LEASON ELLIS INTELLECTUAL PROPERTY ATTORNEYS

Maha M. Saber, Ph.D.

PATENT AGENT

Dr. Maha Saber is a Patent Agent at Leason Ellis in the firm's Patent Practice Group. She holds experience prosecuting patents across a broad spectrum of life sciences technologies, including small molecule pharmaceuticals, pharmaceutical formulations, antibodies, protein therapeutics, CRISPR technologies, and diagnostic and therapeutic methods in molecular and cellular biology, immunology, microbiology, plant-based therapeutics, and neuroscience.

Prior to joining the legal field, Maha completed an Evelyn F. McKnight post-doctoral research fellowship in Neurobiology of Aging and Alzheimer's Disease in the Translational Neurotrauma Research Program at the University of Arizona and post-doctoral research assistant position at the Phoenix Children's Hospital. Her post-doctoral research examined brain injury–induced peripheral inflammation and its role in neurodegeneration and detrimental effects of brain injury on peripheral organs. Her Ph.D. research focused on neuroinflammation in brain injury and Alzheimer's disease, and her undergraduate work studied the role of oxytocin in stress and social behavior.

Maha has received numerous distinctions during her academic career, including research fellowships, travel awards, and grant funding from organizations such as the Neurotrauma Society, the Arizona Alzheimer's Consortium, and the Burroughs Welcome Fund.

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Education

- Case Western Reserve University School of Medicine, Ph.D., Molecular Medicine (Neuroimmunology), 2016
- University of Illinois at Chicago, B.S., Neuroscience, 2012

Bar Admissions

- Registered Patent Agent: U.S. Patent and Trademark Office

Experience

- Haley Guiliano LLP, Patent Agent, 2020- 2025
- University of Arizona, Postdoctoral Researcher, 2018- 2020
- Phoenix Children's Hospital, Postdoctoral Fellow, 2016-2018

Selected Articles

Peer-Reviewed Publications

- Kokiko-Cochran O., Ransohoff L., Veenstra M., Lee S., Saber M., Sikora M., Teknipp R., Xu G., Bemiller S., Wilson G., Crish S., Bhaskar K., Lee Y.S., Ransohoff R.M., Lamb B.T.
  Altered Neuroinflammation and Behavior after Traumatic Brain Injury in a Mouse Model of Alzheimer's Disease.
  Journal of Neurotrauma, April 2016. PMID: 26414955
- Yee J.R., Kenkel W.M., Frijling J.L., Dodhia S., Onishi K.G., Tovar S., Saber M., Lewis G.F., Liu W., Porges S.W., Carter C.S.
  Oxytocin promotes functional coupling between paraventricular nucleus and both sympathetic and parasympathetic cardioregulatory nuclei.
  Hormones and Behavior, April 2016. PMID: 26836672
- Saber M., Kokiko-Cochran O.N., Puntambekar S., Lathia J., Lamb B.
  TREM2 deficiency alters acute macrophage distribution and improves recovery after TBI.
  Journal of Neurotrauma, January 2017. PMID: 26976047
- Kokiko-Cochran O., Saber M., Bemiller S., Katsumoto A., Puntambekar S., Bhaskar K., Ransohoff R., Lamb B.
  Traumatic Brain Injury in hTau Model Mice: Enhanced Acute Macrophage Response and Altered Long-Term Recovery.
  Journal of Neurotrauma, January 2018. PMID: 28859549
- Puntambekar S.*, Saber M.*, Lamb B., Kokiko-Cochran O.N.
  Cellular Players that Shape Evolving Pathology and Neurodegeneration Following Traumatic Brain Injury.
  Brain, Behavior, and Immunity, 2018. PMID: 29601944
  (* *indicates co-authorship*)
- Saber M., Giordano K.R., Hur Y., Ortiz J.B., Morrison H., Lifshitz J., Rowe R.K.
  Acute peripheral inflammation and post-traumatic sleep differ between sexes after experimental diffuse brain injury.
  European Journal of Neuroscience, 2019. PMID: 31677290
- Saber M., Pathak K., McGilvery M., Garcia-Mansfield K., Harrison J., Rowe R.K., Lifshitz J., Pirrotte P.
  Proteomic analysis identifies plasma correlates of remote ischemic conditioning in the context of experimental traumatic brain injury.
  Scientific Reports, July 2020. PMID: 25593060

