Curriculum Vitae
Héctor E. Acarón Ledesma

F.M. Kirby Neurobiology Center
Boston Children's Hospital
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EDUCATION:

Ph. D. The University of Chicago, Biophysical Sciences (2020)
Thesis: Mechanisms underlying motion discrimination in the mammalian retina
Advisors: Dr. Wei Wei and Dr. Bozhi Tian

M. Sc. The University of Chicago, Biophysical Sciences (2016)
Thesis: The role of dendritic integration in the computation of direction selectivity in the mouse retina
Advisors: Dr. Wei Wei and Dr. Bozhi Tian

B. Sc. cum laude with Honors, Cornell University, Biological Engineering (2013)
Thesis: DNA nanotechnology as a tool for the construction of functionalized metamaterials
Advisor: Dr. Dan Luo

RESEARCH & PROFESSIONAL EXPERIENCE

2020 – present	Postdoctoral Fellow, F.M. Kirby Neurobiology Center, Boston Children's Hospital | Harvard Medical School with Dr. Chinfei Chen
2012	Amgen Scholar at Columbia University with Dr. Laura Kaufman
2011	Leadership Alliance Early Identification Program at Weill Cornell Medical College with Dr. Olivier Elemento

FELLOWSHIPS, HONORS & AWARDS

University of Chicago Biological Sciences Division Travel Award	2019
NIH F31 – Ruth L. Kirschstein NRSA Predoctoral Fellowship	2018
University of Chicago Graduate Council Travel Award	2018
National Science Foundation Graduate Research Fellowship	2014
Graduated cum laude with Honors, Cornell University	2013
Biology Research Fellowship, Cornell University	2012-2013
AMGEN Scholars Program	2012
Alpha Epsilon: Biological Engineering Honor Fraternity, President	2011-2013
Leadership Alliance Program	2011
Dean's List, Cornell University	2010-2013
Elizabeth L. Grover '75 Scholarship	2009-2013
Alfred & Evelyn Longhouse Scholarship	2009-2013

PUBLICATIONS

Acaron Ledesma, H.* & Wei, W. (2021). Two distinct populations of orientation sensitive retinal

ganglion cells revealed by calcium imaging guided patch-clamp electrophysiology. (in preparation)

Acaron Ledesma, H.,* Smith, R. G., Ding, J., Huang, X., Chen, Q., Chan, C., Lin, M. Z., Wang, S., Wei, W. (2021). Dendritic mechanisms underlying motion detection in starburst amacrine cells. (in preparation).

Huang, X.*, Kim, A. J., **Acaron Ledesma, H.**, Ding, J., Wei, W. (2021). Divergent sensitization patterns of direction-selective ganglion cells encoding upper and lower visual fields. *Under review*

Ding, J.*, Chen, A., Chung, J., **Acaron Ledesma, H.**, Berson, D., Palmer, S., & Wei, W. (2021). Spatially displaced excitation contributes to the encoding of interrupted motion by the retinal direction-selective circuit. (accepted in *eLife*)

Fang, Y.*, Prominski, A.*, Rotenberg, M.*, Meng, L.*, **Acarón Ledesma, H.***, Lv, Y., Yue, J., Schaumann, E., Jeong, J., Yamamoto, N., Jiang, Y., Elbaz, B., Wei, W., Tian, B. (2020). Micelle-enabled self-assembly of porous and monolithic carbon membranes for bioelectronic interfaces. *Nature Nanotechnology*.

Huang, X.*, **Acaron Ledesma, H.,** & Wei, W. (2020). Synapse formation in the developing vertebrate retina. *In Synapse Development and Maturation* (pp. 213-234). Academic Press.

Acaron Ledesma, H.*, Li, X., Carvalho-de-Souza, J., Wei, W., Bezanilla, F., Tian, B. (2019). An atlas of nano-enabled neural interfaces. *Nature Nanotechnology, 14, 645–657.*

Fang, Y.*, Jiang, Y.*, **Acaron Ledesma, H**.*, Yi, J., Gao, X., Weiss, D. E., Shi, F. & Tian, B. (2018). Texturing silicon nanowires for highly localized optical modulation of cellular dynamics. Nano letters.

Acarón Ledesma, H. A.*, & Tian, B. (2017). Nanoscale silicon for subcellular biointerfaces. *Journal of Materials Chemistry B*.

Shi, X.*, Barchini, J.*, **Acarón Ledesma, H.**, Koren, D., Jin, Y., Liu, X., Wei, W., Cang, J. (2017). Retinal origin of direction selectivity in the superior colliculus. *Nature Neuroscience, 20,* 550-558.

