

Elaine Y. Hsiao

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<https://hsiao.science/>

Education

09/2007 — 12/2012	California Institute of Technology Doctor of Philosophy in Neurobiology	Pasadena, CA
09/2003 — 12/2006	University of California, Los Angeles Bachelor of Science in Microbiology, Immunology and Molecular Genetics	Los Angeles, CA

Appointments

07/2025 — present	Goodman-Luskin Associate Professor in Microbiome Research, UCLA Department of Integrative Biology & Physiology
06/2022 — present	Director, UCLA Goodman-Luskin Microbiome Center
06/2022 — present	Director, UCLA Gnotobiotic Animal Core Facility
09/2017 — present	Joint Appointment, UCLA Department of Microbiology, Immunology & Molecular Genetics
09/2015 — present	Joint Appointment, UCLA Department of Medicine, Digestive Diseases
07/2020 — 07/2025	De Logi Associate Professor in Biological Sciences, UCLA Department of Integrative Biology & Physiology
09/2020 — 11/2024	Vice Chair of Postdoctoral Affairs, UCLA Department of Integrative Biology & Physiology
07/2015 — 06/2020	De Logi Assistant Professor in Biological Sciences, UCLA Department of Integrative Biology & Physiology
08/2015 — 05/2022	Associate Director/Steering Committee Member, UCLA Microbiome Center
07/2015 — 07/2022	Visiting Associate, Caltech Biology & Biological Engineering
09/2014 — 07/2015	Research Assistant Professor, Caltech Biology & Biological Engineering
09/2013 — 09/2014	Senior Research Fellow, Caltech Biology & Biological Engineering
01/2013 — 09/2013	Postdoctoral Scholar, Caltech Mentors: Rustem F. Ismagilov, Chemistry & Chemical Engineering Sarkis K. Mazmanian, Biology & Biological Engineering
09/2007 — 01/2013	Graduate Student, Caltech Mentor: Paul H. Patterson; Biology & Biological Engineering
03/2007 — 09/2007	Associate, Pre-Clinical Formulations, Amgen, Inc.

Academic and Professional Honors

07/2025	UCLA Goodman-Luskin Endowed Chair in Microbiome Research
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11/2024 Clarivate Highly Cited Researchers List (Top 1% Worldwide; 1 of 38 at UCLA)

09/2024 ScholarGPS Highly Ranked Scholar (Top 0.05% Worldwide; #11 in Microbiota, #147 in Biology and Biological Sciences, #550 in Life Sciences)

11/2023 Clarivate Highly Cited Researchers List (Top 1% Worldwide; 1 of 40 at UCLA)

11/2023 Finalist for 2024 HHMI Investigator

04/2023 Finalist for Falling Walls Science Breakthrough of the Year

03/2023 BIOS Top 23 Women Academic Entrepreneurs of 2023

11/2022 Clarivate Highly Cited Researchers List (Top 1% Worldwide; 1 of 39 at UCLA)

06/2022 Blavatnik National Laureate in Life Sciences

04/2022 Innovators in Science Award, New York Academy of Sciences/Takeda Pharmaceuticals

03/2022 Lifetime Member, New York Academy of Sciences

12/2021 W. M. Keck Foundation Junior Faculty Award

03/2021 2021 Sci-Founder Fellow

03/2021 UCLA Chancellor's Post-doctoral Mentoring Award

01/2021 Finalist for NINDS Landis Mentoring Award for Outstanding Mentorship

07/2020 Max Planck Society Sabbatical Award

01/2020 Research Corporation for Science Advancement Scialog Fellow

05/2019 UCLA Life Sciences Excellence Award for Outstanding Research Publication

04/2019 John H. Walsh Young Investigator Research Prize

10/2018 Chan-Zuckerberg Initiative Ben Barres Career Acceleration Award

06/2018 New York Stem Cell Foundation Robertson Neuroscience Investigator

04/2018 UCLA Life Sciences Excellence Award in Educational Innovation

11/2017 Robert J. and Claire Pasarow Foundation Medical Research Award

10/2017 Packard Fellow in Science and Engineering

09/2017 Renew Life Research Excellence Award

07/2017 Klingenstein-Simons Fellow in Neuroscience

04/2017 UCLA Life Sciences Excellence Award for Outstanding Research Publication

01/2017 UCLA Chancellor's Post-doctoral Mentoring Award Nominee

02/2016 Alfred P. Sloan Research Fellow in Neuroscience

11/2015 Kavli Fellow of the National Academy of Sciences

10/2015 UCLA De Logi Chair in Biological Sciences

09/2015 Member, White House Office of Science & Technology Microbiome Forum

08/2015 TEDYouth Speaker

06/2015 National Geographic Emerging Explorer Award

09/2014 Caltech Environmental Microbial Interactions Career Award

08/2014 Forbes' "30 Under 30 in Science & Healthcare"

09/2013 NIH Director's Early Independence Award (DP5)

05/2013 2013 Caltech Everhart Lecturer

01/2013 Global Young Scientist Summit Travel Award, Singapore

03/2012 Keystone Symposium Scholarship
 09/2012 TEDxCaltech Speaker
 09/2012 Gregory O. & Jennifer W. Johnson Caltech Innovation Fellowship
 01/2012 International Society for Developmental Neuroscience Travel Award, India
 09/2011 NIH/NRSA Ruth L. Kirschstein Pre-doctoral Fellowship
 09/2009 Autism Speaks Dennis Weatherstone Pre-doctoral Fellowship

Publications (89) Primary Research Articles (37)

*Hsiao lab members: * undergraduates, # graduate students, ^ postdoctoral fellows, ' staff members*

