by dynorphin mediates social deficits during opioid withdrawal.** *Neuron*
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2022
- **Somatodendritic Release of Cholecystokinin Potentiates GABAergic Synapses Onto Ventral Tegmental Area Dopamine Cells.** *Biological psychiatry*
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Pomrenze, M. B., Walker, L. C., Giardino, W. J.
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- **Love it or Leave it: Differential Modulation of Incentive Motivation by Corticotropin-Releasing Factor Neurons.** *Biological psychiatry*
Pomrenze, M. B., Marinelli, M.
2021; 89 (12): 1113-1115
- **Extended Amygdala Neuropeptide Circuitry of Emotional Arousal: Waking Up on the Wrong Side of the Bed Nuclei of Stria Terminalis.** *Frontiers in behavioral neuroscience*
Giardino, W. J., Pomrenze, M. B.
2021; 15: 613025
- **Dissecting neural mechanisms of prosocial behaviors.** *Current opinion in neurobiology*

- Walsh, J. J., Christoffel, D. J., Wu, X., Pomrenze, M. B., Malenka, R. C.
2020; 68: 9–14
- **A New Look at the Role of Mesoamygdaloid Dopamine Neurons in Aversive Conditioning.** *The Journal of neuroscience : the official journal of the Society for Neuroscience*
Cardozo Pinto, D. F., Taniguchi, L. n., Norville, Z. C., Pomrenze, M. B.
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 - **Differential regulation of alcohol consumption and reward by the transcriptional cofactor LMO4.** *Molecular psychiatry*
Maiya, R. n., Pomrenze, M. B., Tran, T. n., Tiwari, G. R., Beckham, A. n., Paul, M. T., Dayne Mayfield, R. n., Messing, R. O.
2020
 - **Dissecting the Roles of GABA and Neuropeptides from Rat Central Amygdala CRF Neurons in Anxiety and Fear Learning.** *Cell reports*
Pomrenze, M. B., Giovanetti, S. M., Maiya, R., Gordon, A. G., Kreeger, L. J., Messing, R. O.
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 - **Inactivation of a CRF-dependent amygdalofugal pathway reverses addiction-like behaviors in alcohol-dependent rats.** *Nature communications*
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 - **A Corticotropin Releasing Factor Network in the Extended Amygdala for Anxiety.** *The Journal of neuroscience : the official journal of the Society for Neuroscience*
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 - **Novel Small-Molecule Inhibitors of Protein Kinase C Epsilon Reduce Ethanol Consumption in Mice.** *Biological psychiatry*
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Stelly, C. E., Pomrenze, M. B., Cook, J. B., Morikawa, H.
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 - **DAT isn't all that: cocaine reward and reinforcement require Toll-like receptor 4 signaling.** *Molecular psychiatry*
Northcutt, A. L., Hutchinson, M. R., Wang, X., Baratta, M. V., Hiranita, T., Cochran, T. A., Pomrenze, M. B., Galer, E. L., Kopajtic, T. A., Li, C. M., Amat, J., Larson, G., Cooper, et al
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