# Kuan-lin Huang, Ph.D.

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Date CV Prepared: 1/19/2024

## MISSION

Empower every person to live healthily to 100-year-old by providing accurate & personalized prediction of disease risk, effective treatment, and health outcome.

## APPOINTMENT/EMPLOYMENT

**Assistant Professor**, Genetics and Genomic Sciences                                     10/2018-Present
Faculty, Mount Sinai Center for Transformative Disease Modeling
Faculty, Icahn Genomics Institute
Associate Member, Tisch Cancer Institute
Icahn School of Medicine at Mount Sinai, NY, USA

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Lab website: www.ComputationalOmicsLab.org

**Co-Founder and Chief Unboxer**, Open Box Science (OpenBoxScience.Org)                  05/2020-Present
Open Box Science (OBS) is a 501c3 non-for-profit that I started to provide a worldwide, open platform for science education and communication. The OBS community has hosted >200 webinars, breaking barriers to scientific knowledge and advances. My involvement with OBS is approved by Mount Sinai FCOI committee, so long I receive zero compensation from OBS.

## GAPS IN EMPLOYMENT

Not applicable

## EDUCATION

**Postdoctoral Fellow,** Department of Medicine, Washington University in St. Louis**,** MO        09/2018
    Advisor: Dr. Li Ding (Multi-Omics Algorithms)

**Ph.D., Genetics and Genomics**, Washington University in St. Louis**,** MO                 02/2018
    Dissertation: *Multi-omics Portraits of Cancer*
    Advisor: Dr. Li Ding (Cancer Genomics, 2014-2018)
        Drs. Alison M. Goate and Carlos Cruchaga (Statistical Genetics & Alzheimer's Disease, 2013-2014)
    **Awards**: Taiwanese Ministry of Education Ph.D. Scholarship / Lucille P. Markey Pathway in Human Pathobiology

**B.A.**, Wesleyan University, Middletown, CT                                          05/2012
    *High Honors.* Thesis research in Molecular Biology & Biochemistry (Advisor: Dr. Scott G. Holmes)
    *Honors.* Thesis installation exhibition in Studio Art (Advisor: Jeffrey Schiff)
    **Awards**: Freeman Full-Ride Four-Year Scholarship (1~2 Taiwanese students/year) / Howard Hughes Summer Research Fellowships / Scott Biomedical Prize / the only person in class awarded 2 *Honors*

## CERTIFICATION

Not applicable

## LICENSURE

Not applicable

## HONORS/AWARDS

| | | |
|---|---|---|
| 1. | **Jane Martin and Stuart Katz Research Scholar Award** [Health System] | 2023 |
| 2. | **NIGMS Maximizing Investigators' Research Award (MIRA) for ESI** [National] | 2020-2025 |
| 3. | **Alzheimer's Association International Conference (AAIC) Fellowship** [International] | 2016 |
| 4. | **First Place Winner, Skandalaris Healthcare Hackathon** [Regional] | 2015 |

| | |
|---|---|
| 5. **Taiwanese Ministry of Education Ph.D. Scholarship** [National] | 2014-2015 |
| 6. **Lucille P. Markey Pathway in Human Pathobiology** [Institutional] | 2014 |
| 7. *Honors* **(Studio Art) &** *High Honors* **(Molecular Biology) Dissertations, Wesleyan University** [Institutional] | 2012 |

7. *Honors* **(Studio Art) &** *High Honors* **(Molecular Biology) Dissertations, Wesleyan University** [Institutional]     2012
The only person in the 2012 class to receive two *honors* designations
8. **Scott Biomedical Prize, Wesleyan University** [Institutional]     2012
Awarded to one graduating senior showing strong promise in biomedical research
9. **Howard Hughes Undergraduate Research Scholarship** [National]     2010, 2011
Awarded two terms to support full-time summer undergraduate research in molecular genetics
10. **Freeman Asian Full-Ride Scholarship for Wesleyan University, CT** [International]     2008-2012
Merit-based, full-ride scholarship awarded to 1~2 Taiwanese students per year to attend Wesleyan University
11. **Math and Science Gifted Program at Chien-Kuo Senior High School, Taiwan** [National]     2005-2008
Admitted to the most competitive academic program (60 students/yr) in the lowest-acceptance-rate high school in Taiwan
12. **Youth Athlete-Diplomat Representing Taiwan for the 2006 Asian Games, Doha, Qatar** [National]     2006
Chosen as 1 of the 4 Youth Athlete-Diplomat representing Taiwan for the 2006 Asian Games

## PATENTS

Not applicable

## OTHER ENTREPRENEURIAL ACTIVITIES

1. **Co-Founder and Chief Unboxer,** Open Box Science, a 501(c)(3) non-for-profit     2020-Present
2. **Co-Founder and CEO,** DeepGene LLC     2016-2017

