

Justin D. Tubbs | Curriculum Vitae

Sai Ying Pun, Hong Kong

+852 5992 6619

tubbsjd@gmail.com | [Google Scholar Profile](#)

Education

- 2018 - Present **Ph.D., Behavioural Genetics and Bioinformatics**
The University of Hong Kong, Hong Kong
Department of Psychiatry, Li Ka Shing Faculty of Medicine
Pak C. Sham, PhD & Clara S. Tang, PhD
- 2013 - 2017 **B.S., Biology**
Virginia Commonwealth University, Richmond, Virginia, USA
Minor: Chemistry, Certificate of Global Education
Major GPA: 3.7
- 2013 - 2017 **B.S., Psychology**
Virginia Commonwealth University, Richmond, Virginia, USA
Major GPA: 4.0
- Summer 2015 **Summer Course in Chinese**
Shanghai Jiao Tong University, Shanghai, China

Academic Positions

- 9/17 – 6/18 **Post-Baccalaureate Fellow**
Pain and Integrative Neuroscience Branch
NCCIH, National Institutes of Health, Bethesda, Maryland
M. Catherine Bushnell, PhD (PI), Eleni Frangos, PhD (mentor), Laura Case, PhD (mentor)
- 1/16 – 5/17 **Research Assistant**
Spit for Science: The VCU Student Survey
Virginia Commonwealth University, Richmond, Virginia
Danielle M. Dick, PhD (PI), Kenneth S. Kendler, MD (PI), Jeanne E. Savage, PhD (mentor)
- 1/15 – 5/17 **Research Intern**
Social and Affective Neuroscience Laboratory
Virginia Commonwealth University, Department of Psychology, Richmond, Virginia
Kirk Warren Brown, PhD (PI), Daniel R. Berry, PhD (mentor)

Publications

- Tubbs JD***, Hwang LD*, Luong J, Evans DM, Sham PC (Accepted). Modeling Parent-Specific Genetic Nurture in Families with Missing Parental Genotypes: Application to Birthweight and BMI. *Behavior Genetics*.
- Hwang LD*, **Tubbs JD***, Luong J, Lundberg M, Moen G, Sham PC, Cuellar-Partida G, Evans DM (2020). Estimating indirect parental genetic effects on offspring phenotypes using virtual parental genotypes derived from sibling and half sibling pairs. *PLoS Genetics*. <https://doi.org/10.1371/journal.pgen.1009154>
- Li, M., Li, Y., Qin, H., **Tubbs, J.D.**, Li, M., Qiao, C., Lin, J., Li, Q., Fan, F., Guo, M., Huang, J., Tong, J., Yang, F., Tan, Y., Yao, Y. (2020). Genome-wide DNA methylation analysis of peripheral blood cells derived from patients with first-episode schizophrenia in the Chinese Han population. *Molecular Psychiatry*. <https://doi.org/10.1038/s41380-020-00968-0>

- Tubbs, J.D.**, Ding, J., Baum, L., Sham, P.C. (2020). Systemic neuro-dysregulation in depression: Evidence from genome-wide association. *European Neuropsychopharmacology*. <https://doi.org/10.1016/j.euroneuro.2020.08.007>
- Case, L.K., Liljencrantz, J., McCall, M.V., Bradson, M., Nécaise, A., **Tubbs, J.**, Olausson, H., Wang, B., & Bushnell, M.C. (2020). Pleasant Deep Pressure: Expanding the Social Touch Hypothesis. *Neuroscience*. <https://doi.org/10.1016/j.neuroscience.2020.07.050>
- Tubbs, J.D.**, Porsch, R., Cherny, S., & Sham, P.C. (2020). The Genes We Inherit and Those We Don't: Maternal Genetic Nurture and Child BMI Trajectories. *Behavior Genetics*. <https://doi.org/10.1007/s10519-020-10008-w>
- Tubbs, J.D.**, Ding, J., Baum, L., Sham, P.C. (2020). Immune dysregulation in depression: Evidence from genome-wide association. *Brain, Behavior, & Immunity – Health*. <https://doi.org/10.1016/j.bbih.2020.100108>
- Tubbs J.D.**, Zhang Y.D., Sham P.C. (2020). Intermediate confounding in trio relationships: The importance of complete data in effect size estimation. *Genetic Epidemiology*. 1–5. <https://doi.org/10.1002/gepi.22294>
- Tubbs, J. D.**, Savage, J. E., Adkins, A. E., Amstadter, A. B., & Dick, D. M. (2018). Mindfulness Moderates the Relation Between Trauma and Anxiety Symptoms in College Students. *Journal of American College Health*. <https://doi.org/10.1080/07448481.2018.1477782>