- 2025 Yu LW[#], Reichmuth L^{*}, Tran A, Liang J, Fu Y^{*}, Phan M[#], Lau K^{*}, Paramo J', Lopez-Romero A', Espinoza A', O'Sullivan T, Donaldson GP, **Hsiao EY** (2025) Gut bacterial induction of peripheral serotonin promotes immunoregulatory dendritic cells and accelerates colonic tumorigenesis. in review.
- 2025 Kazmi SA[#], Chandra F[#], Cheng J, Wasney M, Lum GR[#], Iyer M^{*}, Di Blasi D^{*}, Espinoza A', Paramo J', Lopez-Romero A', Garud N, Yang X, **Hsiao EY** (2025) Select gut microbial metabolites promote tau aggregation and cognitive impairment in a murine tauopathy model. in review.
- 2025 Agirman G[^], Quicho MN[#], Zhang X, Lynch JB[^], Ha SM, Schmidt HM, Connelley K^{*}, Liang A^{*}, Yu KB[#], Özcan E[^], Ahn IS, Qian C[^], Paramo J', Espinoza A', de Aguiar Vallim TQ, Yang X, Church A, **Hsiao EY** (2025) The microbial metabolite imidazole propionate modulates hypothalamic activity and stress-induced behaviors. in revision.
- 2025 Yu KB[#], Son C[#], Chandra A^{*}, Paramo J', Novoselov A^{*}, Özcan E[^], Kazmi SA[#], Lum GR[#], Lopez-Romero A', Lynch JB[^], **Hsiao EY** (2025) Complex carbohydrate utilization by gut bacteria modulates host food consumption. *Nature Communications*, accepted.
 Preprint: biorxiv (2024): doi.org/10.1101/2024.02.13.580152
- 2025 Coley-O'Rourke EJ[#], Lum GR[#], Pronovost GN[#], Yu LW[#], Özcan E[^], Yu KB[#], McDermott J^{*}, Chakhoyan A^{*}, Goldman E^{*}, Vuong HE[^], Paramo J', McCune S, Sejane K, Renwick S, Bode L, Chu A, Calkins KL, **Hsiao EY** (2025) Murine maternal microbiome modifies adverse effects of protein undernutrition on offspring neurobehavior. *Nature Microbiology*, 10:1648-64. PMID: 40514563.
 Preprint: biorxiv (2024): doi.org/10.1101/2024.02.22.581439v1
- 2025 Yu KB^{#,%}, Chandra F^{#,%}, Coley-O'Rourke EJ[#], Paulson ET, Novoselov A^{*}, Zhang D, Finnigan D^{*}, Paramo J', Lopez-Romero A', Dong TS, Schartup AT, **Hsiao EY** (2025) An engineered gut bacterium protects against dietary methylmercury exposure in pregnant mice. *Cell Host and Microbe*, 33:621-31. PMID: 40315838. PMCID: PMC12086009. [%]Authors contributed equally
 Highlighted in [Forbes](#), [Discover Magazine](#), [San Francisco Chronicle](#), [Times of San Diego](#), [West LA Times](#), [NIEHS Paper of the Month](#), [the Scientist](#)
- 2025 Cheng X, Li Z, Zhu J, Wang J, Huang R, Yu LW[#], Lin S, Forman S, Gromilina E, Puri S, Patel P, Bahramian M, Tan J, Hojaiji H, Jelinek D, Voisin L, Yu KB[#], Zhang A, Lei L, Coller HA, **Hsiao EY**, Reyes BL, Matsumoto JH, Lu DC, Liu C, Milla C, Emaminejad S (2025) Tandem metabolic reaction-

based sensors unlock in vivo metabolomics. *Proceedings of the National Academy of Sciences*, 122: e2425526122. PMID: 40014569. PMCID: PMC11892595.

- 2025 Jameson KG[#], Kazmi SA[#], Ohara TE[^], Son C[#], Yu KB[#], Mazdeyasnan D^{*}, Leshan E^{*}, Vuong HE[^], Paramo J', Lopez-Romero A', Yang L, Masmanidis SC, Schweizer FE, **Hsiao EY** (2025) Select microbial metabolites in the small intestinal lumen regulate vagal activity via receptor-mediated signaling. *iScience*, 28: 111699. PMID: 39877906. PMCID: PMC11772968.
Preprint: biorxiv (2023): doi.org/10.1101/2023.12.18.572257
- 2025 Özcan E[^], Yu KB[#], Dinh L^{*}, Lum GR[#], Hsu J^{*}, Lau K^{*}, Arino M^{*}, Paramo J', **Hsiao EY** (2025) Dietary fiber content in clinical ketogenic diets modifies the gut microbiome and seizure resistance in mice. *Nature Communications*, 16:987. PMID: 39856103. PMCID: PMC11759687.
Preprint: biorxiv (2024): doi.org/10.1101/2024.07.31.606041
- 2024 Fang P[^], Yu LW[#], Espey H[#], Agirman A[^], Kazmi SA[#], Li K, Deng Y[^], Lee J^{*}, Hrnčir H, Arnold AP, **Hsiao EY** (2024) Sex-dependent interactions between prodromal intestinal inflammation and LRRK2 G2019S in mice promote symptoms of Parkinson's disease. *Communications Biology*, 7:570. PMID: 38750146. PMCID: PMC11096388.
Preprint: biorxiv (2022): doi.org/10.1101/2022.11.30.518591
- 2023 Lum GR[#], Ha SM, Olson CA[#], Blencowe M, Paramo J', Reyes B, Matsumoto JH, Yang X, **Hsiao EY** (2023) Ketogenic diet therapy for pediatric epilepsy is associated with alterations in the human gut microbiome that confer seizure resistance in mice. *Cell Reports*, 42:113521. PMID: 38070135. PMCID: PMC10769314.
Preprint: biorxiv (2023): doi.org/10.1101/2023.03.17.533243
Highlighted in [Cell Reports](#), [New Scientist](#)
- 2023 Pronovost GN[#], Yu KB[#], Coley-O'Rourke EJL[#], Telang SS^{*}, Chen AS^{*}, Vuong HE[^], Williams DW[#], Gharagoz BE^{*}, Rendon TK', Paramo J', Kim R, **Hsiao EY** (2023) The maternal microbiome promotes placental development in mice. *Science Advances*, 9:eadk1887. PMID: 37801498. PMCID: PMC10558122.
Preprint: biorxiv (2023): doi.org/10.1101/2023.02.15.528712
Highlighted in [Nature Research Highlights](#), [Biomedical Picture of the Day](#)
- 2023 Lynch JB[^], Gonzalez EL^{*}, Choy K^{*}, Faull KF, Seaman LC, Jewell T, Arellano A, Liang J, Yu KB[#], Paramo J', **Hsiao EY** (2023) Gut microbiota *Turicibacter* strains differentially modify bile acids and host lipids. *Nature Communications*, 14:3669. PMID: 37339963. PMCID: PMC10281990.
Preprint: biorxiv (2022): doi.org/10.1101/2022.06.27.497673
- 2022 An U, Shenhav L, Olson CA[#], **Hsiao EY**, Halperin E, Sankararaman S (2022) STENSL: microbial Source Tracking with Environment SeLection. *mSystems*, e0099521. PMID: 36047699. PMCID: PMC9599664.
- 2021 Olson CA[#], Iniguez AJ[#], Yang GE^{*}, Fang P[^], Pronovost GN[#], Jameson KG[#], Rendon TK', Paramo J', Barlow JT, Ismagilov RF, **Hsiao EY** (2021) Alterations in the gut microbiota contribute to cognitive

