ALEXANDER CHIH-CHIEH CHANG

Curriculum Vitae | Medical Scientist Training Program (MD/PhD) Student
University of Pittsburgh School of Medicine | Women's Cancer Research Center, Hillman Cancer Center
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RESEARCH INTERESTS

Cancer metastasis and dormancy; breast cancer biology; tumor–microenvironment interactions; spatial transcriptomics; computational biology; translational oncology.

EDUCATION

University of Pittsburgh School of Medicine, Pittsburgh, PA **2021–2029**
Medical Scientist Training Program (M.D./Ph.D.); Ph.D. training in Computational Biology in the Joint Pitt-CMU program – PhD expected in May 2027.

Johns Hopkins University, Baltimore, MD **2016–2020**
B.S., Chemical and Biomolecular Engineering with Honors; second major in Sociology

RESEARCH AND PROFESSIONAL EXPERIENCE

Women's Cancer Research Center, Hillman Cancer Center, University of Pittsburgh **2023–Present**
Ph.D. Student — Mentors: Adrian V. Lee, Ph.D., and Steffi Oesterreich, Ph.D.

- Studies site-specific metastatic breast cancer biology, cancer dormancy, tumor–microenvironment interactions, and spatial multi-omic methods.
- Graduate student coordinator for the Hope for OTHERS rapid autopsy program; leads in on-call autopsy coordination, tissue-processing workflows, clinical-record review, and computational analyses of metastatic disease.
- Developed CITEgeist, a framework for deconvolution of spatial transcriptomics using same-slide proteomics.

University of Pittsburgh School of Medicine, Pittsburgh, PA **2021–Present**
Medical Scientist Training Program Student

University of California, San Francisco, Department of Neurosurgery, San Francisco, CA **2020–2021**
Lab Manager — Manish K. Aghi, M.D., Ph.D.

- Investigated breast cancer brain metastasis and tumor-microenvironment biology, including c-Met/β1-integrin signaling and computational classification of cancer-associated fibroblasts.

Johns Hopkins University, Department of Cell Biology, Baltimore, MD **2017–2020**
Undergraduate Research Assistant — Rong Li, Ph.D.

- Studied mitochondrial proteostasis using imaging, biochemical, proteomic, and genetic-screening approaches.

FELLOWSHIPS, AWARDS, AND HONORS

NIH/NCI F30 Fellowship Award (F30CA294839)	2025
Team Captain, First Place Winner, 3rd Coast Augmented Intelligence for Health Bowl — Grand Prize, $35,000	2023
LEAD Scholar, American Medical Informatics Association	2023
Outstanding Oral Presentation, APSA Northeast Regional Conference, American Physician-Scientists Association	2022
B.S. in Chemical & Biomolecular Engineering with Honors, Johns Hopkins University	2020
Bloomberg Distinguished Professor STAR Research Award, Johns Hopkins University	2019
Inductee, Tau Beta Pi Engineering Honor Society	2019
Bloomberg Distinguished Professor STAR Research Award, Johns Hopkins University	2018
Inductee, Alpha Epsilon Delta Pre-Health Honor Society	2018
Dean's List, Johns Hopkins University	2016–2020

LEADERSHIP AND SERVICE

MSTP Student Interviewer, University of Pittsburgh School of Medicine	2022–Present
Vice President of Finance, School of Medicine Student Executive Council, University of Pittsburgh	2021–2023
MSTP Alumni Committee Chair, University of Pittsburgh School of Medicine	2021–2023