## OTHER PROFESSIONAL ROLES

**Active Peer-Reviewer: average 15 manuscripts/year, * indicates multiple times**
 <u>Grant Proposals</u>
 ***Ad Hoc Peer-Review:*** Arizona Alzheimer's Disease Core Center Grant* / Wellcome Trust International Fellowships / UC Davis Alzheimer's Disease Research Center (ADRC) Development Project Fund
 <u>Research Manuscripts</u>
 **Guest Associate Editor:** Frontiers in Aging Neuroscience (Topic: Advancing Clinical Neuroscience by Multi-Omic Driven Approaches Towards Personalized Medicine: Opportunity, Challenges, and the Future)
 ***Ad Hoc Peer-Review:*** Bioinformatics* / BMC Bioinformatics / BMC Genomics / BMC Neurology / BMJ Medicine / Cell Reports / Cell Reports Medicine* / Clinical Proteomics / Communications Medicine / EMBO Molecular Medicine / Frontiers in Genetics / Genome Medicine* / Human Molecular Genetics / iScience / Molecular and Cellular Proteomics / Nature Cancer / Nature Communications* / Nature Medicine / npj Digital Medicine / Nucleic Acid Research / PLOS Computational Biology

**Active Memberships for Professional Societies:** American Association for Cancer Research (AACR)/American Society of Human

Genetics (ASHG)/International Society to Advance Alzheimer's Research and Treatment (ISTAART)/International Society for

Computational Biology (ISCB)

## RESEARCH PROFILE

I am a human genomicist with track records in statistical genetics, DNA-sequencing (DNA-Seq) studies, proteomic biomarkers, multi-omic algorithm and software development. My research aims to provide accurate risk assessment and treatment options based on each individual's genome. In my Ph.D. and post-doc, I served as the lead analyst for multiple national/international consortium projects, including IGAP (GWAS), TCGA PanCanAtlas Germline Working Group (DNA-Seq), and CPTAC (Proteomics). My first-author contributions (Huang et al.) include genome-wide association studies (GWAS) of Alzheimer's diseases (Nature Neuro 2017), large-scale DNA-Seq analyses of cancer (Cell 2018), proteogenomics integration for patient-derived models (Nature Comm 2017), and software for analyzing multi-omic data (MCP 2019, Nature Comm 2021), in addition to two co-first-author genomic studies (Neoplasma 2016, Cancer Cell 2020). The genomic datasets I processed and the bioinformatic tools I developed have been cited and used in thousands of other studies. My research program at the Icahn School of Medicine at Mount Sinai (ISMMS) is guided by three principles: (1) Embrace diversity, (2) Integrate multi-modal big data, and (3) Prioritize early detection and prevention. As PI and Co-I on several NIH-funded grants, my lab's primary contribution to science includes unveiling pathogenic variants in diverse populations, developing software for analyzing multi-omics big data, identifying genetic predictors of treatment outcomes, and constructing machine-learning (ML) models to predict disease risks and treatments. As of January 2024, I have published 18 last-author research articles, and have an H-index: 37, Citations: 13,183 based on Google Scholar.

## CLINICAL PROFILE

Not applicable

## MENTORSHIP PROFILE

Since I started my lab at ISMMS (10/2018), I have served as primary mentors for 4 postdoc fellows, 1 hem/onc fellow, 1 PhD student, 1 bioinformatician, and 5 MS students whose primary affiliation is at ISMMS, and a visiting instructor. My lab also hosts ISMMS-based summer students (through DEI programs) and MD students for research project each year. External volunteer/trainees who have completed first-author papers for which I am the primary mentor (last-author) include 1 high-school student, 2 undergraduate students, 2 MD students, 2 PhD students, and 1 postdoc. Additionally, I serve on thesis committees for 7 PhD students and 3 MS students at ISMMS, and 2 external PhD thesis reader. My trainees come from diverse backgrounds, and they have gone on to successful careers in world-renowned companies and academic institutions after training, including Harvard, Columbia, Stanford, St. Jude, ISMMS, and Genentech.

My mentorship philosophy is rooted in continuous growth. I am committed to honing my mentorship skills by actively seeking feedback from trainees and mentors. I view mentorship as the cultivation of a vibrant forest within the scientific community, where each budding researcher symbolizes a young tree, aspiring to reach new heights in their scientific journey. As a mentor, I embrace the role of a dedicated tree planter, responsible for nurturing their development. I identify their strengths, guide them away from potential dead ends, and provide essential support through knowledge, guidance, and resources. Ultimately, I aim to empower them to thrive independently in their scientific pursuits.