*Joint First Authors

Manuscripts Under Review

Case, L.K., Liljencrantz, J., Madian, N., Nécaise, A., **Tubbs, J.D.**, McCall, M., Bradson, M.L., Szczot, M., Pitcher, M.H., Ghitani, G., Frangos, E., Cole, J., Bharucha, D., Saade, D., Ogata, T., Donkervoort, S., Foley, R., Bönnemann, C.G., Olausson, H., Bushnell, M.C., & Chesler, A.T. (Under Review). Innocuous pressure sensation requires A-type afferents but not functional PIEZO2 channels in humans. *Nature Communications*.

Technical Skills

Programming Languages: R, Python, Linux Command Line

Statistical Software: SPSS, Prism

Specialized Software: PLINK (genetic analysis), FSL (neuroimaging analysis), Biopac (Autonomic Data Collection), Acknowledge (Autonomic Data Analysis)

Languages

English - native

Mandarin Chinese - intermediate

Wu Chinese (Shanghai Dialect) - elementary

Grant Applications (as Co-Applicant)

PTSD and Depressive Symptoms amid Social Unrest and COVID-19: a Gene-Environment Interaction (GxE) Study in a Community Sample of Young People in Hong Kong

Research Grants Council, Hong Kong

PI: Eric Chen, PhD, Department of Psychiatry, The University of Hong Kong

Deep phenotyping and genetic analysis across schizophrenia and affective spectrum disorders.

National Natural Science Foundation of China

PI: Tao Li, PhD, West China Hospital, Sichuan University

Professional Service

Ad Hoc Reviewer, *Behavior Genetics*

Supervision

Wynn Cheung, Research Intern (MBBS)

Justin P. Cheung, Research Intern (Undergraduate)

Adrianne Cheung, Research Intern (Secondary School)

Research Experience

University of Hong Kong, Li Ka Shing Faculty of Medicine, Department of Psychiatry

10/20 – present **Optimal Smoothing of Time-to-Event Curves from Interval Censored Data**

Developing a novel methodology for improving the estimation and prediction accuracy of onset curves from longitudinal data.

- Develop and implement iterative expectation-maximization algorithm for estimating time-to-event curves from interval data
- Develop and test optimal parameters for likelihood penalization
- Identify efficient numerical optimization of likelihood estimation procedure

3/19 – present **Estimating Parental Genetic Effects from Incomplete Data**

Using imputed parental genotypes to estimate maternal and paternal genotypic effects on child phenotypes

- Derive closed-form formulae for mixed models to estimate power and bias
- Develop and test imputation routine for partial recovery of missing parental genotypes
- Apply mixed models using real and imputed data to estimate parental genetic effects

8/18-12/19 **Genetic Nurture and Child BMI Trajectories**

Estimating the effects of maternal genotypes on the child phenotype above and beyond the direct effects of alleles transmitted to the child using polygenic risk scores.

- Pre-process genetic and phenotypic data for calculating maternal and child polygenic scores
- Develop a mixed model for estimating longitudinal effects of maternal and child polygenic scores

National Institutes of Health, National Center for Complementary and Integrative Health

1/18 – 6/18 **Characterizing Brain and Behavioral Responses in a Pain-Insensitive Patient**

Using structural and functional brain imaging along with behavioral testing to understand the pathophysiology of a patient lacking pain perception.

M. Catherine Bushnell (PI), Eleni Frangos

- Collect, pre-process, and analyze structural, fMRI, and DTI brain imaging data
- Collect, pre-process, and analyze electrocardiogram (for heart rate variability), skin conductance, respiratory, and blood pressure data using AcqKnowledge software (Biopac)

9/17 – 6/18 **Effects of External Ear Stimulation on Pain Perception and Mood**

Examining the effects of transcutaneous vagal nerve stimulation on pain perception, mood, and autonomic response to heat pain stimuli to determine whether vagus stimulation-induced changes in pain perception are mediated by changes in mood.

M. Catherine Bushnell (PI), Eleni Frangos

- Collect, pre-process, and analyze electrocardiogram (for heart rate variability), skin conductance, respiratory, and blood pressure data using AcqKnowledge software (Biopac)
- Screen and schedule participants

9/17 – 6/18

Sensory and Opioid Mechanisms of Affective Touch

Analyzing fMRI brain activity in response to simulated affective touch and pain before and after endogenous opioid blockade in a controlled, double-blind crossover design.