impairment induced by the ketogenic diet and hypoxia. *Cell Host and Microbe*, 29:1378-92. PMID: 34358434. PMCID: PMC8429275.

- 2021 Coley EJL[#], Mayer EA, Osadchiy V, Chen Z, Zhang Y, **Hsiao EY**, Gao K, Bhatt R, Dong T, Vora P, Naliboff B, Jacobs J, Gupta A (2021) Early life adversity predicts brain-gut alterations associated with increased stress and mood. *Neurobiology of Stress*, 15:100348. PMID: 34113697. PMCID: PMC8170500.
- 2021 Vuong HE[^], Coley EJL[#], Kasantsev M[#], Cooke ME^{*}, Rendon TK['], Paramo J['], **Hsiao EY** (2021) Interactions between maternal fluoxetine treatment, the maternal microbiome and fetal neurodevelopment in mice. *Behavioural Brain Research*, 410:113353. PMID: 33979656.
- 2021 Noble EE, Olson CA[#], Davis E, Tsan L, Chen Y, Schade R, Liu C, Suarez A, Jones RB, de La Serre C, Yang X, **Hsiao EY**^{``}, Kanoski S^{``} (2021) Gut microbial taxa elevated by dietary sugar disrupt memory function. *Translational Psychiatry*, 11:194. PMID: 33790226. PMCID: PMC8012713. ^{``}Co-corresponding authors
Preprint: biorxiv (2021): doi.org/10.1101/2020/06.16.153809
- 2020 Vuong HE[^], Pronovost GN[#], Williams DW[#], Coley EJL[#], Siegler EL^{*}, Qiu A^{*}, Kasantsev M[#], Wilson CJ^{*}, Rendon T['], **Hsiao EY** (2020) The maternal gut microbiota modulates fetal neurodevelopment in mice. *Nature*, 586:281-6. PMID: 32968276. PMCID: PMC7554197.
Highlighted in [Nature News & Views](#), [PennNeuroKnow](#), [The Conversation](#), [ScienceNews](#)
- 2020 Ahn I, Lang J, Olson CA[#], Ying Z, Zhang G, Byun H, Zhao Y, Kurt Z, Lusi AJ, **Hsiao EY**, Gomez-Pinilla F, Yang X (2020) Host genetic background and gut microbiota contribute to differential metabolic responses to high fructose consumption in mice. *Journal of Nutrition*, 150:2716-28. PMID: 32856048. PMCID: PMC7549307.
Preprint: biorxiv (2020): doi.org/10.1101/439786
- 2020 Osadchiy V, Mayer EA, Gao K, Labus JS, Naliboff B, Tillisch K, Chang L, Jacobs JP, **Hsiao EY**, Gupta A (2020) Analysis of brain networks and fecal metabolites reveals brain-gut alterations in premenopausal females with irritable bowel syndrome. *Translational Psychiatry*, 10:367. PMID: 33139708. PMCID: PMC7608552.
- 2020 Williams DW, Vuong HE[^], Kim S, Lenon A, Ho K, **Hsiao EY**, Sung E, Kim R (2020) Indigenous microbiota protects against inflammation-induced osteonecrosis. *Journal of Dental Research*, 99:676-84. PMID: 32109361. PMCID: PMC7243424.
- 2019 Fung TC[^], Vuong HE[^], Luna CDG^{*}, Pronovost GN[#], Aleksandrova AA, Riley NG, Vavilina A[#], McGinn J['], Rendon T['], Forrest LR, **Hsiao EY** (2019) Intestinal serotonin and fluoxetine exposure modulate bacterial colonization in the gut. *Nature Microbiology*, 4:2064-73. PMID: 31477894. PMCID: PMC6879823.
Highlighted in [C&EN Chemistry and Engineering News 97:35](#), [Nature Research Communities](#), [Nature Reviews Gastroenterology & Hepatology](#)