## DIVERSITY AND INCLUSION IMPACT

I advocate for diversity, equity, and inclusion (DEI) at my lab, institution, and not-for-profit. Since 2018, my lab's initial 8 postdocs, graduate, and medical students represent 7 different nationalities and 6 major religious groups. To ensure that every individual's voice is valued, I established comprehensive lab guidelines. For instance, during our lab meetings, we foster inclusivity by having the presenter initiate discussions with an open-ended question, requiring each member to contribute their unique perspective. At ISMMS, I am committed to championing these principles by actively participating in institutional DEI initiatives, including hosting and lecturing for DEI scholars each year. My dedication to DEI transcends national boundaries, as I am deeply concerned about the disparities in scientific opportunities across countries. To address this, I co-founded a 501(c)(3) non-profit organization in 2020, alongside two like-minded colleagues, with a focus on open science and communication. Over the past two years, our NGO has organized and hosted over 200 free talks, reaching a global audience spanning more than 70 countries. The OBS community follows a guideline of inviting early-career researchers (i.e., first authors) from diverse backgrounds to provide a sharing platform. We actively collaborate with discipline-specific interest groups across Latin America, Asia, Europe, Africa, and Australia, ensuring equitable access to knowledge and training opportunities. Together, we aim to build a future where scientists have equal access to knowledge, training, and can communicate seamlessly across boundaries.

## OVERALL IMPACT

My research profile is characterized by a commitment to advancing computational biology with the goal of providing personalized risk assessments and treatment options based on individual genomes. I have made significant contributions to consortium projects, authored influential publications as first authors and last authors (**See PUBLICATIONS section below**), and developed bioinformatic tools that have been widely adopted by the scientific community. My research program at the Icahn School of Medicine at Mount Sinai (ISMMS) is driven by principles of diversity, multi-modal data integration, and early detection and prevention, resulting in groundbreaking findings and NIH-funded grants.

As a mentor, I have played a pivotal role in nurturing the careers of numerous postdocs, students, and trainees, both within and outside ISMMS. My mentorship philosophy centers on continuous growth and empowerment, ensuring that my mentees develop the skills and confidence to succeed in their scientific pursuits. Many of my mentees have gone on to successful careers in prestigious academic institutions and companies (**See TRAINEES section below**)—a testament to the effectiveness of my mentorship.

My commitment to diversity, equity, and inclusion (DEI) extends across my lab, institution, and non-profit initiatives. By fostering diversity within my lab and implementing inclusive practices, I have created an environment where all voices are valued and heard. At ISMMS, I actively engage in DEI initiatives, promoting these values within the institution. Furthermore, I co-founded a non-profit organization focused on open science and communication, hosting numerous free talks that have reached and benefitted a global audience.

In summary, my research, mentorship, and DEI efforts collectively aim to drive progress in precision medicine, empower the next generation of scientists, and build an inclusive scientific community.

# GRANTS, CONTRACTS, FOUNDATION SUPPORT

**PAST GRANTS**

| Funding Source/Project Title | Role in Project | Dates | Total Costs | Supplemental Info |
|---|---|---|---|---|
| **Google Cloud Pilot Grant** (Huang) <br> **A Web-based Simulator for Pandemic Containment Strategies** | PI | 4/1/2020 - 10/1/2020 | $14,000 | |
| **Mount Sinai Genetics and Genomic Sciences Pilot Grant** (Gang) <br> **A Novel Epigenetic Mark in Alzheimer Disease and Aging** | Co-I | 10/1/2019 - 10/1/2020 | $50,000 | |

**CURRENT GRANTS**

| Funding Source/Project Title | Role in Project | Dates | Total Costs | Supplemental Info |
|---|---|---|---|---|
| **American Cancer Society** <br> RSG-22-115-01-DMC (Huang) <br> **Pan-ancestry Identification of Pathogenic Variants affecting DNA Repair** | PI | 01/01/2023-12/31/2026 | $792,000 | |
| **Mount Sinai FBI/ADRC** <br> Mount Sinai ADRC Scholar Award (Elahi, Huang, Goate) <br> **Unbiased Discovery of Early Molecular Dysregulations in Alzheimer's Disease** | M-PI | 01/01/2023-12/31/2023 | $60,000 | |
| **NIH NIGMS** <br> R35 GM138113 (Huang) <br> **Integrative Approaches for Identifying Causal Gene-Cell Type Pairs of Complex Disease** | PI | 9/15/2020-7/31/2025 | $2,115,345 | |
| **NIH NINDS** <br> R01 NS116006 (Raj) <br> **The Role of Myeloid Cells in Parkinson's Disease** | Co-I | 4/1/2021-3/31/2026 | $3,398,901 | |
| **NIH NIA** <br> R01 AG072300 (Castellano) <br> **Mechanisms of Youth-associated Blood-borne Factors Regulating CNS Rejuvenation** | Co-I | 5/1/2021-04/31/2024 | $1,518,274 | |
| **NIH NCI** <br> P20 CA264076 (Taioli) <br> **Feasibility study to build a collaboration in genetics and genomic cancer research** | Subproject PI | 9/21/2021-8/31/2025 | $1,297,369 | |

