

Thomas (Tom) William Earnest

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EDUCATION

- Doctor of Philosophy, Computational and Data Sciences** **2026 (expected)**
Division of Computational and Data Sciences
Washington University in St. Louis
- Master of Science, Psychiatric Research** **2017**
Institute of Psychiatry, Psychology, and Neuroscience
King's College London
- Bachelor of Arts, Biology with Concentration in Neuroscience** **2016**
Grinnell College

RESEARCH EXPERIENCE

- PhD Research** **2020 - current**
Washington University in St. Louis
 - Advisor: Aristeidis Sotiras
 - Research project applying machine learning to study multi-modal neuroimaging in Alzheimer's Disease
- Research Technician II** **2019 - 2020**
Washington University in St. Louis
 - Supervisors: Alexxai Kravitz, Meaghan Creed
 - Research assistant studying basal ganglia circuits encoding reward and learning in mice
- NIH Intramural Research Training Award** **2017-2019**
National Institute of Dental and Craniofacial Research
 - Supervisor: Mark Hoon, Hans Jürgen Solinski
 - Research internship studying somatosensory processing in the peripheral nervous system in mice
- Master's Thesis Research** **2016-2017**
Institute of Psychiatry, Psychology, and Neuroscience
 - Advisors: Elizabeth Shephard, Patrick Bolton
 - Thesis research project using actigraphy to study ADHD in child and adolescent patients with tuberous sclerosis complex as part of the TS2000 study
- Grinnell College Mentored Advanced Project** **2015 - 2016**
Grinnell College
 - Advisor: Nancy Rempel-Clower
 - Independent research project studying glucocorticoid-induced anxiety and dendritic remodeling in adolescent rats

PUBLICATIONS

- Earnest, T.,** Shephard, E., Tye, C., McEwen, F., Woodhouse, E., Liang, H., Sheerin, F., & Bolton, P. F. (2020). Actigraph-Measured Movement Correlates of Attention-Deficit/Hyperactivity Disorder (ADHD) Symptoms in Young People with Tuberous Sclerosis Complex (TSC) with and without Intellectual

Disability and Autism Spectrum Disorder (ASD). *Brain Sciences*, 10(8), 491.

<https://doi.org/10.3390/brainsci10080491>

Matikainen-Ankney, B. A., **Earnest, T.**, Ali, M., Casey, E., Wang, J. G., Sutton, A. K., Legaria, A. A., Barclay, K. M., Murdaugh, L. B., Norris, M. R., Chang, Y.-H., Nguyen, K. P., Lin, E., Reichenbach, A., Clarke, R. E., Stark, R., Conway, S. M., Carvalho, F., Al-Hasani, R., ... Kravitz, A. V. (2021). An open-source device for measuring food intake and operant behavior in rodent home-cages. *eLife*, 10, e66173. <https://doi.org/10.7554/eLife.66173>

Murphy, C., Chang, Y.-H., Pareta, R., Li, J.-N., **Earnest, T.**, Tooley, J., Vachez, Y. M., Gereau, R. W., Copits, B. A., Kravitz, A. V., & Creed, M. C. (2021). Modeling features of addiction with an oral oxycodone self-administration paradigm. *BioRxiv*, 2021.02.08.430180.

<https://doi.org/10.1101/2021.02.08.430180>

Shephard, E., McEwen, F. S., **Earnest, T.**, Friedrich, N., Mörtl, I., Liang, H., Woodhouse, E., Tye, C., Bolton, P. F., & Team, T. S. (2022). Oscillatory neural network alterations in young people with tuberous sclerosis complex and associations with co-occurring symptoms of autism spectrum disorder and attention-deficit/hyperactivity disorder. *Cortex*, 146, 50–65.

Solinski, H. J., Dranchak, P., Oliphant, E., Gu, X., **Earnest, T. W.**, Braisted, J., Inglese, J., & Hoon, M. A. (2019). Inhibition of natriuretic peptide receptor 1 reduces itch in mice. *Science Translational Medicine*, 11(500), eaav5464.

Solinski, H. J., Kriegbaum, M. C., Tseng, P.-Y., **Earnest, T. W.**, Gu, X., Barik, A., Chesler, A. T., & Hoon, M. A. (2019). Nppb neurons are sensors of mast cell-induced itch. *Cell Reports*, 26(13), 3561–3573.

Vachez, Y. M., Tooley, J. R., Abiraman, K., Matikainen-Ankney, B., Casey, E., **Earnest, T.**, Ramos, L. M., Silberberg, H., Godynnyuk, E., Uddin, O., Marconi, L., Le Pichon, C. E., & Creed, M. C. (2021). Ventral arkypallidal neurons inhibit accumbal firing to promote reward consumption. *Nature Neuroscience*, 1–12. <https://doi.org/10.1038/s41593-020-00772-7>

PRESENTATIONS

Earnest, T. W., Solinski, H. J., Kriegbaum, M. C., Tseng, P. Y., Gu, X., Barik, A., ... Hoon, M. A. (2019, May). *Nppb-neurons are sensors of mast cell-induced itch*. Poster at NIH Postbac Poster Day. Bethesda, MD.

Earnest, T. W., Solinski, H. J., Kriegbaum, M. C., Tseng, P. Y., Gu, X., Barik, A., ... Hoon, M. A. (2019, April). *Nppb-neurons are sensors of mast cell-induced itch*. Poster at the NIDCR Fellows Retreat. Washington, DC.

Earnest, T. (2017, July). *Using actigraphy to measure ADHD symptoms in tuberous sclerosis complex*. Poster at the IoPPN Psychiatric Research MSC year end session. London, UK.

Earnest, T. (2016, February). *Behavioral and morphological effects of stress in adolescent rats*. Talk in the Biology Student Seminar Series at Grinnell College. Grinnell, IA.

Earnest, T., Yetter, M. (2015, November). *Behavioral and morphological effects of stress in adolescent rats*. Talk in the Psychology Student Seminar Series at Grinnell College. Grinnell, IA.

Yetter, M., **Earnest, T.**, Rempel-Clower, N. (2015, October). *Acute corticosterone treatment increases anxiety and dendritic elongation and arborization in the orbitofrontal cortex in mid-adolescent but not early-adolescent rats*. Poster at the Faculty for Undergraduate Neuroscience at the Society for Neuroscience Annual Meeting. Chicago, IL.

Earnest, T. (2015, September). *Acute stress increases anxiety behaviors in mid-adolescent rats and may cause dendritic elongation & arborization in the orbitofrontal cortex.* Poster at Iowa State Neuroscience Research Day. Ames, IA.

AWARDS

- Outstanding Poster Award at NIH Postbac Poster Day (2019)
- NIH Postbaccalaureate Intramural Research Training Award (2017)
- Dean's Medal (2017): Best overall performance in all postgraduate taught programs in the Institute of Psychology, Psychiatry, and Neuroscience
- Sir Robin Murray Prize (2017): Best overall performance in the Psychiatric Research MSc
- Honorable Mention for poster presented at the Iowa State Neuroscience Research Day (2015)
- Dean's List for all semesters at Grinnell College (2012-2016)
- Trustee Honor Scholarship at Grinnell College (2012-2016)

TECHNICAL EXPERIENCE

- Programming
 - Proficient: Python
 - Experienced: R, Bash
 - Familiar: MATLAB, Java
 - Projects available at <https://github.com/earnestt1234/>
- Software experience:
 - GitHub/Git
 - Graphpad Prism
 - SPSS
 - Microsoft Office