Memberships

- National Neurotrauma Society, Member
- TEAM National Neurotrauma Society, Social Media Committee Chair, 2018- 2019

Honors

- T32 Fellowship, 2018- 2020
- International Neurotrauma Society Travel Award, 2019
- Sursum Fellowship, University of Arizona, 2019
- Burroughs Wellcome Collaborative Fund Award, 2019
- Broadening Horizons Travel Award, Arizona Alzheimer's Consortium, 2017
- Neurotrauma Travel Grant, 2015
- Graduate Service Award, 2016
- International Neurotrauma Society Travel Award, 2018
- Howard Hughes Research Fellow, 2012- 2013
- Nancy Hirshberg Memorial Grant, 2011

Community Service

- Lungevity Fundraiser Organizer, 2013- 2016
- American Heart Assocation, Team Leader, 2013- 2016

Selected Articles (continued)

- Saber M., Rice A.D., Christie I., Roberts R.G., Knox K.S., Nakaji P., Rowe R.K., Wang T., Lifshitz J.
  Remote ischemic conditioning reduces traumatic brain injury-induced acute lung injury in the mouse.
  SHOCK, August 2020. PMID: 32769821
- Saber M., Murphy S.M., Cho Y., Lifshitz J., Rowe R.K.
  Experimental diffuse brain injury and a model of Alzheimer's disease exhibit disease-specific changes in sleep and incongruous peripheral inflammation.
  Journal of Neuroscience Research, December 2020. PMID: 33319441
- Saber M., Ortiz J.B., Rojas L.M., Ma X., Tallent B.R., Adelson P.D., Rowe R.K., Qiu S., Lifshitz J.
  Mice born to mothers with gravida traumatic brain injury have distorted brain circuitry and altered immune responses.
  Journal of Neurotrauma, 38(20), 2862–2880 (2021)
- Apostol C.R., Bernard K., Tanguturi P., Molnar G., Bartlett M.J., Szabò L., Liu C., Ortiz J.B., Saber M., Giordano K.R., Green T.R.F., Melvin J., Morrison H.W., Madhavan L., Rowe R.K., Streicher J.M., Heien M.L., Falk T., Polt R.
  Design and Synthesis of Brain Penetrant Glycopeptide Analogues of PACAP With Neuroprotective Potential for Traumatic Brain Injury and Parkinsonism.
  Frontiers in Drug Discovery, 6 (2022)
- Giordano K.R., Saber M., Green T.R.F., Rojas-Valencia L.M., Ortiz J.B., Murphy S.M., Lifshitz J., Rowe R.K. *Colony-Stimulating Factor-1 Receptor Inhibition Transiently Attenuated the Peripheral Immune Response to Experimental Traumatic Brain Injury.* Neurotrauma Reports, 4(1) 284-296 (2023)

Published Abstracts

- Kokiko-Cochran O., Ransohoff L., Veenstra M., Lee S., Saber M., Sikora M., Teknipp R., Xu G., Bemiller S., Wilson G., Crish S., Bhaskar K., Lee Y.S., Ransohoff R.M., Lamb B.T.
  Altered Neuroinflammation and Behavior after Traumatic Brain Injury in a Mouse Model of Alzheimer's Disease.
  Society for Neuroscience, 2014
- Saber M., Kokiko-Cochran O.N., Teknipp R., Miller C., Lamb B.T.
  The Role of TREM2 in Traumatic Brain Injury-Induced Neuroinflammation and Neurodegeneration.
  CCLCM Neurological Institute Research Day, 06/2014
- Saber M., Kokiko-Cochran O.N., Teknipp R., Miller C., Lamb B.T.
  The Role of TREM2 in Traumatic Brain Injury-Induced Neuroinflammation and Neurodegeneration.
  CCLCM, Society for Neuroscience, 11/2014
- Saber M., Kokiko-Cochran O.N., Teknipp R., Hales J., Lamb B.T.
  The Role of TREM2 in Traumatic Brain Injury-Induced Neuroinflammation and Neurodegeneration.
  CCLCM, LRI Retreat, 05/2014
- Kokiko-Cochran O., Saber M., Bemiller S., Katsumoto A., Puntambekar S., Bhaskar K., Ransohoff R., Lamb B.
  Presence of wild-type human tau enhances acute macrophage response to TBI and alters long-term recovery in mice.
  National Neurotrauma Society, 2016
- Saber M., Kokiko-Cochran O., Lathia J., Lamb B.T.
  The Role of TREM2 in Traumatic Brain Injury-Induced Neuroinflammation and Neurodegeneration.