**PENDING GRANTS**

| Funding Source/Project Title | Role in Project | Dates | Total Costs | Supplemental Info |
|---|---|---|---|---|
| **NIH NIA** <br> R01AG085595 (O'Reilly, Huang) <br> **A pathway-driven approach to stratified medicine for AD** | M-PI | 12/1/2023 - 11/30/2028 | $4,205,575 | |
| **NIH NIGMS** (Huang) <br> **A Supplement Project To Identify Microglial Driver Genes in Alzheimer's Disease** | PI | 1/1/2024 - 12/31/2024 | $422,500 | |
| **NIH NCI** <br> U01CA282267 (Huang, Lucas, O'Reilly) <br> **Genetics-informed Biomarker Strategy for Pancreatic Cancer Detection** | M-PI (contact) | 4/1/2024 - 3/31/2029 | $5,062,276 | |
| **NIH NHGRI** <br> R01HG013763 (Huang) <br> **Rare Polygenic Risk Scores for Personalized Disease Risk Prediction in Diverse Populations** | PI | 7/1/2024 - 6/30/2029 | $2,945,940 | |
| **NIH NHGRI** <br> R01HG013668 (Do, Huang) <br> **Quantitative and Context-Specific Penetrance of Clinical Variants in Tier 1 Genomic Conditions in Diverse Populations** | M-PI | 7/1/2024 - 6/30/2029 | $4,242,074 | |
| **NIOSH/CDC** <br> U01OH012781 (Huang, Taioli) <br> **Spatially and Cellularly Resolved Maps of DNA Damage and Immune Response in WTC-Related Prostate Tumors** | M-PI (contact) | 7/1/2024 - 6/30/2026 | $699,226 | |

# CLINICAL TRAILS PARTICIPATION

Not applicable

# TRAINEES

| Name | Level of Trainee | Role in Training & Inclusive Dates of Training | Training Venue | Trainee's Immediate Outcome & Current Status/Employment |
|---|---|---|---|---|
| **Zeynep Akcay-Ozkan, PhD** | Visiting Instructor | Supervisor **[2023-]** | ISMMS | |
| **Rita Jui-Hsien Lu, MS** | Bioinformatician | Supervisor **[2023-]** | ISMMS | |
| **Jordan Rosen, BS** | MS student | Master's research mentor **[2022-]** | ISMMS | |
| **Nathalie Ramos, BS** | MS student | Master's research mentor **[2022-2023]** | ISMMS | TBD |
| **Megan Wojciechowicz, BS** | PhD student | PhD advisor **[2022-]** | ISMMS | |
| **Tefike Okotete** | Undergraduate student | Research mentor for intern projects **[2022]** | ISMMS (trainee at NYU) | Continuing undergraduate studies at NYU |
| **Raj Vaza, BS** | MS student | Master's research mentor **[2022-2023]** | ISMMS | Medical Student, University of Central Florida |
| **Yuqi Liu** | Undergraduate student | Research mentor for volunteer projects **[2021-2023]** | ISMMS (trainee at NYU) | Research Assistant, Rockefeller University |
| **Michael Wang, MD** | PhD student | Research mentor for visiting scholar **[2019-2022]** | ISMMS (trainee at PUMC) | Resident Surgeon, Peking Union Medical College |
| **Tzipora Weinberger, BS** | Master's student | Master's research mentor **[2020-2022]** | ISMMS | Data Scientist, Hackensack Meridian Health |
| **Rikhiya Ghosh, PhD** | Postdoc | Postdoc mentor **[2021-2023]** | ISMMS | Microsoft-Siemens |
| **Jimmy Zhang** | High school student | Research mentor **[2019-2021]** | ISMMS (trainee at Queens High School for the Sciences) | Undergraduate, Columbia University |
| **Tomi Jun, MD** | Hem/onc Fellow | Research mentor **[2019-2021]** | ISMMS | Medical Director, SEMA4 *Genentech (current)* |
| **Zishan Wang, PhD** | Postdoc | Postdoc mentor **[2019-]** | ISMMS | |
| **Jing Wang, PhD** | Postdoc | Postdoc mentor **[2019]** | ISMMS | Data Scientist, Amazon |
| **Abdulkadir Elmas, PhD** | Postdoc | Postdoc mentor **[2019-]** | ISMMS | |
| **William Lee, BS** | Master's student | Master's research mentor **[2019-2020]** | ISMMS | Bioinformatician II, ISMMS *Clinical Data Analyst, TrialSpark (current)* |
| **Tao Qing, PhD** | Postdoc | Advised on collaborative projects with Dr. Lajos Pustzai **[2019-2022]** | ISMMS (trainee at Yale) | Senior Scientist, Freenome |
| **Katherine Houlahan, PhD** | PhD student | Advised on collaborative projects with Dr. Paul Boutros **[2019-2021]** | ISMMS (trainee at UCLA) | Postdoc, Stanford (w/ Christina Curtis) |
| **Guanlan Dong, BS** | Undergraduate student | Research mentor for volunteer projects **[2019-2020]** | ISMMS (trainee at WashU) | Harvard B.I.G. PhD program |
| **Ninad Oak, PhD** | PhD student | Advised on collaborative projects with Dr. Sharon Plon **[2018-2020]** | ISMMS (trainee at Baylor) | Scientist, St. Jude Children's Hospital *Senior Scientist (current)* |