M. Catherine Bushnell (PI), Laura Case

- Collect, pre-process, and analyze (using FEAT) fMRI data in FSL
- Administer affective touch (brushing and massage-like compression) and heat pain stimuli
- Screen and schedule participants

Virginia Commonwealth University, Spit for Science: The VCU Student Survey

1/16 – 5/17

Spit for Science: The VCU Student Survey

Longitudinal survey examining the genetic, environmental, and developmental factors associated with emotional health and substance use outcomes in college students.

Danielle M. Dick (co-PI), Kenneth S. Kendler (co-PI), Jeanne Savage

- Analyze and interpret a large (N > 9000) longitudinal dataset using SPSS and R
- Prepare manuscripts summarizing findings and present results at regional conference
- Market, plan, and implement educational events to disseminate findings
- Recruit and brief participants about the research project

Virginia Commonwealth University, Social and Affective Neuroscience Laboratory

5/16 – 5/17

Mindfulness Training and Prosocial Responsiveness in Interracial Interactions

Examining the effects of a three-day mindfulness training intervention versus a sham control on helping behavior, changes in electroencephalography patterns, and components of empathy.

Daniel R. Berry (co-PI), Kirk W. Brown (co-PI)

- Collect, analyze and present psychophysiological, behavioral, and self-report data
- Train junior research assistants on EEG and eye-tracking data collection
- Recruit and schedule participants

1/15 – 5/16

Effects of Brief Mindfulness Induction on Prosocial Behavior

Examining the effects of a brief mindfulness induction versus a control on responsiveness towards an ostracized stranger and the mediating role of motivational components of empathy.

Daniel R. Berry (co-PI), Kirk W. Brown (co-PI)

- Collect, analyze and present behavioral and self-report data
- Train junior research assistants to conduct study protocol

Teaching Experience

7/20 – 8/20

Teaching Assistant, Centre for PanorOmic Sciences Evolution of Civilization (Common Core Course)

The University of Hong Kong, Hong Kong

- Provide instruction and facilitate group discussion during tutorial sessions
- Mark final course assessment projects

8/15 – 5/17

Tutor, VCU Campus Learning Center

Virginia Commonwealth University, Richmond, VA

- Provide academic assistance to students individually, in small groups, and/or during drop-in tutoring sessions
- Collaborate with students to set personal goals and study plans

- Develop aids and propose a lesson plan for tutors to enhance student success

6/16 – 8/16 **Teaching and Residence Assistant, Psychology and Neuroscience Program**
National Student Leadership Conference at American University, Washington, DC

- Developed and led a Social Psychology workshop for high school students
- Lead students on various psychology and neuroscience-related trips and lectures
- Demonstrated interactive neuroscience lab activities to high school students

9/15 – 5/16 **Teaching Assistant, English for Speakers of Other Languages (ESOL)**
William F. Fox Elementary School, Richmond, VA

- Worked with elementary school students from various cultural and language backgrounds to improve their English speaking, listening, reading, and writing proficiency
- Prepared and submitted a proposal for a “Language Buddies” program to enhance students’ learning and encourage cross-cultural engagement

8/14 – 5/15 **Cultural Ambassador and Conversation Partner**
VCU English Language Program, Richmond, VA

- Worked with university-level students both in the classroom and the tutoring center to improve their English language skills and familiarity with American culture

Formal Training

3/19 **International Workshop on Statistical Genetic Methods for Human Complex Traits**
Directors: Benjamin Neale, Ph.D. and David Evans, Ph.D.
Institute for Behavioral Genetics, The University of Colorado, Boulder
Week-long workshop covering state-of-the-art methods for large-scale genomic analyses of complex diseases.

1/18 – 5/18 **Bioinformatics for Analysis of Data Generated by Next Generation Sequencing**
Instructor: Sijung Yun, Ph.D.
NIH – Foundation for Advanced Education in the Sciences
Semester-long course covering preprocessing and analysis of DNA-seq, RNA-seq, and ChIP-seq data

9/17 – 3/18 **Training for certification in Transcranial Magnetic Stimulation (TMS)**
Training provided by: Bruce Luber, Ph.D.
NIH - Noninvasive Neuromodulation Unit
Experimental Therapeutics and Pathophysiology Branch
Training to operate TMS usingBrainsight to collect motor evoked potentials

Professional Presentations

Tubbs, J.D., Zhang Y.D., Sham P.C. *Intermediate confounding in trio relationships: The importance of complete data in effect size estimation*. Invited presentation at the Bristol IRC Reading Group, June 29th, 2020.