Selected Articles (continued)

- Hur Y., Saber M., Lifshitz J., Sierks M., Rowe R.K.
  Diffuse brain injury–induced biomarkers associated with toxic protein variants found in Alzheimer's disease and related dementias.
  National Neurotrauma Society, Pittsburgh (2019)
- Ortiz J.B., Hur, Y., Saber, M., Melvin J.C., Szabo L., Polt R., Lifshitz J., Rowe R.K.
  A novel glycosylated PACAP analogue attenuated functional deficits following experimental TBI.
  National Neurotrauma Society, Pittsburgh (2019)
- Giordano K.R., Green T.R.F., Ortiz J.B., Saber M., Hur Y., Morrison H.W., Lifshitz J., Rowe R.K.
  Microglia elimination recovers peripheral inflammation-induced sleep but prolongs TBI-induced sleep in mice.
  Society for Neuroscience, Chicago (2019)
- Saber M., Hur Y., Kokiko-Cochran O.N., Rowe R.K., Lifshitz J.
  Traumatic brain injury and Alzheimer's disease in aged mice leads to similar increases in sleep and peripheral Cd115 expression.
  Society for Neuroscience, Chicago (2019)
- Saber M., Hur Y., Giordano K.R., Young C., Murphy S.M., Rowe R.K., Lifshitz J.
  Remote ischemic conditioning acutely attenuates peripheral inflammation and microglial activation after diffuse brain injury…
  International Neurotrauma Society, Melbourne, Australia (2020)
- Giordano K.R., Murphy S.M., Saber M., Green T.R.F., Rojas-Valencia L.M., Ortiz J.B., Lifshitz J., Rowe R.K.
  Colony stimulating factor 1 receptor inhibition as a pharmacodynamic mechanism to track peripheral inflammation after TBI.
  Journal of Neurotrauma, 38(14), A12–A12 (2021)
- Rojas L., Giordano K.R., Dudic A., Tallent B.R., Saber M., Lifshitz J.
  Supervised and Unsupervised Flow Cytometry Analysis of the Estrous Cycle Interaction with a Peripheral Immune Challenge in Females.
  Journal of Neurotrauma, 38(14), A51–A52 (2021)
- Curry T., Bromberg C.E., Saber M., Rowe R.K., Gonzales R., Esfandiarei M., Thomas T.C.
  Increased TGF-β/MMP Levels Accelerate Cerebrovascular Aging, Leaving the Brain More Vulnerable to TBI.
  Journal of Neurotrauma, 38(14), A68–A69 (2021)
- Curry T., Barrameda M.E., Bromberg C., Saber M., Rowe R., Gonzales R., Esfandiarei M., Thomas T.C.
  Fibrillin-1 Mutation Accelerates Cerebrovascular Aging and Increases Neurovascular Vulnerability to Mild Traumatic Brain Injury.
  Journal of Neurotrauma, 39(11–12), A5–A6 (2022)
- Curry T., Barrameda M.E., Bromberg C., Saber M., Rowe R., Gonzales R., Esfandiarei M., Thomas T.C.
  Increased Neurovascular Vulnerability to Mild Traumatic Brain Injury in a Mouse Model of Marfan Syndrome.
  FASEB Journal, 36 (2022)