Dr. Taosheng Huang is a physician-scientist, currently he is Chief of Human Genetics at the University of Buffalo, Director of Medical Genetics, Oishei Children’s Hospital, Director of Genetics Service, West Lake Cancer Program. He is in the process of establishing the Center for Excellence in Mitochondrial Disease. Before taking the position at Buffalo, Dr. Huang was a professor with tenure in Human Genetics**,** Director, Program of Mitochondrial Medicine**.** Associate Director of the Molecular Diagnostic laboratory at Cincinnati Children's Hospital Medical Center (CCHMC). Before he moved to CCHMC, he was was an associate professor with tenure in Pediatrics, Developmental and Cell Biology, and Pathology at University of California, Irvine. Previously, he was also the director for the MitoMed Molecular Diagnostic laboratory and Director of the Cardiovascular Genetic Clinic. Dr. Huang graduated from Fujian Medical University in 1983 and moved to New York for Ph.D. study at Mount Sinai Medical School in 1997. During his Ph.D. study, Dr. Huang worked on replication and transcription of the influenza virus. He found that four viral proteins are essential for viral replication and transcription. He also found that Mx protein represses influenza virus replication by inhibiting viral polymerase II. Dr. Huang completed his pediatrics residency at Georgetown University Hospital in 1996. From 1996 to 1999, Dr. Huang did his clinical genetics and clinical molecular genetics fellowship at Harvard Medical School under the supervision of Drs. Christine Seidman and Jonathan Seidman. In the Seidman lab, Dr. Huang worked on TBX5 and congenital heart diseases. He found that mutations of TBX5 affect protein-DNA interaction and cause cardiac defects. Dr. Huang became a junior faculty at the Children’s Hospital at Harvard from 1999-2001. He was a recipient of the Clinical Associate Physician Award from NIH and the Dean’s Junior Physician-Scientist award at UCI. Dr. Huang is board-certified in Pediatrics, Clinical Genetics and Clinical Molecular Genetics.



In 2001, Dr. Huang moved to the University of California, Irvine as an independent investigator. The primary interest of his lab is to study the molecular basis of genetic syndromes, and apply discoveries from genetic syndromes to common diseases. After he moved to UC Irvine, Dr. Huang continued working on TBX5 and congenital heart disease. During this time, Dr. Huang’s group was the first to link TBX3 and cancer. They also found that TBX3 plays a very important role in human embryonic stem cell differentiation. Currently, this project is funded by an NCI R01 and a R01 supplement. To develop a therapy for genetic disease, Dr. Huang’s lab has also actively pursued the *Drosophila* model for human genetic diseases. They have created a *Drosophila* optic atrophy model and identified two distinctive pathways that cause cell loss by mutation of the OPA1 gene. Dr. Huang’s group demonstrated that antioxidants can partially rescue the phenotypes caused by OPA1 mutations. This study serves as an example employing screening therapeutic agents on the *Drosophila* model. The lab has a very active project in research of embryonic stem cells and induced pluripotent stem cells for retinal degenerative diseases. The project is funded by National Eye Institute.

In 2012, Dr. Huang joined Cincinnati Children's Hospital Medical Center (CCHMC) to direct the program of Mitochondrial Medicine. The goal of the program is the integration of the research, molecular testing and clinical service to improve the care of patients with mitochondrial disease. With an enriched patient population at Cincinnati Children’s Hospital Medical Center, his group has identified several novel genes associate with human disease including SLC25A46 mutations in optic atrophy and peripheral neuropathy**.** Currently, his laboratory is characterizing them with both an iPS cell model and a CRISPR/Cas9 produced mouse model.

At Harvard Medical School, Dr. Huang actively participated in training clinical fellows and research fellows. Some of them have become independent investigators and/or serve as lab directors in molecular diagnostic labs, cytogenetic labs. Furthermore, he has continued this extensive teaching effort after moving to UC Irvine. All this demonstrates Dr. Huang’s commitment to training the next generation of researchers.

Clinically, Dr. Huang is interested in genetics of mitochondrial diseases, genetic syndromes with congenital cardiac defects, pharmacogenomics, prenatal screening and prenatal diagnosis and new born screening. He has been actively engaged in the exchange program between the United States and China. Dr. Huang previously served as VP of New England Area and the medical director of the American Chinese Medical Association. He has visited China many times, greatly impacting the health policy there. In recent years, Dr. Huang has been training clinical geneticists in China. Dr. Huang is a guest professor of Beijing University, a special professor of the Center of Genetics and Genomics Medicine at Zhejiang University, and an honorary professor of Peking Union Medical School. He was appointed member of the special committee for Yusheng Yuyou of People’s Republic of China and advisory board member to Chinese Ministry of Health for targeted therapy. Moreover, he recently became a principal investigator for birth defect control program of Chinese Ministry of Health and a Steering Committee member for Standardized Residency and Fellowship Training.