- 2019 Labus JS, Osadchiy V, **Hsiao EY**, Tap J, Derrien M, Gupta A, Tillisch K, Le Nevé B, Grinsvall C, Ljungberg M, Öhman L, Törnblom H, Simren M, Mayer EA (2019) Evidence for an association of gut microbial Clostridia with brain functional connectivity and gastrointestinal sensorimotor function in patients with irritable bowel syndrome, based on tripartite network analysis. *Microbiome*, 7:45. PMID: 30898151. PMCID: PMC6429755.
- 2018 Lee K, Vuong HE[^], Nusbaum DJ['], **Hsiao EY**, Evans CJ, Taylor AMW (2018) The gut microbiota mediates reward and sensory responses associated with regimen-selective morphine dependence. *Neuropsychopharmacology*, 43:2606-14. PMID: 30258112. PMCID: PMC6224506.
Highlighted in [Nature Medicine 24:1630-2](#).
- 2018 Olson CA[#], Vuong HE[^], Yano JM['], Liang QY^{*}, Nusbaum DJ['], **Hsiao EY** (2018) The gut microbiota mediates the anti-seizure effects of the ketogenic diet. *Cell*, 173:1728-41. PMID: 29804833. PMCID: PMC6003870.
Highlighted in [New York Times](#), [Science 6394:1199-200](#), [Science Translational Medicine 446:eaau0471](#), [PNAS Journal Club](#), [Cell Host & Microbe 24:3-5](#).
- 2018 Osadchiy V, Labus JS, Jacobs J, Gupta A, Ashe-MacNalley C, **Hsiao EY**, Mayer EA (2018) Correlation of tryptophan metabolites with connectivity of extended central reward network in healthy subjects. *PLoS One*, 13:e0201772. PMID: 30080865. PMCID: PMC6078307.
- 2017 Labus JS, Hollister EB, Jacobs J, Kirbach K, Oezguen N, Gupta A, Acosta J, Luna R, Aagaard K, Versalovic J, Savidge T, **Hsiao E**, Tillisch K, Mayer EA (2017) Differences in gut microbial composition correlate with regional brain volumes in irritable bowel syndrome. *Microbiome*, 5:49. PMID: 28457228. PMCID: PMC5410709.
- 2016 Wu W, **Hsiao EY**, Yan Z, Mazmanian SK, Patterson PH (2016) Placental interleukin-6 signaling controls fetal brain development and behavior. *Brain Behavior and Immunity*, 62:11-23. PMID: 27838335. PMCID: PMC5373986.
Highlighted in [Brain Behav Immun 62:9-10](#)
- 2015 Yano JM['], Yu K^{*}, Donaldson G, Shastri G^{*}, Ma L, Ann P, Nagler C, Ismagilov RF, Mazmanian SK, **Hsiao EY** (2015) Indigenous bacteria from the gut microbiota regulate host serotonin biosynthesis. *Cell*, 161:264-76. PMID:25860609. PMCID: PMC4393509.
Highlighted in [Cell 161:193-4](#), [Science Signaling 373:ec101](#), [Nature Reviews Gastroenterology & Hepatology 12:311](#), [ACS Chemical Biology 10:1157-1159](#).
- 2013 **Hsiao EY**, McBride SW, Hsien S, Sharon G, Hyde ER, McCue T, Codelli JA, Chow J, Reisman SE, Petrosino JF, Patterson PH[%], Mazmanian SK[%] (2013) The microbiota modulates behavioral and physiological abnormalities associated with neurodevelopmental disorders. *Cell*, 155:1451-1463. PMID: 24315484. PMCID: PMC3897394. [%]Authors contributed equally
Highlighted in [New York Times](#), [Cell 155:1446-8](#), [PNAS 111:2051-3](#), [Nature Reviews Neuroscience 15:65](#), [Nature Reviews Neurology 10:60](#), [Nature Reviews Microbiology 12:76-7](#), [Nature Reviews Drug Discovery 13:104](#), [CNS & Neurological Disorders Drug Targets 13:733-5](#), by [Dr. Tom Insel, NIMH](#), [Top 10 Autism Research Achievement of 2013 by Autism Speaks](#), [National Geographic](#), [Scientific American](#).

- 2012 Garay PA, **Hsiao EY**, Patterson PH, McAllister AK (2012) Maternal immune activation causes age- and region-specific changes in brain cytokines in offspring throughout development. *Brain Behavior and Immunity*, 31:54-68. PMID: 22841693. PMCID: PMC3529133.
- 2012 **Hsiao EY**, McBride SW, Chow J, Mazmanian SK, Patterson PH (2012) Modeling an autism risk factor in mice leads to permanent immune dysregulation. *Proceedings of the National Academy of Sciences*, 109:12776-81. PMID: 22802640. PMCID: PMC3411999.
[Top 10 Autism Research Achievement of 2012 by Autism Speaks](#), [Notable Paper of 2012 by Simons Foundation](#), ["Summer Scientific Breakthrough," Dr. Tom Insel, NIMH](#)
- 2012 Garbett, KA%, **Hsiao EY**%, Kalman S, Patterson PH, Mirnics K (2012) Effects of maternal immune activation on gene expression patterns in the fetal brain. *Translational Psychiatry*, 2:e98. PMID: 22832908. PMCID: PMC3337077. %Authors contributed equally
- 2012 Malkova NV, Yu CZ, **Hsiao EY**, Patterson PH (2012) Maternal immune activation yields offspring displaying the three core symptoms of autism. *Brain Behavior and Immunity*, 26:607-16. PMID: 2210922. PMCID: PMC3322300.
- 2011 **Hsiao EY**, Patterson PH (2011) Activation of the maternal immune system induces endocrine changes in the placenta via IL-6. *Brain Behavior and Immunity*, 25:604-15. PMID: 21195166. PMCID: PMC3081363.
 Highlighted in [Brain Behav Immun 25:602-3](#)
- 2010 Ito HT, Smith SE, **Hsiao E**, Patterson PH (2010) Maternal immune activation alters nonspatial information processing in the hippocampus of the adult offspring. *Brain Behavior and Immunity*, 24:930-41. PMID: 20227486. PMCID: PMC2897971.
- Publications (89) *Invited Commentary and Perspective Articles (7)*
-
- Hsiao lab members: * undergraduates, # graduate students, ^ postdoctoral fellows, ' staff members*
- 2023 Lynch JB^, **Hsiao EY** (2023) Toward understanding links between the microbiome and neurotransmitters. *Annals of the New York Academy of Sciences*, 1524:10-16. PMID: 37017112.
- 2020 Jameson KG#, Olson CA#, Kazmi SA#, **Hsiao EY** (2020). Toward understanding microbiome-neuronal signaling. *Molecular Cell*, 78:577-83. PMID:32275853.
- 2019 **Hsiao EY** (2019) The neuroimmune collective, in "Voices: The next quarter century". *Immunity*, 50:769-777. PMID:30995498.
- 2018 **Hsiao EY** (2018) Decoding states and contexts, in "Setting the stage for the next generation of neuroscience". *Neuron*, 99:11-12. PMID: 30001505.
- 2018 Kentner AC, Bilbo SD, Brown AS, **Hsiao EY**, McAllister AK, Meyer U, Pearce BD, Pletnikov MV, Yolken RH, Bauman MD (2018). Maternal immune activation: Reporting guidelines to improve

the rigor, reproducibility and transparency of the model. *Neuropsychopharmacology*, 44:245-58. PMID: 30188509. PMCID: PMC6300528.