**PhD Dissertation Committee** [Name (Program, graduation year or rotation year)]**:**
Nicole Zatorski (Pharmacology and Therapeutics Discovery '23)/ **Miriam Saffern** (Immunology)/ **Julia Zhao** (Genetics and Genomic Sciences '23) / **Yihan Zhao** (Genetics and Genomic Sciences)/ **Hannah Kittrell** (Genetics and Genomic Sciences)/ **Robert Chen** (Genetics and Genomic Sciences)/ **Josh Park** (Genetics and Genomic Sciences)
External: **Katrin Bauer** (external thesis reader, University Medical Center Mainz) / **Mikaela Koutrouli** (external thesis reader, University of Copenhagen)

**MS Dissertation Committee:**
**Nile Rizvi** (Biomedical Sciences '23) / **Gauri Ganesh** (Biomedical Sciences '23) / **Andy Yang** (Biomedical Sciences)

**PhD Rotation Students:**
**Miriam Saffern** (Immunology, 2020)/ **Rebecca Signer** (Genetics and Genomic Sciences, 2021)/ **Hannah Kittrell** (Genetics and Genomic Sciences, 2022)/ **Megan Wojciechowicz** (Pharmacology and Therapeutics Discovery, 2022)/**Eric Park** (Genetics and Genomic Sciences, 2022)

**Medical Students (mostly second semester of M1 ~ first semester of M2):**
**Prag Batra** (2018-2020)**, Serena Tharakan** (2019-2020)**, Alexandra Capellini** (2019-2020)**, Matthew Williams** (2019-2020)**, Daniel Fulop** (2019-2022)**, Makda Zewde** (2020-)**, Suraj Jaladanki** (2019-2021)**, Gabriel Santos Malave** (2020-2021)**, Chang Moon** (2020-2021)**, Luo Song** (2021-2022)**, Varun Subramaniam** (2022-2023)**, Kevin Spehar** (2022-2023)

# TEACHING ACTIVITIES

| | | |
|---|---|---|
| 1. | **Guest Lecturer (multiple courses),** Icahn School of Medicine at Mount Sinai | 2019-Present |
| 2. | **Teaching Assistant and Guest Lecturer,** Washington University in Saint Louis, MO | 2014-2017 |
| 3. | **Community Health Project Founder and Leader**, Matibabu Foundation, Kenya | 2013 |
| 4. | **English Instructor** for compulsory substitute military service, Zhuwei Elementary School, Taiwan | 2012-2013 |
| 5. | **Teaching Assistant,** Wesleyan University, CT | 2010-2011 |

# ADMINISTRATIVE LEADERSHIP APPOINTMENTS

**TEACHING** (Internal)
Abbreviations: Mount Sinai GGS (Department of Genetics and Genomic Sciences), Mount Sinai TDM (Center for Transformative Disease Modeling)

| | |
|---|---|
| **Co-lead, GGS Departmental Cancer Genomics WIP**, Icahn School of Medicine at Mount Sinai | 2021-2023 |
| **Co-lead, TDM Seminar Series**, Icahn School of Medicine at Mount Sinai | 2020-2021 |

**GENERAL ADMINISTRATION** (Internal)

| | |
|---|---|
| **Member, GGS Faculty Search Committee**, Icahn School of Medicine at Mount Sinai | 2022-Present |
| **Member, GGS Faculty Engagement Committee**, Icahn School of Medicine at Mount Sinai | 2021-Present |
| **Member, GGS Faculty Mentorship Committee**, Icahn School of Medicine at Mount Sinai | 2021-Present |
| **Member, Postdoc Advisory Committee**, Icahn School of Medicine at Mount Sinai | 2020-2022 |

# PUBLICATIONS

**H-index: 37, Citations: 13,183 as of 1/17/2024 (Google Scholar)**

**Peer-Reviewed Original Contributions** [*Co-first authors. #Co-corresponding authors. ℅Consortium authorship]:

**Summary of Peer-Reviewed Research Articles:** 5 first-author (Nat Comm 2017, Nat Neuro 2017, Cell 2018, MCP 2019, Nat Comm 2021), 2 co-first author (Neoplasma 2016, Cancer Cell 2020). Since ISMMS appointment in 2018, 18 last-author research articles.

