

Publications & Research Impact

Publications & Research Impact

- [Prelimbic and infralimbic neurons signal distinct aspects of appetitive instrumental behavior.](#)
 - Published: *PLoS One*, Feb 2013
 - Authors: Burgos-Robles, A., Bravo-Rivera, H., & Quirk, G. J.
 - Description: Examined distinct roles of prefrontal and infralimbic neurons in appetitive behavior. This foundational study highlights the neural circuits underlying instrumental learning and decision-making.
- [Long-range GABAergic neurons in the prefrontal cortex modulate behavior.](#)
 - Published: *Journal of Neurophysiology*, Nov 2015
 - Authors: Bravo-Rivera, C., Diehl, M. M., Roman-Ortiz, C., Rodriguez-Romaguera, J., Rosas-Vidal, L. E., Bravo-Rivera, H., Quinones-Laracuenta, K., & Do-Monte, F. H.
 - Description: Provided critical commentary on long-range GABAergic projections in the prefrontal cortex, with implications for anxiety-related disorders and future research directions.
- [NeuroBoricuas: a novel approach for incorporating neuroscience education in Puerto Rico's schools.](#)
 - Published: *HEAd'18*, Dec 2018
 - Authors: Bravo-Rivera, C., Díaz-Ríos, M., Aldarondo-Hernández, A., Santos-Vera, B., Ramos-Medina, L., De Jesús-Burgos, M. I., Bravo-Rivera, H., Torrado, A., Cabezas-Bou, E., Cruz-Lopez, F., Colón-Mercado, J., Otero-Rivera, J., Rolon-Reyes, K., Méndez-González, M., Ferrer-Acosta, Y., Zayas-Santiago, A., Tejeda, F., Merced, A., Quintero-Martínez, Z., Landivar, A., Colón-Cruz, L., Crooke-Rosado, J., Rivera-Aponte, D., Acevedo-Canabal, A., Sosa-Lloréns, M. A., & Quijano-Rivera, E.
 - Description: Introduced NeuroBoricuas, an innovative initiative integrating neuroscience education in Puerto Rican schools, emphasizing impactful outreach and curriculum development strategies.
- [Individual variability in behavior and functional networks predicts vulnerability using an animal model of PTSD.](#)
 - Published: *Nature Communications*, May 2019
 - Authors: Dopfel, D., Perez, P. D., Verbitsky, A., Bravo-Rivera, H., Ma, Y., Quirk, G. J., & Zhang, N.

- Description: Investigated behavioral and network predictors of PTSD vulnerability, advancing insights into stress resilience and vulnerability mechanisms.
- **Characterizing Different Strategies for Resolving Approach-Avoidance Conflict.**
 - Published: *Frontiers in Neuroscience*, Feb 2021
 - Authors: Bravo-Rivera, H., Rubio Arzola, P., Caban-Murillo, A., Velez-Aviles, A. N., Ayala-Rosario, S. N., & Quirk, G. J.
 - Description: Developed a task that revealed distinct mechanisms of approach-avoidance conflicts, advancing understanding of adaptive decision-making.
- **Neuropeptide System Regulation of Prefrontal Cortex Circuitry: Implications for Neuropsychiatric Disorders.**
 - Published: *Frontiers in Neural Circuits*, Jun 2022
 - Authors: Casello, S. M., Flores, R. J., Yarur, H. E., Wang, H., Awanyai, M., Arenivar, M. A., Jaime-Lara, R. B., Bravo-Rivera, H., & Tejeda, H. A.
 - Description: Explored neuropeptide regulation in the prefrontal cortex, highlighting potential therapeutic applications for neuropsychiatric conditions.
- **Prefrontal cortical dynorphin peptidergic transmission constrains threat-driven behavioral and network states**
 - Published: *Neuron*, Jun 2024
 - Authors: Wang, H., Flores, R. J., Yarur, H. E., Limoges, A., Bravo-Rivera, H., Casello, S. M., Loomba, N., Enriquez-Traba, J., Arenivar, M., Wang, Q., Ganley, R., Ramakrishnan, C., Fenno, L. E., Kim, Y., Deisseroth, K., Or, G., Dong, C., Hoon, M. A., Tian, L., & Tejeda, H. A.
 - Description: Demonstrated the critical role of dynorphin in regulating prefrontal mechanisms during motivational conflict resolution.

Preprints and Works in Review

- **Innate fear responses are reflected in the blood epigenome of rhesus macaques.**
 - Status: Preprint in Resubmission *bioRxiv*, Nov 2020
 - Authors: Hector Bravo-Rivera, Roy Lardenoije, Dimaris Merced, Adaris Mas-Rivera, James E. Ayala, Joana P. Gonçalves, Antonia V. Seligowski, Tanja Jovanovic, Kerry J. Ressler, Torsten Klengel, Gregory J. Quirk
 - Description: Linked innate fear responses to blood epigenetic markers, providing key insights into fear-related biomarkers and translational research.

- [**A novel epigenetic clock for rhesus macaques unveils an association between early life adversity and epigenetic age acceleration.**](#)
 - Status: Preprint *bioRxiv*, Oct 2024
 - Authors: Bronk, G., Lardenoije, R., Koolman, L., Klengel, C., Dan, S., Howell, B. R., Morin, E. L., Meyer, J. S., Wilson, M. E., Ethun, K. F., Alvarado, M. C., Raper, J., Bravo-Rivera, H., Kenwood, M. M., Roseboom, P. H., Quirk, G. J., Kalin, N. H., Binder, E. B., Sanchez, M. M., & Klengel, T.
 - Description: Contributed to the development of an innovative epigenetic clock, linking early adversity to accelerated aging in rhesus macaques.

- **Prefrontal dynorphin signaling dynamically regulates threat responses to optimize motivational conflict resolution.**
 - Status: Under Revision in *Nature Communications*/ Preprint available upon request,
 - Authors: Bravo-Rivera, H., Limoges, A., C.T., L., Arenivar, M., Wang, H., Flores, R. F., Bravo-Rivera, C., & Tejeda, H.
 - Description: Demonstrated the role of prefrontal dynorphin signaling in adaptive conflict resolution through advanced techniques, including fiber photometry and genetic knockdowns. Findings elucidate the mechanisms of adaptive decision-making under stress, with implications for neuropsychiatric disorders.