

LIANG HAN
ASSISTANT PROFESSOR
SCHOOL OF BIOLOGICAL SCIENCES

EDUCATION

- **09/2004-08/2009** **Ph.D. in Joint Neuroscience Program**, Univ. of Medicine and Dentistry of New Jersey/Rutgers Univ., USA
- **09/2001-07/2004** **M.S. in Developmental Biology**, Tsinghua Univ., China
- **09/1997-07/2001** **B.S. in Biological Sciences**, Tsinghua Univ., China

POSITIONS AND EMPLOYMENT

- **01/2016-** **Assistant Professor**, School of Biological Sciences, Georgia Institute of Technology
- **09/2014-12/2015** **Research Associate**, Dept. of Neuroscience, Johns Hopkins Univ. School of Medicine
- **09/2009-08/2014** **Postdoctoral Fellow**, Dept. of Neuroscience, Johns Hopkins Univ. School of Medicine

AWARDS AND HONORS

- 2018 Pfizer Aspire Dermatology Award
- 2014 K99/R00 Pathway to Independence Award (NINDS)
- 2014 Albert Lehninger Young Investigator Award (Johns Hopkins Univ. School of Medicine)
- 2010 Best Poster Award (Johns Hopkins Univ. Neuroscience Department Retreat)
- 1997 Scholarship for Excellent Freshman (Tsinghua Univ., China)

PUBLICATIONS AT GEORGIA TECH

- Xing Y, Steele H, Hilley H, Zhu Y, Niehoff T, Lawson K, **Han L** Visualizing the itch-sensing skin arbors. *Journal of Investigative Dermatology* 2021 May;141(5):1308-1316.
- Steele HR, Xing Y, Zhu Y, Hilley HB, Lawson K, Nho Y, Niehoff T, **Han L**. MrgprC11⁺ sensory neurons mediate glabrous skin itch. *Proc Natl Acad Sci U S A*. 2021 Apr 13;118(15):e2022874118.
- Steele HR, **Han L** The signaling pathway and polymorphisms of Mrgprs. *Neuroscience Letters* 2021 Jan 23;744:135562
- Steele, H, Dong, X, & **Han L**, Book Chapter, Itch and Pain: Similarities, Interactions, and Differences Chapter 16: Mrgpr receptors in itch and pain. 2020 *IASP Press*
- Xing Y, Chen J, Hilley H, Steele H, Yang J, **Han L**. Molecular signature of pruriceptive MrgprA3⁺ neurons. *Journal of Investigative Dermatology* 2020 Oct;140(10):2041-2050.
- **Han L***, Limjunyawong N, Ru F, Li Z, Hall OJ, Steele H, Zhu Y, Wilson J, Mitzner W, Kollarik M, Undem BJ, Canning BJ, Dong X* Mrgprs on vagal sensory neurons contribute to bronchoconstriction and airway hyperresponsiveness. *Nature Neuroscience* 2018 Mar;21(3):324-328. ***corresponding authors. (Reported by ScienceDaily, Hopkins Medicine, Sciencenewsline and many other websites)**
- Zhu Y, Hanson CE, Liu Q, **Han L** Mrgprs activation is required for chronic itch conditions in mice. *Itch* 2017 Dec Vol 2;3. (Official journal of the International Forum for the Study of Itch)

- Li Z, Tseng PY, Tiwari V, Xu Q, He SQ, Wang Y, Zheng Q, Han L, Wu Z, Blobaum AL, Cui Y, Tiwari V, Sun S, Cheng Y, Huang-Lionnet J, Geng Y, Xiao B, Peng J, Hopkins C, Raja SN, Guan Y, Dong, X. Targeting human Mas-related G-protein-coupled receptor X1 to inhibit persistent pain. *PNAS* 2017 Mar 7;114(10):E1996-E2005.
- Zacccone EJ, Lieu T, Muroi Y, Potenzi C, Udem BE, Gao P, **Han L**, Canning BJ, Udem BJ. Parainfluenza 3-Induced Cough Hypersensitivity in the Guinea Pig Airways. *PLoS One*. 2016 May 23;11(5)
- Chang, AY, Mann, TS, McFawn, PK, **Han, L**, Dong, X, Henry, PJ Investigating the role of MRGPRC11 and capsaicin-sensitive afferent nerves in the anti-influenza effects exerted by SLIGRL-amide in murine airways. *Respiratory Research*. 2016 May 23;17(1):62.

