

Stanford



Bing Melody Zhang

Clinical Assistant Professor, Pathology

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ACADEMIC CONTACT INFORMATION

- **Administrative Contact**

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Bio

BIO

Dr. Bing Melody Zhang is board-certified by American Board of Pathology in Clinical Pathology and Molecular Genetic Pathology. She is also a certified and fully credentialed HLA laboratory director by American Society for Histocompatibility & Immunogenetics (ASHI) for the following areas--Solid Organ Transplantation: Deceased Donor; Solid Organ Transplantation: Live Donor; HSC/BM Transplantation: Related Donor; HSC/BM Transplantation: Unrelated Donor; Histocompatibility Testing for Other Clinical Purposes; Transfusion Support. Dr. Zhang completed Clinical Pathology residency, Molecular Genetic Pathology as well as Clinical Genomics fellowships, and Histocompatibility/Immunogenetics training at Stanford. She is an attending pathologist at the molecular pathology service and the assistant director of the HLA lab. Her main research interests include genetic/genomic testing for malignant and non-malignant hematologic disorders, NGS-based TCR/Ig clonality/MRD diagnostic testing, molecular testing for BMT/solid organ transplantation, and HLA-related disease association and pharmacogenetic testing.

CLINICAL FOCUS

- Molecular Genetic Pathology
- Histocompatibility and Immunogenetics
- Clinical Pathology
- Pathology

ACADEMIC APPOINTMENTS

- Clinical Assistant Professor, Pathology
- Member, Maternal & Child Health Research Institute (MCHRI)

ADMINISTRATIVE APPOINTMENTS

- Co-Director of Histocompatibility and Immunogenetics Laboratory, Stanford Blood Center, (2022- present)
- Associate Performance Improvement Leader for Clinical Pathology & HLA, Stanford Health Care -- Pathology, (2018- present)
- Attending molecular pathologist, Stanford Health Care and Stanford Children's Health, (2017- present)
- Assistant Director of Histocompatibility and Immunogenetics Laboratory, Stanford Blood Center, (2017-2022)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, American Society for Histocompatibility and Immunogenetics Science and Technology Initiatives Committee (2021 - present)
- Member, American Society for Histocompatibility and Immunogenetics CPT code subcommittee (2020 - present)
- Member, CAP/ACMG Biochemical and Molecular Genetics Committee (2020 - present)
- Member, ClinGen--Platelet Disorders Variant Curation Expert Panel (2018 - present)
- Junior member on the Biochemical and Molecular Genetics Committee, College of American Pathologists (2016 - 2017)

PROFESSIONAL EDUCATION

- ASHI Certified HLA Lab Director, American Society for Histocompatibility and Immunogenetics , HLA
- Board Certification, American Board of Pathology , Clinical Pathology (2017)
- Board Certification, American Board of Pathology and American Board of Medical Genetics and Genomics , Molecular Genetic Pathology (2017)
- Residency, Stanford University Department of Pathology , Clinical Pathology (2017)
- Fellowship, Stanford University Department of Pathology , Clinical Genomics (2017)
- Fellowship, Stanford University Department of Pathology , Molecular Genetic Pathology (2016)
- Medical education, Shandong University School of Medicine , Medicine
- MS, Shandong University School of Medicine , Medical Genetics

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

My main research interests lie in the following areas:

- 1) Using genetic/genomic approaches to study the genotype-phenotype correlation of inherited non-malignant hematologic disorders, especially platelet disorders.
- 2) Development and application of molecular assays for clinical testing to support hematopoietic stem cell transplantation and solid organ transplantation.
- 3) NGS-based TCR/Ig clonality/MRD diagnostic testing.
- 4) HLA-related disease association and pharmacogenetic testing.

Teaching

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Molecular and Genetic Medicine (Fellowship Program)

Publications

PUBLICATIONS

- **An Overview of Characteristics of Clinical Next-Generation Sequencing-Based Testing for Hematologic Malignancies.** *Archives of pathology & laboratory medicine*
Zhang, B. M., Keegan, A. n., Li, P. n., Lindeman, N. I., Nagarajan, R. n., Routbort, M. J., Vasalos, P. n., Kim, A. S., Merker, J. D.
2021