- 2018 Jameson KG[#] and **Hsiao EY** (2018) Linking the gut microbiome to a brain neurotransmitter. *Trends in Neuroscience*, 41:413-4. PMID: 29933773.
- 2016 Olson CA[#], Vuong HE[^], **Hsiao EY** (2016) Microbial modulators of host behavior. In 'The Microbial Olympics 2016. *Nature Microbiology*, 1:16122. PMID: 27573121.
- Publications (89) *Invited Review Articles (22)*
-
- Hsiao lab members: * undergraduates, # graduate students, ^ postdoctoral fellows, ' staff members*
- 2025 Yu LW[#], **Hsiao EY** (2025). Microbial regulation of serotonin and neuroimmune interactions. *Current Opinion in Immunology*, accepted.
- 2025 Orchanian S[^], **Hsiao EY** (2025). The microbiome as a modulator of neurological health across the maternal-offspring interface. *Journal of Clinical Investigation*, 135:e184314. PMID: 39959974. PMCID: PMC11827852.
- 2025 Ohara TE[^], **Hsiao EY** (2025). Microbiota-neuroepithelial signaling across the gut-brain axis. *Nature Reviews Microbiology*, 23:371-84. PMID: 39743581.
- 2022 Özcan E[^], Lum GR[#], **Hsiao EY** (2022). Interactions between the gut microbiome and ketogenic diet in refractory epilepsy. In Sampson T (Eds). *Microbiome in Neurological Disease, International Review in Neurobiology*, 167:217-49. PMID: 36427956.
- 2022 Yu LW[#], Agirman G[^], **Hsiao EY** (2022). The gut microbiome as a regulator of the neuroimmune landscape. *Annual Reviews of Immunology*, 40:143-167. PMID: 34990209.
- 2021 Agirman G[^], Yu KB[#], **Hsiao EY** (2021). Signaling inflammation across the gut-brain axis. *Science*, 374:1087-92. PMID: 34822299.
- 2021 Coley EJL[#] and **Hsiao EY** (2021). Malnutrition and the microbiome as modifiers of early neurodevelopment *Trends in Neuroscience*, 44:753-64. PMID: 34303552.
- 2021 Agirman G[^] and **Hsiao EY** (2021). Snapshot: The Microbiome-Gut-Brain Axis (graphical article). *Cell*, 184:P2524-2524.E1. PMID:33930299.
- 2021 Yu KB[#] and **Hsiao EY** (2021). Roles for the gut microbiota in regulating neuronal feeding circuits. *Journal of Clinical Investigation*, 131:e143772. PMID: 33998595. PMCID: PMC8121503.
- 2020 Fang P[^], Kazmi SA[#], Jameson KG[#], **Hsiao EY** (2020). The microbiome as a modifier of neurodegenerative disease risk. *Cell Host and Microbe*, 28:201-22. PMID: 32791113. PMCID: PMC7430034.

- 2020 Lum GR[#], Olson CA[#], **Hsiao EY** (2020) Emerging roles for the intestinal microbiome in epilepsy. *Neurobiology of Disease*. 135:104576. PMID: 31445165.
- 2019 Lynch JB[^] and **Hsiao EY** (2019) Microbiomes as sources of emergent host phenotypes. *Science*. 365:1405-9. PMID: 31604267.
Highlighted in Faculty 1000 (Life & Environmental Sciences)
- 2019 Pronovost GN[#] and **Hsiao EY** (2019) Perinatal interactions between the microbiome, immunity and neurodevelopment. *Immunity*, 50:18-36. PMID:30650376. PMCID: PMC6447295.
- 2018 Fields CT, Sampson TR, Bruce-Keller AJ, Kiraly DD, **Hsiao EY**, De Vries G (2018). Defining dysbiosis in disorders of movement and motivation. *Journal of Neuroscience*, 38:9414-22. PMID: 30381433. PMCID: PMC6209841.
- 2017 Mayer EA and **Hsiao EY** (2017) The gut and its microbiome as related to central nervous system function and psychological well-being. *Psychosomatic Medicine*. 79: 844-6. PMID: 28976454. PMCID: PMC5924442.
- 2017 Vuong HE[^], Yano JM['], Fung TC[^], **Hsiao EY** (2017) The microbiome and host behavior. *Annual Reviews of Neuroscience*. 40: 21-49. PMID: 28301775. PMCID: PMC6661159.
Highlighted in Faculty 1000 (Microbiology/Microbial Evolution & Genomics)
- 2017 Fung TC[^], Olson CA[#], **Hsiao EY** (2017) Interactions between the microbiota, immune and nervous systems in health and disease. *Nature Neuroscience*. 20:145-55. PMID: 28092661.
- 2016 Vuong HE[^], **Hsiao EY** (2016) Emerging roles for the gut microbiome in autism spectrum disorder. *Biological Psychiatry*. 81: 411-23. PMID: 27773355. PMCID: PMC5285286.
- 2014 **Hsiao EY** (2014) Gastrointestinal issues in autism spectrum disorder. *Harvard Review of Psychiatry* 22:104-111. PMID: 24614765.
- 2013 **Hsiao EY** (2013) Immune dysregulation in autism spectrum disorder. In Konopka G, Harris A, Jenner P (Eds). *Neurobiology of Autism, International Review in Neurobiology* 113:269-302. PMID: 24290389.
- 2012 **Hsiao EY**, Patterson PH (2012) Placental regulation of maternal-fetal interactions and brain development. *Developmental Neurobiology* 72:1317-26. PMID: 22753006.
- 2012 **Hsiao EY**, Patterson PH (2012) Immune involvement in autism. *Autism*, S1.
- Publications (89) *Invited Preview Articles* (15)
-
- Hsiao lab members: * undergraduates, # graduate students, ^ postdoctoral fellows, ' staff members*
- 2025 Lesmana I[#], Qian C[^], **Hsiao EY** (2025). Fibromyalgia pain may have a gut solution. *Neuron*, 113:2029-31. PMID: 40639338.