PEER-REVIEWED PUBLICATIONS — COMPLETE LIST

1. Hu M, Weldy A, Lovalvo IM, Akins EA, Jain S, **Chang A**, et al. Druggable genome CRISPRi screen in hydrogels reveals regulators of cortactin-driven actin remodeling promoting glioblastoma invasion. *JCI Insight*. 2026;11(15). doi:10.1172/jci.insight.196484.
2. Carleton N, **Chang AC**, Chen F, et al. Use of ctDNA in Older Women with ER+ Breast Cancer to Facilitate Surgical De-escalation: A Prospective, Hybrid-Decentralized Trial with Correlative Studies. *Clinical Cancer Research*. 2026;32(14):2957–2967. doi:10.1158/1078-0432.CCR-25-4079.
3. Zels G*, Van Baelen K*, **Chang AC***, et al. Clinical and histopathological characterization of metastatic lobular breast cancer: lessons learned from post-mortem tissue donation programs. *npj Breast Cancer*. 2026;12(1):48. doi:10.1038/s41523-026-00912-5. **Co-first authors*.
4. **Chang ACC**, Hale E, Foldi J. Abemaciclib-Associated Psychosis: A Case Report of a Rare Neuropsychiatric Adverse Effect during Breast Cancer Treatment. *Case Reports in Oncology*. 2026;19(1):1231–1238. doi:10.1159/000553560.
5. Rajendran S, **Chih-Chieh Chang A**, Gao V, et al. Prescribing patterns and real-world clinical usage of adjuvant abemaciclib for early-stage, high-risk, hormone receptor-positive breast cancer. *JCO Oncology Advances*. 2026;3(1). doi:10.1200/OA-25-00076.
6. **Chang AC**, Balic M, Bartholow T, et al. Hope for OTHERS (Our Tissue Helping Enhance Research & Science): research results from the University of Pittsburgh rapid autopsy program for breast cancer. *Breast Cancer Research*. 2025;27(1):111. doi:10.1186/s13058-025-02014-9.
7. Wang Y, Ruan L, Zhu J, Zhang X, **Chang AC**, Tomaszewski A, Li R. Metabolic regulation of misfolded protein import into mitochondria. *eLife*. 2024;12. doi:10.7554/eLife.87518.
8. Jain S, Rick JW, Joshi RS, Beniwal A, Spatz J, Gill S, **Chang AC**, et al. Single-cell RNA sequencing and spatial transcriptomics reveal cancer-associated fibroblasts in glioblastoma with protumoral effects. *Journal of Clinical Investigation*. 2023;133(5). doi:10.1172/JCI147087.
9. Lau D, Wadhwa H, Sudhir S, **Chang AC**, et al. Role of c-Met/β1 integrin complex in the metastatic cascade in breast cancer. *JCI Insight*. 2021;6(12). doi:10.1172/jci.insight.138928. *Co-first author.*
10. Ruan L, McNamara JT, Zhang X, **Chang AC**, Zhu J, Dong Y, Sun G, Peterson A, Na CH, Li R. Solid-phase inclusion as a mechanism for regulating unfolded proteins in the mitochondrial matrix. *Science Advances*. 2020;6(32):eabc7288. doi:10.1126/sciadv.abc7288.
11. Feliciano J, **Chang A**, Venkatraman D, Brooks S, Zagaja C, Ettinger D, Hann C, Naidoo J, Voong R, Hales R, Turner M, Peterson V, Bodurtha J. Lung cancer and family-centered concerns. *Supportive Care in Cancer*. 2020;28(2):497–505. doi:10.1007/s00520-019-04839-5.

PREPRINTS

1. Onkar S, Liu D, Seachrist D, Zou J, Merkel C, Thale I, **Chang A**, et al. Novel transplantable mouse cell line model recapitulates invasive lobular breast carcinoma (ILC) phenotype and immune microenvironment. *Preprint*. 2026 Jul. doi:10.64898/2026.07.30.741815.
2. **Chang A**, Schlegel B, Carleton N, McAuliffe P, Waltermire H, Oesterreich S, Schwartz R, Lee A. CITEgeist: Accurate deconvolution of spatial transcriptomics with same-slide proteomics reveals midkine as a secreted microenvironment modulator in ESR1 mutant breast cancer. *bioRxiv*. 2025 Feb 17. doi:10.1101/2025.02.15.638331.

SELECTED SCIENTIFIC PRESENTATIONS

"TUSV-clinical: Applying evolutionary trees to patients – lessons from SSACB." National Cancer Institute Summer School of Algorithmic Cancer Biology (SSACB).	Aug 2026
"CITEgeist: Accurate deconvolution of spatial transcriptomics with same-slide proteomics." National Cancer Institute Summer School of Algorithmic Cancer Biology (SSACB).	Aug 2025
"Creating a Unified System of Structural Variations in Cancer Genomic Evolution." Lightning talk, National Cancer Institute Spring School of Algorithmic Cancer Biology (SSACB).	Apr 2024
Outstanding Oral Presentation, APSA Northeast Regional Conference, American Physician-Scientists Association.	Jan 2022