1. Yeast Tdh3 (glyceraldehyde 3-phosphate dehydrogenase) is a Sir2-interacting factor that regulates transcriptional silencing and rDNA recombination.
   Ringel AE, Ryznar R, Picariello H, **Huang KL**, Lazarus AG, Holmes SG.
   PLoS Genet. 2013;9(10):e1003871. doi: 10.1371/journal.pgen.1003871. Epub 2013 Oct 17. PMID: 24146631

2. Patterns and functional implications of rare germline variants across 12 cancer types.
   Lu C*, Xie M*, Wendl MC*, Wang J*, McLellan MD*, Leiserson MD*, **Huang KL**, Wyczalkowski MA, Jayasinghe R, Banerjee T, Ning J, Tripathi P, Zhang Q, Niu B, Ye K, Schmidt HK, Fulton RS, McMichael JF, Batra P, Kandoth C, Bharadwaj M, Koboldt DC, Miller CA, Kanchi KL, Eldred JM, Larson DE, Welch JS, You M, Ozenberger BA, Govindan R, Walter MJ, Ellis MJ, Mardis ER, Graubert TA, Dipersio JF, Ley TJ, Wilson RK, Goodfellow PJ, Raphael BJ, Chen F, Johnson KJ, Parvin JD, Ding L.
   Nat Commun. 2015 Dec 22;6:10086. doi: 10.1038/ncomms10086. PMID: 26689913 **[Covered by 17 news outlets]**

3. Pan-cancer methylation and expression profiling of adenocarcinomas revealed epigenetic silencing in the WNT signaling pathway.
   Li J*, **Huang KL*,** Zhang T, Li H, Zhao J, Wang H.
   Neoplasma 2016; 63 (2), 208-214

4. Systematic discovery of complex insertions and deletions in human cancers.
   Ye K, Wang J, Jayasinghe R, Lameijer EW, McMichael JF, Ning J, McLellan MD, Xie M, Cao S, Yellapantula V, **Huang KL**, Scott A, Foltz S, Niu B, Johnson KJ, Moed M, Slagboom PE, Chen F, Wendl MC, Ding L.
   Nat Med. 2016 Jan;22(1):97-104. doi: 10.1038/nm.4002. Epub 2015 Dec 14. PMID: 26657142 **[Covered by 9 news outlets]**

5.  Proteogenomics connects somatic mutations to signalling in breast cancer.
    Mertins P, Mani DR, Ruggles KV, Gillette MA, Clauser KR, Wang P, Wang X, Qiao JW, Cao S, Petralia F, Kawaler E, Mundt F, Krug K, Tu Z, Lei JT, Gatza ML, Wilkerson M, Perou CM, Yellapantula V, **Huang KL**, Lin C, McLellan MD, Yan P, Davies SR, Townsend RR, Skates SJ, Wang J, Zhang B, Kinsinger CR, Mesri M, Rodriguez H, Ding L, Paulovich AG, Fenyö D, Ellis MJ, Carr SA; NCI CPTAC.
    Nature. 2016 Jun 2;534(7605):55-62. doi: 10.1038/nature18003. Epub 2016 May 25. PMID: 27251275 **[Covered by 4 news outlets]**

6.  Chitinase-3-like 1 protein (CHI3L1) locus influences cerebrospinal fluid levels of YKL-40.
    Deming Y, Black K, Carrell D, Cai Y, Del-Aguila JL, Fernandez MV, Budde J, Ma S, Saef B, Howells B, Bertelsen S, **Huang KL**, Sutphen CL, Tarawneh R, Fagan AM, Holtzman DM, Morris JC, Goate AM, Dougherty JD, Cruchaga C.
    BMC Neurol. 2016 Nov 10;16(1):217. doi: 10.1186/s12883-016-0742-9. PMID: 27832767

7.  Proteogenomic integration reveals therapeutic targets in breast cancer xenografts.
    **Huang KL**\*, Li S\*, Mertins P\*, Cao S, Gunawardena HP, Ruggles KV, Mani DR, Clauser KR, Tanioka M, Usary J, Kavuri SM, Xie L, Yoon C, Qiao JW, Wrobel J, Wyczalkowski MA, Erdmann-Gilmore P, Snider JE, Hoog J, Singh P, Niu B, Guo Z, Sun SQ, Sanati S, Kawaler E, Wang X, Scott A, Ye K, McLellan MD, Wendl MC, Malovannaya A, Held JM, Gillette MA, Fenyö D, Kinsinger CR, Mesri M, Rodriguez H, Davies SR, Perou CM, Ma C, Reid Townsend R, Chen X, Carr SA, Ellis MJ, Ding L.
    Nat Commun. 2017 Mar 28;8:14864. doi: 10.1038/ncomms14864. PMID: 28348404 **[Covered by 8 news outlets]**

8.  Genome-wide association study identifies four novel loci associated with Alzheimer's endophenotypes and disease modifiers.
    Deming Y, Li Z, Kapoor M, Harari O, Del-Aguila JL, Black K, Carrell D, Cai Y, Fernandez MV, Budde J, Ma S, Saef B, Howells B, **Huang KL**, Bertelsen S, Fagan AM, Holtzman DM, Morris JC, Kim S, Saykin AJ, De Jager PL, Albert M, Moghekar A, O'Brien R, Riemenschneider M, Petersen RC, Blennow K, Zetterberg H, Minthon L, Van Deerlin VM, Lee VM, Shaw LM, Trojanowski JQ, Schellenberg G, Haines JL, Mayeux R, Pericak-Vance MA, Farrer LA, Peskind ER, Li G, Di Narzo AF; Alzheimer's Disease Neuroimaging Initiative (ADNI); Alzheimer Disease Genetic Consortium (ADGC); Kauwe JS, Goate AM, Cruchaga C.
    Acta Neuropathol. 2017 May;133(5):839-856. doi: 10.1007/s00401-017-1685-y. Epub 2017 Feb 28. PMID: 28247064