- 2024 Chandra F[#] and Hsiao EY (2024). FAAHcilitating recovery in malnourished kids. *Cell Chemical Biology*, 31:2018-20. PMID: 39706166.
- 2024 Gur T and Hsiao EY (2024). The microbiome at the interface of the exposome and risk for psychiatric disorders. *Biological Psychiatry*, 9:298-299. PMID: 38220434.
- 2023 Coley-O'Rourke EJL[#] and Hsiao EY (2023). Microbiome alterations in autism spectrum disorder. *Nature Microbiology*, 8:1615-6. PMID: 37591997.
- 2023 Kazmi SA[#] and Hsiao EY (2023). Extending genetic risk for Alzheimer's disease from host to holobiont. *Cell*, 186:690-2. PMID: 36750093.
- 2022 Yu KB[#] and Hsiao EY (2022). Gut microbiota: a sweet tale of mice and microbes. *Current Biology*, 33:R18-20. PMID: 36626856.
- 2022 Agirman G[^] and Hsiao EY (2022). Gut microbes shape athletic motivation. *Nature*, 612:633-4. PMID: 36517676.
- 2022 Özcan E[^] and Hsiao EY (2022). "Are changes in the gut microbiome a contributor or consequence of autism"—why not both? *Cell Reports Medicine*, 3:100505. PMID: 35106514. PMCID: PMC8784764.
- 2021 Yu LW[#] and Hsiao EY (2021). IL-33 changes our "gut feelings" about serotonin. *Immunity*, 54:9-11. PMID: 33440138.
- 2020 Olson CA[#], Lum GR[#], Hsiao EY (2020). Ketone bodies exert ester-ordinary suppression of Bifidobacteria and Th17 Cells. *Cell Metabolism*, 31:1049-51. PMID: 32492391.
- 2020 Fang P[^] and Hsiao EY (2020). Gut microbes tune inflammation and lifespan in a mouse model of amyotrophic lateral sclerosis. *Nature*, 582:34-35. PMID: 32405038.
- 2020 Fang P[^] and Hsiao EY (2020). Mitochondrial and purinergic dysregulation promote abnormal behavior in mice. *Trends in Immunology*, 41:97-9. PMID: 31948872.
- 2019 Jameson KG[#] and Hsiao EY (2019). A novel pathway for microbial metabolism of levodopa. *Nature Medicine*, 25:1195-7. PMID: 31388180. PMCID: PMC7004239.
- 2019 Vuong HE[^] and Hsiao EY (2019) Gut microbes join the social network. *Neuron*, 101:196-8. PMID:30653931. PMCID: PMC6661156.
- 2017 Pronovost GN[#] and Hsiao EY (2017) Microbes REV up host metabolism around the clock. *Immunity*, 47:618-20. PMID: 29045896.

Publications (89)

Invited Book Chapters (8)

*Hsiao lab members: * undergraduates, # graduate students, ^ postdoctoral fellows, ' staff members*

- 2024 Agirman G[^], **Hsiao EY** (2024) Microbiota-gut-brain axis in neurodevelopmental disorders. In Hyland N, Stanton C (Eds.). *The Gut-Brain Axis: Dietary, Prebiotic and Probiotic Interventions on the Microbiota*, 2nd Edition. Academic Press. Chapter 8.
- 2020 **Hsiao EY**, Braun J, Powell N (2020) The commensal microbiota and its relationship to homeostasis and disease. In Smith PD, MacDonald T, Blumberg R (Eds.). *Principles of Mucosal Immunology*, 2nd Edition. Garland Science, Chapter 19.
- 2018 **Hsiao EY**, as a member of: National Academies of Sciences, Engineering and Medicine; Committee on Advancing Understanding of the Implications of Environmental-Chemical Interactions with the Human Microbiome (2018) Environmental Chemicals, the Human Microbiome and Health Risk: A Research Strategy. *The National Academies Collection: Reports funded by the National Institutes of Health*. National Academies Press. Washington DC. PMID: 29431953.
- 2016 Yano J', **Hsiao EY** (2016) A role for the microbiota in neurodevelopmental disorders. In Hyland N, Stanton C (Eds.). *The Gut-Brain Axis: Dietary, Prebiotic and Probiotic Interventions on the Microbiota*. Academic Press. pp. 305-18.
- 2016 Malkova N, **Hsiao EY** (2016) Non-genetic causes of autism spectrum disorders: the role of the immune system. In Sala C, Verpelli C (Eds). *Neuronal and Synaptic Dysfunction in Autism Spectrum Disorder and Intellectual Disability*. Academic Press, pp. 65-76.
- 2015 Malkova N, Wu W, **Hsiao EY** (2015) Modeling the maternal immune activation risk factor for schizophrenia. In Pletnikov M, Waddington J (Eds). *Modeling the Psychopathological Dimensions of Schizophrenia and Related Psychoses*. Academic Press, pp. 175-193.
- 2011 **Hsiao EY**, Bregere C, Malkova N, Patterson PH (2011) Modeling features of autism in rodents. In Amaral DG, Dawson G, Geschwind DH (Eds.), *Autism Spectrum Disorders*. New York: Oxford University Press, pp. 935-62.
- 2010 Smith SE, **Hsiao E**, Patterson PH (2010) Activation of the maternal immune system as a risk factor for neuropsychiatric disorders. In Zimmerman, AW; Connors, SL (Eds.), *Maternal Influences on Fetal Neurodevelopment*. New York: Humana Press, pp. 289-307.