PUBLICATIONS BEFORE JOINING GEORGIA TECH

- McNeil, B, Pundir, P, Meeker, S, **Han, L**, Udem, BJ, Kulka, M, Dong, X. Identification of a mast cell specific receptor crucial for pseudo-allergic drug reactions. *Nature*. 2015 Mar 12;519(7542):237-41.
- **Han, L***, Dong, X*. Itch mechanisms and circuits. *Annu Rev Biophys*. 2014 43:331-55. *corresponding authors.
- Li Z, He SQ, Xu Q, Yang F, Tiwari V, Liu Q, Tang Z, **Han L**, Chu YX, Wang Y, Hin N, Tsukamoto T, Slusher B, Guan X, Wei F, Raja SN, Dong X, Guan Y. Activation of MrgC receptor inhibits N-type calcium channels in small-diameter primary sensory neurons in mice. *Pain*. 2014 Mar, 155(8):1613-21.
- He S, **Han L**, Li Z, Xu Q, Tiwari V, Yang F, Guan X, Wang Y, Raja SN, Dong X, Guan Y. Temporal changes in MrgC expression after spinal nerve injury, *Neuroscience* 2014 Mar 7;261:43-51.
- Qu L, Fan N, Ma C, Wang T, **Han L**, Fu K, Wang Y, Shimada SG, Dong X, and LaMotte RH. Enhanced excitability of MRGPRA3- and MRGPRD-positive nociceptors in a model of inflammatory itch and pain. *Brain* 2014 Apr 137, 1039-1050.
- He S, Li Z, Chu Y, Han L, Xu Q, Li M, Yang F, Liu Q, Tang Z, Wang Y, Hin N, Tsukaoto T, Slusher B, Tiwari V, Shechter R, Wei F, Raja SN, Dong X, Guan Y. MrgC agonism at central terminals of primary sensory neurons inhibits neuropathic pain. *Pain* 2014 Mar;155(3):534-544.
- Kim, Y, Chu Y, **Han L**, Li M, Li Z, LaVinka PC, Caterina MJ, Ren K, Dubner R, Wei F, Dong X. Central terminal sensitization of TRPV1 by descending 5-HT facilitation is a key determinant of chronic pain, *Neuron* 2014 Feb 19, 81(4):873-87.
- **Han L**, Ma C, Liu Q, Weng HJ, Cui Y, Tang Z, Kim Y, Nie H, Qu L, Patel KN, Li Z, McNeil B, He S, Guan Y, Xiao B, Lamotte RH, Dong X. A subpopulation of nociceptors specifically linked to itch. *Nature Neuroscience* 2013 Feb;16(2):174-82. (Reported by The New York Times, The Baltimore Sun, Huffington Post, Daily Mail and many other media)
- Liu Q, Sikand P, Ma C, Tang Z, **Han L**, Li Z, Sun S, LaMotte RH, and Dong X (2012). Mechanisms of itch evoked by beta-alanine. *J Neurosci* 2012 Oct 17;32(42):14532-7.

RESEARCH SUPPORT

Current:

R01HL141269	Han (PI)	04/01/18-03/31/23	\$250,000/year
<i>Functional analysis of MrgprC11⁺ vagal sensory neurons in the airway</i>			

Pfizer Dermatology Award	Han (PI)	12/01/18-11/30/20	\$57,935/year
<i>Antipruritic mechanisms of PDE4 inhibitor</i>			

Completed:

K99/R00 NS087088	Han (PI)	03/01/14-3/31/19
Molecular and Cellular Mechanisms of Itch Sensation		