9.  GenomeVIP: a cloud platform for genomic variant discovery and interpretation.
    Mashl RJ, Scott AD, **Huang KL**, Wyczalkowski MA, Yoon CJ, Niu B, DeNardo E, Yellapantula VD, Handsaker RE, Chen K, Koboldt DC, Ye K, Fenyö D, Raphael BJ, Wendl MC, Ding L.
    Genome Res. 2017 Aug;27(8):1450-1459. doi: 10.1101/gr.211656.116. Epub 2017 May 18. PMID: 28522612

10. A common haplotype lowers PU.1 expression in myeloid cells and delays onset of Alzheimer's disease.
    **Huang KL**, Marcora E, Pimenova AA, Di Narzo AF, Kapoor M, Jin SC, Harari O, Bertelsen S, Fairfax BP, Czajkowski J, Chouraki V, Grenier-Boley B, Bellenguez C, Deming Y, McKenzie A, Raj T, Renton AE, Budde J, Smith A, Fitzpatrick A, Bis JC, DeStefano A, Adams HHH, Ikram MA, van der Lee S, Del-Aguila JL, Fernandez MV, Ibañez L; International Genomics of Alzheimer's Project; Alzheimer's Disease Neuroimaging Initiative; Sims R, Escott-Price V, Mayeux R, Haines JL, Farrer LA, Pericak-Vance MA, Lambert JC, van Duijn C, Launer L, Seshadri S, Williams J, Amouyel P, Schellenberg GD, Zhang B, Borecki I, Kauwe JSK, Cruchaga C, Hao K, Goate AM.
    Nat Neurosci. 2017 Aug;20(8):1052-1061. doi: 10.1038/nn.4587. Epub 2017 Jun 19. PMID: 28628103 **[Covered by 10 news outlets]**

11. Breast tumors educate the proteome of stromal tissue in an individualized but coordinated manner.
    Wang X, Mooradian AD, Erdmann-Gilmore P, Zhang Q, Viner R, Davies SR, **Huang KL**, Bomgarden R, Van Tine BA, Shao J, Ding L, Li S, Ellis MJ, Rogers JC, Townsend RR, Fenyö D, Held JM.
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Front Cell Infect Microbiol. 2022 Jul 22;12:933190. doi: 10.3389/fcimb.2022.933190. eCollection 2022. PMID: 35942057

67. Analysis of germline-driven ancestry-associated gene expression in cancers.
Chambwe N, Sayaman RW, Hu D, Huntsman S; **Cancer Genome Analysis Network**[%]; Kemal A, Caesar-Johnson S, Zenklusen JC, Ziv E, Beroukhim R, Cherniack AD.
STAR Protoc. 2022 Jul 31;3(3):101586. doi: 10.1016/j.xpro.2022.101586. eCollection 2022 Sep 16. PMID: 35942349

68. Using EGFR amplification to stratify recurrent glioblastoma treated with immune checkpoint inhibitors.
Friedman JS, Jun T, Rashidipour O, **Huang KL**, Ellis E, Kadaba P, Belani P, Nael K, Tsankova NM, Sebra R, Hormigo A.
Cancer Immunol Immunother. 2023 Jan 28. doi: 10.1007/s00262-023-03381-y. Online ahead of print. PMID: 36707424

69. Multiscale protein networks systematically identify aberrant protein interactions and oncogenic regulators in seven cancer types.
Song WM*, Elmas A*, Farias R*, Xu P, Zhou X, Hopkins B#, **Huang KL**#, Zhang B#.
J Hematol Oncol. 2023 Dec 15;16(1):120. doi: 10.1186/s13045-023-01517-2. PMID: 38102665

70. Machine Learning Models Identify Predictive Features of Patient Mortality across Dementia Types
Zhang J, Song L, Chan K, Miller Z, **Huang KL**.
Communications Medicine, doi: 10.1038/s43856-024-00437-7 *in press*

**Other Peer Reviewed Publications:**

1. Ten Simple Rules for landing on the right job after your PhD or postdoc.
**Huang KL**. *PLoS Computational Biology* 2020. [PLoS ten simple rules series]: **8,000+ reads in only the first year of publication**.

**Invited Contributions:**

2. Advancing cancer research with artificial intelligence.
Henschke C, Yankelevitz D, Sidhom JW, Galsky M, Llovet J, Campanella G, Schlessinger A, Lagana A, Parekh S, Smith C, **Huang KL**, Guccione E, Schadt E, Parsons R. *Frontiers of Medical Research: Artificial Intelligence (A Supplement in Science Sponsored by ISMMS)* 2023.

