



## Conditions Treated:

## Research Areas:

- *Critical host-pathogen interactions in the context of NTM lung disease*
- *Environmental, host, and NTM interaction studies in Hawai'i*
- *Using clinical isolates from Hawai'i to understand Mycobacterium avium complex virulence*
- *Investigations of the NTM lung disease triad in the context of cystic fibrosis*

## Programs & Services:

- *Center for Genes, Environment and Health*
- *NTM Center of Excellence*
- *Department of Immunology and Genomic Medicine*

The overarching mission of the Honda Lab is to understand the biology of nontuberculous mycobacterial (NTM) lung disease. NTM lung disease is an emerging public health threat of increasing importance globally. NTM are found in soil and water and not everyone who is exposed develops infection; thus, it is likely a variety of factors drive disease emergence. For unknown reasons, Hawai'i shows the highest numbers of NTM lung disease cases in the United States. Our team is actively studying the 1) environmental- 2) host- 3) microbial factors that contribute to NTM lung disease emergence in Hawai'i and in other Pacific Islands in order to better understand disease emergence in the United States and globally. Additionally, environmental and clinical NTM isolates from Hawai'i are used to explore the intra- and inter- NTM species differences that contribute to pathogenicity and host evasion.

The Honda lab is supported by grants from the American Thoracic Society, National Science Foundation, Shoot for the Cure, Natalie V. Zucker Foundation, Cystic Fibrosis Foundation, NIH NHLBI PRIDE AGOLD Program, University of Colorado, GI and Liver Innate Immune Program (GALIIP), and the Padosi Foundation.

## Education

- 1993 - 1997 Colorado State University, Fort Collins, CO, B.S. Biology and Zoology
- 1999 - 2002 University of Hawai'i, Manoa; Honolulu, HI, M.S. Microbiology
- 2004 - 2010 University of Colorado Anschutz Medical Campus; Aurora, CO, PhD, Microbiology

## Affiliations with the University of Colorado Denver

University of Hawai'i, Department of Tropical Medicine, Medical Microbiology, and Pharmacology

### Professional Memberships

American Thoracic Society, American Society for Microbiology

### Awards & Recognition

2021: ATS Assembly on Pulmonary Infections & Tuberculosis Junior-Level Peer Recognition Award  
2020: European Respiratory Society (ERS) Innovation in Nontuberculous Mycobacteria Science and Medicine Research Award  
2020: NHLBI PRIDE-AGOLD Scholar  
2019: ATS Assembly on Pulmonary Infections & Tuberculosis Rising Star Award  
2016: ATS Foundation Unrestricted Research Grant  
2015: ASM Leaders Inspiring Networks and Knowledge (LINK) Award  
2015: Colorado Clinical Translational Sciences Institute (CCTSI) CO-Pilot Award  
2015: American Society for Microbiology Career Development Award for Postdoctoral Women (CDGPW)  
Keystone Symposia/Annual Biomedical Research Conference for Minority 2013: Students (ABRCMS) Scholarship  
2012, 2013: NRSA T32 NHLBI Postdoctoral Pulmonary Fellowship (5 T32 HL 7085-38)  
2011: Tim Gill Endowment for AIDS Research Fellowship  
2010: NRSA T32 NIAID Postdoctoral Fellowship, Colorado HIV-1 Research Training Program (T32 -AI007447-19)  
2008: Minority Trainee Research Forum Graduate Award Recipient  
2007: American Society of Biological Sciences Diversity Scholar Award Recipient

### Publications

Virdi, R, Lowe, M, Norton, GJ, Dawrs, SN, Hasan, NA, Epperson, LE, Glickman, CM, Chan, ED, Strong, M, Crooks, JL and JR Honda. "Lower recovery of nontuberculous mycobacteria from outdoor Hawaii environmental water biofilms compared to indoor samples." *Microorganisms*, 2021.

NA. Hasan#, GJ. Norton#, R. Virdi, LE. Epperson, CK Vang, B. Hellsbusch, X. Bai, ED. Chan, M. Strong and J.R. Honda. "Measurable genomic changes in *Mycobacterium avium* subsp. *hominissuis* after long-term adaptation in *Acanthamoeba lenticulata* and reduced persistence in macrophages." *Journal of Bacteriology*. 2020. PMID: 33431432. Glickman, C.M#, Virdi, R#, Hasan, N.A., Epperson, L.E., Brown, L., Dawrs, S.N., Crooks, J.L., Chan, E.D., Strong, M. and J.R. Honda. "Assessment of soil features on the growth of environmental nontuberculous mycobacterial isolates from Hawai'i." *Applied Environmental Microbiology*. 2020. PMID: 32859599.

Dawrs, S.N., Kautz, M., Chan, E.D. and J.R. Honda. "Mycobacterium abscessus and gastroesophageal reflux: an in vitro study." *American Journal of Respiratory and Critical Care Medicine*. 2020. PMID: 32298605.

Honda, JR., Hess, T., Fickes, R., Kandasamy, P., Nieto, L.M., Norton, G.J., Virdi, R., Islam, M.N., Mehaffy, C., Hasan, N.A., Epperson, L.E., Hesser, D., Alper, S., Strong, M., Flores, S.C., Voelker, D.R., Dobos, K.M. and E.D. Chan. Nontuberculous mycobacteria show differential infectivity and use phospholipids to antagonize the antibacterial activity of LL-37." *American Journal of Respiratory Cell and Molecular Biology*. 2019. PMID: 31545652.

Honda, J.R., Hasan, N.A., Davidson, R.M., Williams, M.D., Epperson, L.E., Reynolds, P.R., Smith, T., Iakhiava, E., Bankowski, M.J., Wallace, R.J., Chan, E.D., Falkinham, J. and M. Strong. "Environmental Nontuberculous Mycobacteria in the Hawaiian Islands." *PLoS Neglected Tropical Diseases*, 2016. PMID 27780201.

Honda, JR., Hess, T., Malcolm, KC., Ovrutsky, AR., Bai, X. Irani, VR. Dobos, K.M., Chan, ED and SC Flores. Pathogenic nontuberculous mycobacteria resist and inactivate cathelicidin: implication of a novel role for polar mycobacterial lipids." *PLOS One*, 2015 PMID: 25993058.

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