Research Patents and Patent Applications (20 total, 10 licensed)

*Hsiao lab members: * undergraduates, # graduate students, ^ postdoctoral fellows, ' staff members*

- 2025 Agirman G[^], **Hsiao EY** (2025) Compositions and Methods for Reducing Stress, Anxiety and Related Disorders. UCLA. Provisional Application Number: 63/843,718.
- 2025 Yu KB[#], **Hsiao EY** (2025) Compositions and Methods for Treating Metabolic Disorders. UCLA. Provisional Application Number: 63/757,404.
- 2024 Yu KB[#], **Hsiao EY** (2024) Gut Bacterial Detoxification of Methylmercury. UCLA. Provisional

Application Number: 63/739,748.

- 2024 Coley-O'Rourke E[#], **Hsiao EY** (2024) Microbial Metabolites for Promoting Brain Health. UCLA. Provisional Application Number: 63/695,494.
- 2024 Özcan E[^], **Hsiao EY** (2024) Compositions and Methods for the Treatment of Seizures and Related Disorders. UCLA. Provisional Application Number: 63/677,089.
- 2023 Jameson KGJ[#], **Hsiao EY** (2023) Compositions and Methods for Improved Physical and Psychological Health. UCLA. Provisional Application Number: 63/533,797.
- 2023 Lum GR[#], **Hsiao EY** (2023) Molecular Targets for Antiseizure Effects. UCLA. Provisional Application Number: 63/465,088, 63/543,759.
- 2021 Lum GR[#], **Hsiao EY** (2021) Compositions and Methods for Inhibiting Seizures. UCLA. Provisional Application Number: 17/486,299. [licensed]
- 2021 Lynch JB[^], Gonzalez EL^{*}, Choi K^{*}, **Hsiao EY** (2021) Compositions and Methods for Modifying Bile Acids to Regulate Lipid and Steroid Metabolism. UCLA. Provisional Application Number: 63/288,980, 63/355,381. [licensed]
- 2020 **Hsiao EY**, McBride S, Chow J, Patterson PH, Mazmanian SK (2020) Probiotic Therapies for Rett Syndrome. Caltech. Patent Number: 11,896,629. [licensed]
- 2019 Olson CA[#], Iniguez A[#], **Hsiao EY** (2019) Compositions and Methods for Modulating Cognitive Behavior. UCLA. Provisional Application Number: 62/855,290.
- 2019 Vuong HE[^], **Hsiao EY** (2019) Compositions and Methods for Modulating Maternal Microbiomes. UCLA. Provisional Application Number: 62/844,503.
- 2019 Pronovost GN[#], **Hsiao EY** (2019) Compositions and Methods for Regulating Uterine and Placental Growth. UCLA. Provisional Application Number: 62/817,629.
- 2019 Fung TC[^], **Hsiao EY** (2019) Compositions and Methods for Modulating Lipid and Steroid Metabolism. UCLA. Provisional Application Number: 17/168,944. [licensed]
- 2017 Needham B, **Hsiao EY**, Fischbach M, Patterson PH, Mazmanian SK. (2017) Modulation of Microbial Synthesis of 4-Ethylphenol and 4-Ethylphenyl Sulfate in Behavior and Disease. Caltech. Patent Number: 11,224,624; 11,744,867. [licensed]
- 2016 Olson CA[#], Vuong HE[^], Yano JM['], **Hsiao EY** (2016) Compositions and Methods for Inhibiting Seizures. UCLA. Patent Number: 11,129,858. [licensed]
- 2015 **Hsiao EY**, Yano JM['] (2015) Microbe-based Regulation of Serotonin Biosynthesis. Caltech/UCLA. Provisional Application Number: 18/416,203. [licensed]

- 2015 **Hsiao EY, McBride S, Mazmanian SK, Patterson PH (2015) Compositions and Methods Comprising Bacteria for Improving Behavior in Neurodevelopmental Disorders. Caltech. Patent Number: 10,124,025. [licensed]**
- 2013 **Hsiao EY, McBride S, Patterson PH, Mazmanian SK (2013) Diagnosis and Treatment of Autism Spectrum Disorder. Caltech. Patent Number: 10,220,089 and 12,128,075. [licensed]**
- 2011 **Hsiao EY, McBride S, Chow J, Patterson PH, Mazmanian SK (2011) Probiotic Therapies for Autism. Caltech. Patent Number: 9,452,189. [licensed]**

Extramural Academic Service

- 07/2025 — present **Member, Azrieli Accelerator Review Panel**
- 07/2025 — present **Member, Takeda Innovators Award Judging Panel**
- 03/2025 **Scientific Advisor, Department of Defense Army Research Office Biological and Biotechnological Sciences Strategy Meeting**
- 09/2024 — 10/2024 **Scientific Advisor, Federal Trade Commission Bureau of Consumer Protection**
- 08/2024 — present **Member, *Science Immunology* (AAAS) Advisory Board**
- 05/2024 — present **Guest Editor, Special Issue of *Annals of the New York Academy of Sciences* on Functional Metabolites of the Microbiome**
- 03/2024 — present **Scientific Advisor, NIH CoBRE Oklahoma Center for Microbiome Research**
- 12/2023 — 03/2024 ***Ad hoc* Member, NIH Neuroscience of Interoception and Chemosensation Study Section**
- 05/2023 — present **Faculty Advisor, CZI/HBCU Neurodegeneration Computational Fellows Program**
- 03/2023 **Judge, NOSTER/*Science* Magazine Microbiome Prize**
- 02/2023 ***Ad hoc* Member, NIH Molecular and Cellular Neuropharmacology Study Section**
- 08/2022 — 02/2024 **Guest Editor, Special Issue of *Biological Psychiatry* on Microbiome & Exosome**
- 07/2022 **Scientific Advisor, Canadian Microbiome in Parkinson's Disease Initiative**
- 05/2022 ***Ad hoc* Member, NIH Developmental Brain Disorders (DBD) Study Section**
- 01/2022 **Member, Scientific Advisory Committee, NIH/UCSD Nutrition Precision Health Consortium Microbiome and Metagenomics Center**
- 09/2021 **Panelist, NIH Methodological Approaches for Whole Person Research Workshop**
- 09/2020 — 03/2023 **Member, Simons Foundation SFARI ASD-Microbiome Steering Committee**
- 06/2020 **Reviewer, Helmholtz Association Young Investigator Groups Program**
- 03/2020 — present **Scientific Advisor, W. Garfield Weston Foundation**
- 10/2019 ***Ad hoc* Member, NIH Study Section, Biobehavioral Mechanisms of Emotion, Stress & Health (MESH)**
- 09/2019 ***Ad hoc* Reviewer, Graduate Women in Science (GWIS) National Fellowship Program**
- 03/2019 **Scientific Advisor, International GEMMA Consortium- Genome, Environment, Microbiome and Metabolome in Autism**
- 02/2019 **Member, Department of Defense Vannevar Bush Faculty Fellowship Review Group**