**Books:**

3. Solve It Yourself: Fix the World's Problem with Science.
**Huang KL**. 2021. [E-book, Paperback, Hardcover]: **Amazon #1 best-seller in Civics, #2 in motivational self-help in April 2021. Author interviews on Podcast, Radio, and TV shows.**

**Non-Peer Reviewed Publications:**

4. Most popular public searches on gene names.
**Huang KL**. *Nature* 2018. [Correspondence]

# INVITED PRESENTATIONS

1. Hosted/co-hosted 10+ **Open Box Science** research seminars/career panels/science communication symposiums.
2. ADSP/COVID Planning Committee (ACPC) Teleconference, NIH NIA, USA, 2023.
3. Universitätsmedizin der Johannes Gutenberg-Universität Mainz, DIASyM research core, Germany, 2023.
4. University of Alabama at Birmingham (UAB), Department of Genetics, USA, 2023.
5. National Taiwan University Hospital, Precision Medicine Research Group, Taipei, Taiwan 2023.
6. National Sun Yet-Sun University, School of Medicine, Kaohsiung, Taiwan 2022.
7. The 5th Global Conference on Biomedical Engineering (GCBME 2022), Taipei, Taiwan 2022.
8. 2nd CASMS Virtual Conference, USA, 2022.
9. Discussion Leader for Gordon Research Conference on Human Genetic Variation and Disease, USA 2022.
10. Charleston Conference on Alzheimer's Disease (CCAD), Hawaii, USA 2022.
11. VCCC Alliance Monday Livestream, Australia, 2022.
12. Drug Discovery News (DDN) Webinar, USA, 2021.
13. Perlmutter Cancer Center Research Seminar Series, NYU Langone Health, New York, USA, 2021.
14. The Lloyd Sherman Scholars program, Center for Excellence in Youth Education (CEYE), New York, USA, 2021.

15. TCI Big Data Cancer Retreat, Icahn School of Medicine at Mount Sinai, New York, USA, 2021.
16. Sage Bionetwork, Seattle, Washington, USA, 2021.
17. National Taiwan University Hospital (NTUH), Taipei, Taiwan, 2021.
18. National Central University, Taiwan, Taoyuan, Taiwan, 2021.
19. National Health Research Institutes (NHRI), Miaoli, Taiwan, 2021.
20. The European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases, Ghent, Belgium (virtual), 2020. [Keynote]
21. NGS Teleconference, Kaohsiung Medical University, Kaohsiung, Taiwan (virtual), 2020. [Keynote]
22. Charleston Conference on Alzheimer's Disease (CCAD)[Competition Finalist], South Carolina, USA, 2020.
23. Academia Sinica, Institute of Statistical Science, Taipei, Taiwan, 2020.
24. National Yang-Ming University, Institute of Biomedical Informatics, Taipei, Taiwan, 2020.
25. National Tsing Hua University, Institute of Biomedical Engineering, Hsinchu, Taiwan, 2020.
26. National Yang-Ming University, School of Dentistry, Taipei, Taiwan, 2020.
27. Icahn School of Medicine at Mount Sinai, Department of Genetics and Genomic Sciences, New York, USA, 2019.
28. Wesleyan University, Department of Molecular Biology and Biochemistry, Middletown, USA, 2019.
29. Icahn School of Medicine at Mount Sinai, Center for Transformative Disease Modeling, New York, USA, 2018.
30. The Scripps Research Institute, Skaggs Institute for Molecular Biology, San Diego, USA, 2018.
31. UT Southwestern, Department of Bioinformatics, Dallas, USA, 2018.
32. Oregon Health and Science University, The Knight Cancer Institute, Portland, USA, 2018.
33. UCLA Institute for Quantitative and Computational Biosciences, Los Angeles, USA, 2018.
34. Novartis Institutes for Biomedical Research, Cambridge, USA, 2018.
35. Calico Life Sciences, South San Francisco, USA, 2017.
36. 23andMe, Mountain View, USA, 2017.
37. NCI CPTAC Steering Committee Meeting, Bethesda, USA, 2017.
38. Academia Sinica, IBMS Seminar, Taipei, Taiwan, 2017.
39. TCGA PanCanAtlas Face-to-face Meeting, Houston, USA, 2016.
40. Alzheimer's Association International Conference (AAIC), Toronto, Canada, 2016.
41. American Association for Cancer Research Annual Meeting (AACR), NCI Cloud Pilot Section, New Orleans, USA, 2016.
42. NCI CPTAC Meeting, Bethesda, USA, 2015.

# MEDIA RESOURCE / EDUCATIONAL MATERIALS

Through my non-profit Open Box Science, we have made 200+ interactive webinars openly available. These are mainly comprised of research talks by diverse, early-career researchers presenting their first-author publications. As of 2023/03, the OBS YouTube channel has accumulated 38.5k views with over 3.7k watch times from audience across 70+ countries.
https://www.youtube.com/openboxscience

# VOLUNTARY PRESENTATIONS

Not applicable