Maryann P. Platt, PhD

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**EDUCATION**

2015-2019 Columbia University, PhD, Neurobiology & Behavior Program, New York, NY

2013-2015 University of California, Irvine, PhD, Developmental and Cell Biology, Irvine, CA

2007-2011 Wesleyan University, BA, Neuroscience & Behavior, Middletown, CT

**WORK EXPERIENCE**

*September 2021-Present* Postdoctoral fellow, Yale University; New Haven, CT

Supervisor: Elena Gracheva

Studying adaptations of hibernators’ vascular systems to withstand extreme annual changes to metabolism demands and hemodynamics.

*November 2019-August 2021* Postdoctoral fellow, J. Craig Venter Institute; Rockville, MD

Supervisor: Norberto González-Juarbe

Investigating the cardiac sequelae of influenza and secondary Streptococcal pneumonia infections using proteomic and molecular techniques.

*May 2019-November 2019* Postdoctoral researcher, Agalliu lab, Columbia University Neurology; New York, NY

*August 2015-May 2019* Graduate student researcher, Neurobiology & Behavior Program, Columbia University, New York, NY. Defense date May 14, 2019.

Supervisor: Dritan Agalliu, PhD

Thesis title: Cellular mechanisms of neurovascular breakdown and neuronal dysfunction following recurrent Group A *Streptococcus* infections in mice

*September 2013-August 2015* Graduate student researcher, Interdepartmental Neuroscience Program, University of California, Irvine; Irvine, CA

Supervisors: Drs. Tallie Z. Baram, MD, PhD; Dritan Agalliu, PhD; Sunil Gandhi, PhD

Rotation projects focused on hippocampal dendritic spine plasticity after multimodal stress, regulation of critical periods in visual cortex, and the CNS immune response in an autoinflammatory mouse model. During my rotations, I learned mouse genetics, local field potential electrophysiological recordings, immunology, and autoimmunity modeling.

*June 2011-August 2013* Research Assistant, Beth Israel Deaconess Medical Center; Boston, MA

Supervisors: Albert Galaburda, MD and Glenn D. Rosen, PhD

Investigated the effects of four candidate dyslexia susceptibility genes on neocortical development and neuronal migration in a rat model of developmental dyslexia.

*January 2010-May 2011* Undergraduate Researcher, Bodznick Lab, Wesleyan University Neuroscience & Behavior Department; Middletown, CT

Supervisor: David Bodznick, PhD

Investigated coding of an adaptive filter mechanism that cancels self-generated noise in the electrosensory nucleus of the little skate (*Raja erinacaea*) using patch clamp.

**SPECIFIC EXPERTISE**

* Neuroanatomy: rat, mouse, and human
* Surgery: *in utero* electroporation, stereotaxic surgery, craniotomy, intraperitoneal and intravenous injections
* Immunology: FACS analysis for nuclear, intracellular, and extracellular markers; in vitro T cell differentiation, ELISA
* Molecular biology: Western blot, qRT-PCR, fresh frozen and fixed perfusion, immunohistochemistry, immunohistochemistry in celloidin-embedded tissue, RNA *in situ* hybridization
* Microscopy: confocal and fluorescence microscopy
* Electrophysiology: *in vivo* patch clamp, *in vivo* field potential recordings
* Proteomics: LC-MS/MS techniques, phosphopeptide enrichment
* Programs: Microsoft Office, Adobe Illustrator, GraphPad Prism, StereoInvestigator, Neurolucida, MATLAB
* Writing: Editing, writing and proofreading for content and grammar from non-English speakers

**TEACHING EXPERIENCE**

*Fall 2017* Preceptor, Columbia University: Introductory neuroanatomy lab session lead by Drs. Kathleen Durkin and Serge Przedborski

* Assisted with set up and materials catalogue
* Co-lead for neuroanatomy small group sessions covering gross human neuroanatomy, neuropsychiatric diseases, and learning and memory

*Spring 2015* Teaching assistant, BioSci 100 Science Writing, taught by Dr. Debra Mauzy-Melitz

* Managed attendance, exam grading, and clicker question scoring for a class of 104 students
* Held weekly TA sessions and moderated an online message board to field student questions
* Designed and gave a lecture to deliver background information on tight junction organization and function

*Fall 2014* Teaching assistant, BioSci 103 Introductory Cell Biology, taught by Dr. Dritan Agalliu

* Managed attendance, TA session schedule, exam grading, and clicker question scoring for a class of 224 students
* Held weekly TA sessions for open attendance, as well as private sessions for three students

*Fall 2010 and Spring 2011* Physics 111 Introductory Physics, taught by Dr. Lynn Westling

* Managed attendance, TA session schedule, exam grading, and clicker question scoring for classes of >100 students
* Held weekly TA sessions for open attendance, as well as pre-exam review sessions

Mentees

* Graduate rotation students
	+ Charlotte Wayne (Dritan Agalliu lab, CUMC)
	+ Alexandra Panzarino (Inbal Israeli lab, CUMC)
	+ Mary Claire Tuohy (Dritan Agalliu and Elizabeth Hillman labs, MD/PhD program, CUMC)
* Undergraduates
	+ Alison Tran, UC Irvine undergraduate class of 2016
	+ Fernanda Pacheco, Columbia University class of 2017
	+ Sarah Chaudhry, Barnard College class of 2018
* High school students
	+ Jake Kerslake, Laguna Beach High School class of 2020

**PUBLICATIONS**

***Original Articles***

**Platt MP**, Lin Y-H, Yu Y, Gonzalez-Juarbe N (Under revision). Direct interkingdom interaction between influenza A virus and *Streptococcus pneumoniae* modulates bacterial metabolism and virulence fitness. *mBio*.