- **Validation of a Next-Generation Sequencing-based T-Cell Receptor Gamma Gene Rearrangement Diagnostic Assay: Transitioning from Capillary Electrophoresis to Next-Generation Sequencing.** *The Journal of molecular diagnostics : JMD*
Ho, C. C., Tung, J. K., Zehnder, J. L., Zhang, B. M.
2021
- **Identification of a pathogenic TUBB1 variant in a Chinese family with congenital macrothrombocytopenia through whole genome sequencing.** *Platelets*
Hou, Y. n., Shao, L. n., Zhou, H. n., Liu, Y. n., Fisk, D. G., Spiteri, E. n., Zehnder, J. L., Peng, J. n., Zhang, B. M., Hou, M. n.
2021: 1–5
- **Specifications of the variant curation guidelines for ITGA2B/ITGB3: ClinGen Platelet Disorder Variant Curation Panel.** *Blood advances*
Ross, J. E., Zhang, B. M., Lee, K. n., Mohan, S. n., Branchford, B. R., Bray, P. n., Dugan, S. N., Freson, K. n., Heller, P. G., Kahr, W. H., Lambert, M. P., Luchtman-Jones, L. n., Luo, et al
2021; 5 (2): 414–31
- **HLA-haplotype loss after TCRalpha/CD19-depleted haploidentical HSCT.** *Bone marrow transplantation*
Shyr, D. C., Zhang, B. M., Saini, G., Madani, N. D., Schultz, L. M., Patel, S., Kristovich, K., Fernandez-Vina, M., Bertaina, A.
2020
- **IDH2 Mutation in a Patient with Metastatic Colon Cancer** *NEW ENGLAND JOURNAL OF MEDICINE*
Zhang, B. M., Zehnder, J. L., Suarez, C. J.
2017; 376 (20): 1991-1992
- **A novel splice donor mutation in the thrombopoietin gene leads to exon 2 skipping in a Filipino family with hereditary thrombocythemia.** *Blood*
Zhang, B., Ng, D., Jones, C., Oh, S. T., Nolan, G. P., Salehi, S., Wong, W., Zehnder, J. L., Gotlib, J.
2011; 118 (26): 6988-6990
- **The role of vanin-1 and oxidative stress-related pathways in distinguishing acute and chronic pediatric ITP** *BLOOD*
Zhang, B., Lo, C., Shen, L., Sood, R., Jones, C., Cusmano-Ozog, K., Park-Snyder, S., Wong, W., Jeng, M., Cowan, T., Engleman, E. G., Zehnder, J. L.
2011; 117 (17): 4569-4579
- **Longitudinal study of 2 patients with cyclic thrombocytopenia, STAT3, and MPL mutations.** *Blood advances*
Zhang, H., Chien, M., Hou, Y., Shomali, W., Brar, R., Ho, C., Han, P., Xu, D., Zhang, B. M., Guo, X., Tolentino, L., Wu, N. C., Tsai, et al
2022
- **Complement-Binding Donor-Specific Anti-HLA Antibodies: Biomarker for Immunologic Risk Stratification in Pediatric Kidney Transplantation Recipients** *Transpl Int*,
Sigurjonsdottir, V. K.
2022; 35
- **Next generation sequencing confirms T-cell clonality in a subset of pediatric pityriasis lichenoides.** *Journal of cutaneous pathology*
Raghavan, S. S., Wang, J. Y., Gru, A. A., Marqueling, A. L., Teng, J. M., Brown, R. A., Novoa, R. A., Kim, Y., Zehnder, J., Zhang, B. M., Rieger, K. E.
2021
- **The Role of Donor KIR Genotyping in Pediatric Hematopoietic Stem Cell Transplantation For Non-Malignant Disorders**
Mariano, L., Bertaina, A., Zhang, B. M., Kristovich, K., Vina, M.
SPRINGERNATURE.2020: 640
- **Chimerism Monitoring with Highly Sensitive and Precise Next-Generation Sequencing Assay in Patients Post-Allogeneic Hematopoietic Stem Cell Transplantation**
Sharma, D., Egidio, C., Grskovic, M., Vina, M., Zhang, B. M.
ELSEVIER SCIENCE INC.2020: S310
- **Next Generation Sequencing-Based Characterization of T Cell Receptor Repertoire of Patients with Immune Thrombocytopenia**
Han, P., You, X., Lo, C., Xu, L., Zhang, H., Zehnder, J. L., Zhang, B.
AMER SOC HEMATOLOGY.2019
- **Non-HLA Antibody-Mediated Rejection of Lung Transplant Masquerading Transfusion-Related Acute Lung Injury**
Yunce, M., Virk, M., Zhang, B. M., Mooney, K., Saleem, A., Shan, H.
WILEY.2019: 199A