Sham, P.C., **Tubbs, J.D.**, Ding, J., & Baum, L. *Progress in Mood Disorder Genetics*. Presented at the 2019 2nd International Emotion and Brain Science Summit Forum. Guangzhou, China

Frangos, E., Liljencrantz, J., **Tubbs, J.D.**, Dable, C.L., Wang B., Saade D., Bharucha-Goebel, D., Bonnemann, C., Chesler, A., & Bushnell, M.C. *Behavioral and neural correlates of noxious stimuli in a pain-insensitive patient: A case study*. Poster presented at the 2019 NIH Pain Consortium.

- Tubbs, J.D.**, Porsch, R.M., Cherny, S.S. & Sham, P.C. *Genetic Nurture and BMI: The Environmental Effect of Non-Transmitted Maternal Variants*. Poster presented at the 2019 International Workshop on Statistical Genetic Methods for Human Complex Traits. Boulder, CO
- Frangos, E., Liljencrantz, J., **Tubbs, J.D.**, Dable, C.L., Wang B., Saade D., Bharucha-Goebel, D., Bonnemann, C., Chesler, A., & Bushnell, M.C. *Neural and behavioral correlates of noxious stimuli in a pain-insensitive patient: A case study*. Poster presented at the 2019 Society for Neuroscience Conference.
- Case, L.C., McCall, M., Bradson, M., Necaie, A., **Tubbs, J.D.**, Liljencrantz, J., Olausson, H., & Bushnell, M.C. *Effect of Naloxone on Touch Intensity and Pleasantness*. Poster presented at the 2019 Scientific Meeting of the American Pain Society.
- Wein, P.Y., Frangos, E., Liljencrantz, J., **Tubbs, J.D.**, Dable, C.L., Wang B., Saade D., Bharucha-Goebel, D., Bonnemann, C., Chesler, A., & Bushnell, M.C. (2018), *Autonomic Correlates of Tonic Noxious Heat in a Pain Insensitive Patient: A Case Study*. Poster presented at the 2018 National Institutes of Health Summer Poster Day.
- Tubbs, J.D.**, Necaie, A. N., Case, L.C., & Bushnell, M.C. (2018, May) *Probing the Role of Large Myelinated Fibers in Deep Pressure Sensation*. Poster presented at NIH Postbac Poster Day. Bethesda, MD
- Dable, C.L., **Tubbs, J.D.**, Frangos, E., Liljencrantz, J., & Bushnell, M.C. (2018, May) *Brain responses to noxious stimuli in a pain-insensitive patient: A Case Study*. Poster presented at NIH Postbac Poster Day.
- Tubbs, J.D.**, Adkins, A.E., Dick, D.M., & Savage, J.E. (2017, April) *The Importance of Being Present Following a Trauma: Mindfulness Moderates the Relationship Between Trauma and Anxiety Symptoms*. Talk presented at the Reid Undergraduate Psychology Research Conference at the University of Virginia. Charlottesville, VA <https://osf.io/jxz2h/>
- Lytle, S., Boparai, A., **Tubbs, J.D.**, Brown, K.W., & Berry, D.R. (2017, April) *Deconstructing Division: Mindfulness Meditation Training Promote in-vivo Interracial Helping Behavior*. Poster presented at 9th Annual VCU Poster Symposium for Undergraduate Research and Creativity.
- Calfat, A., Fields, C., Schramm, J., Lee, R.M., Anderson, J., Bustamante, D., Curran, L., **Tubbs, J.D.**, Brown, K.W., & Berry, D.R. (2017, April) *Mindfulness Dampens Emotion Sharing and Promotes Empathy in Interracial Contexts*. Poster presented at 9th Annual VCU Poster Symposium for Undergraduate Research and Creativity. Richmond, VA
- Tubbs, J. D.**, Finley, M.S., Murphy, K.M., & Savage, J.E. (2016, May) *Pets' Potential: The Effects of Stress on Emotional Health*. Research presented at the Spit for Science Student Research Symposium. Richmond, VA
- Tubbs, J. D.**, Berry, D.R., & Brown, K.W. (2016, April) *Abating Prejudice with Presence: Dispositional Mindfulness Increases Interracial Helping Behavior*. Poster presented at the 8th Annual VCU Poster Symposium for Undergraduate Research and Creativity. Richmond, VA
<http://scholarscompass.vcu.edu/cgi/preview.cgi?article=1230&context=uressposters>