Acarón Ledesma, H.*, Koehler, K., & Tian, B. (2017). Flexible Micro-and Nanoelectronics for Tissue Engineering. *In Smart Materials for Tissue Engineering* (pp. 439-472).

Pei, Z.*, Chen, Q., Koren, D., Giammarinaro, B., **Acarón Ledesma, H.,** & Wei, W. (2015). Conditional Knock-Out of Vesicular GABA Transporter Gene from Starburst Amacrine Cells Reveals the Contributions of Multiple Synaptic Mechanisms Underlying Direction Selectivity in the Retina. *The Journal of Neuroscience*, *35*(38), 13219-13232.

POSTERS & PRESENTATIONS

Acarón Ledesma, H., Chan, C., Wang, S., Lin, M.Z., Wei, W. (2019). Dendritic mechanisms underlying motion detection in starburst amacrine cells. Society for Neuroscience. Chicago,

IL. Poster Presentation.

Acarón Ledesma, H., Chan, C., Wang, S., Lin, M.Z., Wei, W. (2019). Dendritic mechanisms underlying motion detection in starburst amacrine cells. Gordon Research Conference: Dendrites – Molecules, Structure, and Function. Ventura, CA. Poster Presentation.

Acarón Ledesma, H., Geng, Q., Wei, W. (2018). Two distinct types of orientation-sensitive retinal ganglion cells revealed by calcium imaging-guided patch-clamp recording. FASEB: Retina Neurobiology and Visual Processing. Olean, NY. Poster & Oral Presentation.

Acarón Ledesma, H., Wei, W., Tian, B. (2016). Porous silicon nanostructures for wireless neuromodulation. Materials Research Society Fall Meeting. Boston, MA. Poster Presentation.

J. Barcini, **H. Acarón Ledesma**, Y.-P. Chen, D. Koren, J. Cang, W. Wei. Different origins of visual feature selectivity in two major subcortical structures in the mouse. Program No. 529.13. 2016 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2016. Online.

Acarón Ledesma, H., Koren, D., Wei, W. (2016). The role of starburst mediated inhibition in orientation selectivity in the mouse retina. FASEB: Retina Neurobiology and Visual Processing. Dillon, CO. Poster & Oral Presentation.

Salzman G., Parameswaran R., Riback J., **Acarón Ledesma H.E**., Barrett J., Seacrist C., Hammond A. (2014). Optogenetically Induced Habituation of mec-4 neurons in *C. elegans*. 58th Biophysical Society Meeting. San Francisco, CA. Poster Presentation.

Acarón Ledesma H.E., Zhu J., Kaufman L. (2012). Cross-linker mediated structural changes in collagen gels engineered for biomaterial applications. AMGEN Symposium, UCLA. Oral Presentation.

Ruiz R.C., Hartman M.R., **Acarón Ledesma H.E.**, Tran T.N.,Tan S.J., Luo D. (2011). Multiplexed, Enzyme-Free Pathogen Detection Using a DNA Nanobarcode Microfluidic Device. Materials Research Society Fall Meeting. Boston, MA. Oral Presentation.

Acarón Ledesma H.E., Giannopoulou, E., Elemento, O. (2011). Development of Tissue-Specific Gene Regulatory Networks in Human Endothelial Cells. Leadership Alliance National Symposium. Greenwich, CT. Poster Presentation

Acarón Ledesma H.E., Deliz, J.R., García M. (2008). Alcohol Disruption: Associative Learning Paradigm and Decision-Making Test in Drosophila melanogaster. Intel International Science & Engineering Fair. Atlanta, GA. Poster Presentation, Abstract Published & 4th Place Grand Award.

TEACHING EXPERIENCE

Leadership Alliance STEM Instructor – Office of the Provost 2018-2019
The University of Chicago

Cellular Neurobiology – Profs. Ruth Anne Eatock & Aaron Fox 2017

The University of Chicago

Neurobiology of Seeing – Profs. Wei Wei, Murray Sherman, John Maunsell, & Steve Shevell 2016
The University of Chicago

Principles in Biological Engineering – Prof. Antje Baeumner 2011 – 2012
Cornell University

LEADERSHIP/ EXTRACURRICULAR ACTIVITIES

University of Chicago Barry Goldwater Scholarship Nomination Committee	2018
Biophysical Sciences Student Advisory Board	2015 – 2018
Biophysical Sciences Graduate Program Admissions Committee	2015 – 2017
President Alpha Epsilon: Biological Engineering Honor Fraternity	2012 – 2013

Contact References:

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