- **Detection of Circulating Tumor DNA with a Single-Molecule Sequencing Analysis Validated for Targeted and Immunotherapy Selection.** *Molecular diagnosis & therapy*
Atkins, A., Gupta, P., Zhang, B. M., Tsai, W., Lucas, J., Javey, M., Vora, A., Mei, R.
2019
- **Case series of MET exon 14 skipping mutation-positive non-small-cell lung cancers with response to crizotinib and cabozantinib** *ANTI-CANCER DRUGS*
Wang, S. Y., Zhang, B. M., Wakelee, H. A., Koontz, M. Z., Pan, M., Diehn, M., Kunder, C. A., Neal, J. W.
2019; 30 (5): 537–41
- **De novo complement-activating donor-specific antibodies in pediatric renal transplant recipients are highly responsive to therapy**
Sigurjonsdottir, V., Zhang, B. M., Vina, M., Chaudhuri, A., Concepcion, W., Gallo, A., Grimm, P.
WILEY.2019
- **Chimerism Analysis in Pediatric Hematopoietic Stem Cell Transplantation for Non-Malignant Disorders**
Mariano, L., Zhang, B., Kristovich, K., Agarwal-Hashmi, R., Roncarolo, M., Bertaina, A., Fernandez-Vina, M.
ELSEVIER SCIENCE INC.2019
- **Case series of MET exon 14 skipping mutation-positive non-small-cell lung cancers with response to crizotinib and cabozantinib.** *Anti-cancer drugs*
Wang, S. X., Zhang, B. M., Wakelee, H. A., Koontz, M. Z., Pan, M., Diehn, M., Kunder, C. A., Neal, J. W.
2019
- **Blood transcriptome and clonal T cell correlates of response and nonresponse to eltrombopag therapy in a cohort of patients with chronic immune thrombocytopenia.** *Haematologica*
Zhang, H. n., Zhang, B. M., Guo, X. n., Xu, L. n., You, X. n., West, R. B., Bussel, J. B., Zehnder, J. L.
2019
- **Molecular Diagnosis in Hematology** *Wintrobe's Clinical Hematology*
Zhang, B. M., Zehnder, J. L.
2019; 14e: 56–66
- **Assessment by Extended-Coverage Next-Generation Sequencing Typing of DPA1 and DPB1 Mismatches in Siblings Matching at HLA-A, -B, -C, -DRB1, and -DQ Loci.** *Biology of blood and marrow transplantation : journal of the American Society for Blood and Marrow Transplantation*
Mariano, L. n., Zhang, B. M., Osoegawa, K. n., Lowsky, R. n., Fernandez-Vina, M. n.
2019
- **Case Series of MET Exon 14 Skipping Mutation-positive Non-Small Cell Lung Cancers and Response to Crizotinib.** *International journal of radiation oncology, biology, physics*
Wang, S. X., Zhang, B., Wakelee, H. A., Diehn, M., Kunder, C., Neal, J. W.
2017; 98 (1): 239-?
- **Methodologic Considerations in the Application of Next-Generation Sequencing of Human TRB Repertoires for Clinical Use** *JOURNAL OF MOLECULAR DIAGNOSTICS*
Xu, L., You, X., Zheng, P., Zhang, B. M., Gupta, P. K., Lavori, P., Meyer, E., Zehnder, J. L.
2017; 19 (1): 72-83
- **Identification of a Novel MPL Loss of Function Mutation in a Patient with Cyclic Thrombocytopenia and Characterization of This Syndrome**
Zhang, H., Hou, Y., Brar, R. S., Zhang, B., Chen, Z., Abidi, P., Jin, J., Gotlib, J. R., Zehnder, J. L.
AMER SOC HEMATOLOGY.2016
- **PS01.67: Case Series of MET Exon 14 Skipping Mutation-Positive Non-Small Cell Lung Cancers and Response to Crizotinib: Topic: Medical Oncology.** *Journal of thoracic oncology*
Wang, S. X., Zhang, B. M., Wakelee, H., Diehn, M., Kunder, C. A., Neal, J. W.
2016; 11 (11S): S312-S313
- **ROS: novel regulators of thrombopoiesis** *BLOOD*
Zhang, B., Zehnder, J. L.
2016; 128 (5): 613-?
- **Effects of Thrombopoietin Mimetics on Patients with Chronic ITP: Perspectives from Blood Transcriptome Profiling Analysis**
Zhang, H., Zhang, B., Guo, X., Haq, N., West, R. B., Bussel, J. B., Zehnder, J. L.

