Stanford

Matthew Pomrenze

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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.
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- **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*
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  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., Boroon, P., Heifets, B., Smith, M., Malenka, R. C.
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- **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.
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- **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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- **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

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  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.
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- **Modulation of 5-HT release by dynorphin mediates social deficits during opioid withdrawal.** *Neuron*
  Pomrenze, M. B., Cardozo Pinto, D. F., Neumann, P. A., Llorach, P., Tucciarone, J. M., Morishita, W., Eshel, N., Heifets, B. D., Malenka, R. C.
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- **Somatodendritic Release of Cholecystokinin Potentiates GABAergic Synapses Onto Ventral Tegmental Area Dopamine Cells.** *Biological psychiatry*
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- **Friend of the Devil: Negative Social Influences Driving Substance Use Disorders.** *Frontiers in behavioral neuroscience*
  Pomrenze, M. B., Paliarin, F., Maiya, R.
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- **Gray areas: Neuropeptide circuits linking the Edinger-Westphal and Dorsal Raphe nuclei in addiction.** *Neuropharmacology*
  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.
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- **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.

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- **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*
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- **Differential regulation of alcohol consumption and reward by the transcriptional cofactor LMO4.** *Molecular psychiatry*
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  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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