04/2018 — 05/2018 Group Lead and Member, Milken Institute Aligning Science Across Parkinson's (ASAP) Scientific Workshop

04/2018 Member, Paul G. Allen Frontiers Group Neuroimmunology Workshop

04/2018 *Ad hoc* Member, NIH Special Emphasis Panel ZRG1 BDCN-G (03) S

03/2018 *Ad hoc* Member, NIH Special Emphasis Panel ZDA1 GMX-A (01) S; NIDA Research Center of Excellence Grant Program

03/2018 *Ad hoc* Member, NIH Special Emphasis Panel ZDA1 GMX-A (02) S; NIDA Core Center of Excellence Grant Program

11/2017 — 05/2018 Guest Editor, Special Issue of *eLife* on the Microbiome

10/2017 *Ad hoc* Member, NIH Developmental Brain Disorders (DBD) Study Section

03/2017 Member, NIH Special Emphasis Panel ZRG1 BBBP-L (40) P; Autism Centers of Excellence (ACE) Programs (P50) Review Group

02/2017 *Ad hoc* Member, NIH CNN- Clinical Neuroscience and Neurodegeneration Study Section

01/2017 Member, Microbiome Gut and Brain-Neurovascular Unit Review Panel; Department of Defense Parkinson's Research Program

12/2016 Member, NIH Special Emphasis Panel ZDA1 GMX-A (15) R; SBIR Laboratory and Diagnostic Tools to Advance Microbiome-Brain Research Review Group

10/2016 *Ad hoc* Member, NIH CNNT- Clinical Neuroplasticity and Neurotransmitters Study Section

07/2016 — 02/2018 Member, National Academy of Sciences Committee on Advancing Understanding of the Implications of Environmental-Chemical Interactions with the Human Microbiome

07/2016 — 12/2016 Member, NIMH Interagency Autism Coordinating Committee (IACC): Strategic Plan Update for ASD Research

06/2016 *Ad hoc* Member, NIH Study Section, Biobehavioral Mechanisms of Emotion, Stress & Health (MESH)

12/2016, 06/2016 Member, NIMH Special Emphasis Panel ZMH1 ERB-B (07) S; Fellowship and Dissertation Grants Review

06/2016 Session Chair, American Society for Microbiology Microbe 2016

05/2016 External Reviewer, National Health and Medical Research Council of Australia

04/2016 — present Organizing Committee Member, International Mind, Mood & Microbes Symposium

01/2016 Reviewer, US-Israel Binational Science Foundation

11/2015 Session Chair, National Academy/ Kavli Foundation Frontiers in Science Meeting

10/2015 — 2/2017 Co-editor, Special Issue of Psychosomatic Medicine (Journal of Biobehavioral Medicine) on the Microbiome

01/2015 — present *Ad hoc* reviewer
 Nature; Science; Cell; Nature Immunology; Nature Medicine; Nature Neuroscience; Cell Host & Microbe; Nature Microbiology; Cell Metabolism; Nature Communications; Neuron; eLife; Journal of Neuroscience; Cell Reports; ACS Chemical Neuroscience; Scientific Reports; EBioMedicine; Brain, Behavior, & Immunity; Molecular Psychiatry; Biological Psychiatry; Neuropharmacology;

Psychoneuroendocrinology; Molecular Autism; Journal of Autism & Developmental Disorders; Behavioural Brain Research; Neuroscience Letters; Brain Research; Neuroscience; Biology of Sex Differences; Journal of Experimental Medicine, Journal of Clinical Investigation.

- 03/2015 — 12/2015 **Member, American Society for Microbiology Microbiome Outreach Taskforce**
- 10/2014 **Section Chair, Forbes' Under 30 Summit- Science & Healthcare**
- 05/2014 **Member, NIMH Pushing Translational Boundaries: Neuroimmunology & Mental Health Workshop**
- 04/2014 **Session Chair, Keystone Symposium: Understanding Biochemical Transformations in the Human Microbiome**
- 03/2014 **Member, NIMH R21/R33 Special Emphasis Panel, ZMH1 ERB-M (04)**

Extramural Commercial Service and Entrepreneurship

- 04/2022 — present **Scientific Consultant, Hypothesis Fund; CEO: David Sanford**
- 06/2020 — present **Co-founder, Kanobo; Co-founder: Leon Hong**
- 04/2020 — present **Co-founder, Scientific Advisor, Purpose Bio; CEO: Lital Gilad**
- 03/2018 — present **Co-founder, Scientific Advisor, Bloom Science; CEO: Christopher Reyes, Ph.D.**
- 01/2018 — present **Scientific Advisor, Holobiome**
- 12/2017 **Member, Medical Advisory Panel, Renew Life**
- 03/2016 — 09/2016 **Scientific Consultant, Kaleido Biosciences**
- 12/2013 — 12/2016 **Co-founder, Axial Therapeutics (formerly Neurobiotix Health); CEO: Michael Glemmbourt (2013-2016), David Donabedian (2016-2021), A. Stewart Campbell (2021-present)**