AMER SOC HEMATOLOGY.2014

- **Immunoglobulin and T cell receptor gene high-throughput sequencing quantifies minimal residual disease in acute lymphoblastic leukemia and predicts post-transplantation relapse and survival.** *Biology of blood and marrow transplantation*
Logan, A. C., Vashi, N., Faham, M., Carlton, V., Kong, K., Buño, I., Zheng, J., Moorhead, M., Klinger, M., Zhang, B., Waqar, A., Zehnder, J. L., Miklos, et al
2014; 20 (9): 1307-1313
- **Comprehensive whole-genome sequencing of an early-stage primary myelofibrosis patient defines low mutational burden and non-recurrent candidate genes.** *Haematologica*
Merker, J. D., Roskin, K. M., Ng, D., Pan, C., Fisk, D. G., King, J. J., Hoh, R., Stadler, M., Okumoto, L. M., Abidi, P., Hewitt, R., Jones, C. D., Gojenola, et al
2013; 98 (11): 1689-1696
- **Minimal residual disease quantification using consensus primers and high-throughput IGH sequencing predicts post-transplant relapse in chronic lymphocytic leukemia** *LEUKEMIA*
Logan, A. C., Zhang, B., Narasimhan, B., Carlton, V., Zheng, J., Moorhead, M., Krampf, M. R., Jones, C. D., Waqar, A. N., Faham, M., Zehnder, J. L., Miklos, D. B.
2013; 27 (8): 1659-1665
- **Oxidative stress and immune thrombocytopenia.** *Seminars in hematology*
Zhang, B., Zehnder, J. L.
2013; 50 (3): e1-4
- **Desktop transcriptome sequencing from archival tissue to identify clinically relevant translocations.** *American journal of surgical pathology*
Sweeney, R. T., Zhang, B., Zhu, S. X., Varma, S., Smith, K. S., Montgomery, S. B., van de Rijn, M., Zehnder, J., West, R. B.
2013; 37 (6): 796-803
- **Sequential azacitidine plus lenalidomide combination for elderly patients with untreated acute myeloid leukemia.** *Haematologica*
Pollyea, D. A., Zehnder, J., Coutre, S., Gotlib, J. R., Gallegos, L., Abdel-Wahab, O., Greenberg, P., Zhang, B., Liedtke, M., Berube, C., Levine, R., Mitchell, B. S., Medeiros, et al
2013; 98 (4): 591-596
- **2-Hydroxyglutarate in IDH mutant acute myeloid leukemia: predicting patient responses, minimal residual disease and correlations with methylcytosine and hydroxymethylcytosine levels** *LEUKEMIA & LYMPHOMA*
Pollyea, D. A., Kohrt, H. E., Zhang, B., Zehnder, J., Schenkein, D., Fantin, V., Straley, K., Vasanthakumar, A., Abdel-Wahab, O., Levine, R., Godley, L. A., Medeiros, B. C.
2013; 54 (2): 408-410
- **Impaired B Cell Clonotype Diversification After Allogeneic Hematopoietic Cell Transplantation Predicts Graft-Versus-Host Disease** *BMT Tandem Meetings*
Logan, A., Sahaf, B., Zhang, B., Arai, S., Carlton, V., Zheng, J., Moorhead, M., Krampf, M. R., Jones, C. D., Waqar, A. N., Faham, M., Shizuru, J. A., Zehnder, et al
ELSEVIER SCIENCE INC.2013: S148-S149
- **Whole Genome Sequence Analysis of Primary Myelofibrosis.** *54th Annual Meeting and Exposition of the American-Society-of-Hematology (ASH)*
Merker, J. D., Roskin, K., Ng, D., Pan, C., Fisk, D. G., Jones, C. D., Gojenola, L., Clark, M. J., Zhang, B., Cherry, M., Snyder, M., Boyd, S. D., Zehnder, et al
AMER SOC HEMATOLOGY.2012
- **The Role of Oxidative Stress in Pediatric Immune Thrombocytopenia**
Lo, C., Zhang, B., Cusmano-Ozog, K., Wong, W., Jeng, M., Cowan, T., Zehnder, J. L.
AMER SOC HEMATOLOGY.2012
- **Azacitidine Plus Lenalidomide for Untreated AML Patients Ineligible for Conventional Chemotherapy**
Pollyea, D. A., Zehnder, J. L., Coutre, S., Gotlib, J., Gallegos, L., Greenberg, P., Zhang, B., Liedtke, M., Levine, R. L., Medeiros, B. C.
AMER SOC HEMATOLOGY.2012
- **Safety, efficacy and biological predictors of response to sequential azacitidine and lenalidomide for elderly patients with acute myeloid leukemia** *LEUKEMIA*
Pollyea, D. A., Kohrt, H. E., Gallegos, L., Figueroa, M. E., Abdel-Wahab, O., Zhang, B., Bhattacharya, S., Zehnder, J., Liedtke, M., Gotlib, J. R., Coutre, S., Berube, C., Melnick, et al
2012; 26 (5): 893-901