Cantwell AM, Singh H, **Platt MP**, Yu Y, Lin Y-H, Ikeno Y, Hubbard G, Xiang Y, Gonzalez-Juarbe N, Dube PH (2021). Kinetic multi-omic analysis of responses to SARS-CoV-2 infection in a model of severe COVID-19. *Journal of Virology* 2021 Jul 28:JVI0101021.

Park SS, Gonzalez-Juarbe N, Riegler AN, Im H, Hale Y, **Platt, MP**, Croney C, Briles DE, Orihuela CJ (2021). *Streptococcus pneumoniae* binds to host GAPDH on dying lung epithelial cells worsening secondary infection following influenza. *Cell Reports* 35(11).

Lin Y-H, **Platt MP**, Brown D, Yu Y, Gonzalez-Juarbe N (2021). Pandemic influenza infection persists in cardiac tissue and leads to MLKL-dependent proteome remodeling during convalescence. *Circulation Research* 128(5).

Lin Y-H, **Platt MP**, Fu H, Gui Y, Wang Y, Gonzalez-Juarbe N, Zhou D, Yu Y (2020). The global proteome and phosphoproteome landscape of sepsis-induced kidney injury. *Molecular Cell Proteomics* 19(12):2030-2046.

Gonzalez-Juarbe N, Riegler AN, Jureka AS, Gilley RP, Brand JD, Trombley JE, Scott NR, **Platt MP**, Dube PH, Petit CM, Harrod KS, Orihuela CJ (2020). Influenza-induced oxidative stress sensitizes lung cells to bacterial toxin-mediated necroptosis. *Cell Reports* 32, 108062.

**Platt MP**, Bolding KM, Wayne CW, Chaudhry SM, Franks KF, Agalliu D (2020). Th17 lymphocytes drive vascular and neural circuit deficits during post-infectious autoimmune encephalitis. *PNAS* 117(12): 6708-6716.

**Platt MP**, Agalliu D, Cutforth T (2017). Hello from the Other Side: How Autoantibodies Circumvent the Blood-Brain Barrier in Autoimmune Encephalitis. *Frontiers in Immunology* 8:442.

Dileepan T, Smith ED, Knowland D, Hsu M, **Platt MP**, Bittner-Eddy P, Cohen B, Southern P, Latimer E, Harley E, Agalliu D, Cleary PP (2016). Group A Streptococcus intranasal infection promotes CNS infiltration by streptococcal-specific Th17 cells. *Journal of Clinical Investigation* 126(1):303-17.

**Platt MP**, Adler WT, Mehlhorn AJ, Johnson GC, Wright KA, Choi RT, Tsang WH, Poon MW, Yeung SY, Waye MMY, Galaburda AM, Rosen GD (2013). Embryonic disruption of the candidate dyslexia susceptibility gene homolog Kiaa0319-Like results in neuronal migration disorders. *Neuroscience* (248), 585-593.

Adler WT\*, **Platt MP**\*, Mehlhorn AJ, Haight JL, Currier TA, Etchegaray M, Galaburda AM, Rosen GD (2013). Position of neocortical neurons transfected at different gestational ages with shRNA targeted against candidate dyslexia susceptibility genes. *PLoS ONE* 8(5).

***Conference presentations***

2019. “Hijacking the immune response: Bacterial infections and autoimmunity.” Autoimmune Encephalitis Post-Streptococcal Evaluation & Treatment Conference, Washington, DC.

2019. “Th17 cells drive neuropathology in a model of autoimmune encephalitis.” Columbia Center for Translational Neuroimmunology Retreat, New York, NY.

2017. “New insights in a live-infection mouse model of autoimmune encephalitis/PANDAS. International OCD Foundation Research Day, San Francisco, CA.

2016. “Blood-brain barrier dysfunction and changes in neuronal activity in a mouse model of Sydenham’s Chorea and PANDAS.” International OCD Foundation Research Day, Chicago, IL.

***Poster presentations***

**MP Platt**, CR Wayne, L Cujé, ED Smith, D Agalliu. “Recurrent *Streptococcus pyogenes* infections induce Th17 cell infiltration into the CNS via an olfactory route and promote blood-brain barrier damage and IgG deposition.” IOCDF Research Symposium 2016.

**MP Platt**, T Dileepan, D Knowland, ED Smith, M Hsu, PP Cleary, D Agalliu. “Recurrent *Streptococcus pyogenes* infections induce Th17 cell infiltration into the CNS via an olfactory route and promote blood-brain barrier damage and IgG deposition.” Society for Neuroscience meeting 2014.

GC Johnson, WT Adler, **MP Platt**, KA Wright, GD Rosen, AM Galaburda. “Induced neocortical migration disorder affects cell number in the ventral cochlear nucleus.” Society for Neuroscience 2013.

**MP Platt**, WT Adler, AJ Mehlhorn, GD Rosen, AM Galaburda. “Embryonic knockdown of the candidate dyslexia susceptibility gene KIAA0319-Like results in severe disruptions of neuronal migration.” Society for Neuroscience 2012.

**AWARDS**

2011. Dean’s List, Wesleyan University.

2013. Francisco J. Ayala Fellowship; University of California, Irvine.

**MEMBERSHIPS**

2010-2011 Neuroscience Major’s Committee; Wesleyan University, Middletown, CT

2013-Present Graduate Women in Science, Sigma Chapter; University of California, Irvine.

2014-Present Society for Neuroscience, Student Member.

**COMMITTEES**

2014-2015 INP Executive Committee student representative; University of California, Irvine

2014-2015 Developmental & Cell Biology Social Committee, University of California, Irvine