- **Tailored temozolomide therapy according to MGMT methylation status for elderly patients with acute myeloid leukemia** *AMERICAN JOURNAL OF HEMATOLOGY*
Medeiros, B. C., Kohrt, H. E., Gotlib, J., Coutre, S. E., Zhang, B., Arber, D. A., Zehnder, J. L.
2012; 87 (1): 45-50
- **A novel splice donor mutation in the thrombopoietin gene leads to exon 2 skipping in a Filipino family with hereditary thrombocythemia** *BLOOD*
Ng, D., Jones, C., Oh, S. T., Nolan, G. P., Salehi, S., Wong, W., Zehnder, J. L., Gotlib, J.
2011; 118 (26): 6988-?
- **2-Hydroxyglutarate in IDH mutant AML: Predicting Patient Responses, Minimal Residual Disease and Correlations with Methylcytosine and Hydroxymethylcytosine Levels**
Pollyea, D. A., Kohrt, H. E., Zhang, B., Zehnder, J. L., Schenkein, D. P., Fantin, V., Straley, K., Vasanthakumar, A., Abdel-Wahab, O., Levine, R. L., Godley, L., Medeiros, B. C.
AMER SOC HEMATOLOGY.2011: 1073-74
- **Identification of a Novel Splice Donor Mutation In the Thrombopoietin Gene In a Philippine Family with Hereditary Thrombocythemia** *52nd Annual Meeting and Exposition of the American-Society-of-Hematology (ASH)*
Gotlib, J., Zhang, B., Jones, C. D., Riess, J., Wong, W. B., Simonds, E. F., Hale, M. B., Abidi, P., McClung, J., Nolan, G. P., Oh, S. T., Zehnder, J. L.
AMER SOC HEMATOLOGY.2010: 1272-72
- **Identification of Novel LNK Mutations In Patients with Chronic Myeloproliferative Neoplasms and Related Disorders** *52nd Annual Meeting and Exposition of the American-Society-of-Hematology (ASH)*
Oh, S. T., Zahn, J. M., Jones, C. D., Zhang, B., Loh, M. L., Kantarjian, H., Simonds, E. F., Bruggner, R. V., Abidi, P., Natsoulis, G., Bell, J., Buenrostro, J., Nolan, et al
AMER SOC HEMATOLOGY.2010: 143-44
- **Combined Use of PCR-Based TCRG and TCRB Clonality Tests on Paraffin-Embedded Skin Tissue in the Differential Diagnosis of Mycosis Fungoides and Inflammatory Dermatoses** *JOURNAL OF MOLECULAR DIAGNOSTICS*
Zhang, B., Beck, A. H., Taube, J. M., Kohler, S., Seo, K., Zwerner, J., Viakhireva, N., Sundram, U., Kim, Y. H., Schrijver, I., Arber, D. A., Zehnder, J. L.
2010; 12 (3): 320-327
- **Increased VNN1/PPARG Gene Expression Ratio Is Correlated with Developing Chronic ITP and Oxidative Stress Exposure to PBMC in Vitro** *51st Annual Meeting and Exposition of the American-Society-of-Hematology*
Zhang, B., Shen, L., Jeng, M., Jones, C., Wong, W., Engleman, E. E., Zehnder, J. L.
AMER SOC HEMATOLOGY.2009: 368-68
- **Elevated Vanin 1 and Advillin Expression Is Associated with Progression to Chronic ITP in Children** *50th Annual Meeting of the American-Society-of-Hematology/ASH/ASCO Joint Symposium*
Zhang, B., Sood, R., Jones, C., Wong, W., Jeng, M., Zehnder, J. L.
AMER SOC HEMATOLOGY.2008: 152-53
- **Large granular lymphocyte leukemia: Clonality reconsidered.**
Witteles, W., Zhang, B., Schrijver, I., Arber, D., Gotlib, J., Zehnder, J.
AMER SOC HEMATOLOGY.2007: 912A
- **T-cell clonality analysis in biopsy specimens from two different skin sites shows high specificity in the diagnosis of patients with suggested mycosis fungoides** *J Am Acad Dermatol.*
Thurber, S. E., Zhang, B., Kim, Y. H., Schrijver, I., Zehnder, J. L., Kohler, S.
2007; 57 (5)