



Asiri Ediriwickrema MD, PhD

Assistant Professor of Medicine (Hematology)

CLINICAL OFFICE (PRIMARY)

- **Hematology Clinic**

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Bio

BIO

Asiri Ediriwickrema, MD, PhD, is a physician-scientist who leads a systems hematology laboratory at Stanford and directs a clinical practice focused on myelodysplastic neoplasms and clonal hematopoiesis. Our research group studies hematopoiesis—the complex process by which hematopoietic stem cells generate the diverse blood cells essential for health throughout life. Our mission is to understand how individual blood cells change during aging and cancer development, with particular focus on how dysregulation of this process leads to cytopenias and hematologic malignancies.

We integrate expertise spanning clinical medicine, functional hematology, molecular and cellular biology, genomics, bioinformatics, and machine learning. By combining advanced experimental techniques with computational approaches, we examine blood cell development and function at single-cell resolution. Our work aims to identify the earliest cellular changes in cancer development, map how stem cells interact within their tissue environments, and develop AI-powered tools that predict stem cell behavior and disease progression. Our goal is to translate these efforts into improved diagnostics and precision therapeutic strategies for patients with blood disorders and malignancies.

Dr. Ediriwickrema earned his undergraduate degree in Engineering from the Massachusetts Institute of Technology, his MD (Cum Laude) from Yale University, and his PhD from Stanford University. He completed his residency in Internal Medicine and fellowship in Hematology at Stanford, where he also conducted his doctoral and postdoctoral research in the laboratory of Dr. Ravi Majeti. His research identified novel populations of multipotent progenitor cells in normal hematopoiesis and leukemia stem cells in acute myeloid leukemia (AML).

CLINICAL FOCUS

- Hematology
- Myelodysplastic Syndromes
- Clonal Hematopoiesis

ACADEMIC APPOINTMENTS

- Assistant Professor - University Medical Line, Medicine

- Member, Bio-X
- Member, Institute for Stem Cell Biology and Regenerative Medicine
- Member, Stanford Cancer Institute

PROFESSIONAL EDUCATION

- Doctor of Philosophy, Stanford University , Cancer Biology (2024)
- Board Certification: Hematology, American Board of Internal Medicine (2021)
- Fellowship: Stanford University Hematology and Oncology Fellowship (2020) CA
- Board Certification: Internal Medicine, American Board of Internal Medicine (2017)
- Residency: Stanford University Internal Medicine Residency (2017) CA
- Medical Education: Yale University School of Medicine (2014) CT
- Master of Health Science, Yale University School of Medicine (2014)
- Bachelor of Science, Massachusetts Institute of Technology , Engineering (2008)

LINKS

- Lab Website: <https://systemshematology.org>

Teaching

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Hematology (Fellowship Program)

Publications

PUBLICATIONS

- **A single-cell framework identifies functionally and molecularly distinct multipotent progenitors in adult human hematopoiesis.** *Cell reports*
Ediriwickrema, A., Nakauchi, Y., Fan, A. C., Köhnke, T., Hu, X., Luca, B. A., Kim, Y., Ramakrishnan, S., Nakamoto, M., Karigane, D., Linde, M. H., Azizi, A., Newman, et al
2025; 44 (9): 116236
- **Single cell genomics in AML: extending the frontiers of AML research.** *Blood*
Ediriwickrema, A., Gentles, A. J., Majeti, R.
2022
- **Single-cell mutational profiling enhances the clinical evaluation of AML MRD.** *Blood advances*
Ediriwickrema, A. n., Aleshin, A. n., Reiter, J. G., Corces, M. R., Köhnke, T. n., Stafford, M. n., Liedtke, M. n., Medeiros, B. C., Majeti, R. n.
2020; 4 (5): 943–52
- **A sunblock based on bioadhesive nanoparticles** *NATURE MATERIALS*
Deng, Y., Ediriwickrema, A., Yang, F., Lewis, J., Girardi, M., Saltzman, W. M.
2015; 14 (12): 1278-1285
- **Nanotherapy for Cancer: Targeting and Multifunctionality in the Future of Cancer Therapies** *ACS BIOMATERIALS SCIENCE & ENGINEERING*
Ediriwickrema, A., Saltzman, W. M.
2015; 1 (2): 64-78
- **Multi-layered nanoparticles for combination gene and drug delivery to tumors** *BIOMATERIALS*
Ediriwickrema, A., Zhou, J., Deng, Y., Saltzman, W. M.
2014; 35 (34): 9343-9354

- **Sensitive detection of novel structural variants and 3D chromosome conformation reveals likely novel drivers including enhancer hijacking in AML**
Koehnke, T., Ediriwickrema, A., Bhakta, M., Fortuna, A., Tiwari, C., Sanborn, Z., Zhang, T., Munding, L., Majeti, R.
ELSEVIER.2025: 5257-5258
- **Tagraxofusp and low-intensity chemotherapy for the treatment of CD123-positive relapsed or refractory Acute Myeloid Leukemia**
Cho, W., Dutta, R., Cobarrubias, K., Inlow, E., Adre, N., Olson, N., Cunanan, K., Charu, V., Ediriwickrema, A., Zhang, T., Mannis, G.
ELSEVIER.2025: 8256
- **Intra-leukemic interferon signaling suppresses expansion and mediates chemoresistance in human AML.** *Blood cancer discovery*
Karigane, D., Fan, A. C., Nishimura, T., Kayamori, K., Nakauchi, Y., Köhnke, T., Rangavajhula, A., Ediriwickrema, A., Benard, B. A., Thomas, R., Zhao, F., Stafford, M., Suchy, et al
2025
- **Projecting individualized probabilities of lifetime all-cancer risk.** *medRxiv : the preprint server for health sciences*
Butala, N. M., Al-Hammadi, N., Ediriwickrema, A., Schneider, J. L., Fullerton, A., Balasubramanian, J., Choudhury, P. P., Chatterjee, N.
2025
- **Tagraxofusp and low-intensity chemotherapy for the treatment of CD123-positive relapsed or refractory acute myeloid leukemia.**
Cho, W., Dutta, R., de Santiago, V., Cobarrubias, K., Choi, J., Inlow, E., Shaw, B., Cunanan, K., Charu, V., Ediriwickrema, A., Zhang, T., Mannis, G. N.
LIPPINCOTT WILLIAMS & WILKINS.2025: TPS6582
- **IDENTIFICATION AND CHARACTERIZATION OF NEW MULTIPOTENT PROGENITORS IN ADULT HUMAN HEMATOPOIESIS**
Ediriwickrema, A., Nakauchi, Y., Fan, A., Kohnke, T., Hu, X., Luca, B., Kim, Y., Ramakrishnan, S., Nakamoto, M., Karigane, D., Linde, M., Azizi, A., Newman, et al
ELSEVIER SCIENCE INC.2024
- **IDENTIFICATION AND CHARACTERIZATION OF NEW MULTIPOTENT PROGENITORS IN ADULT HUMAN HEMATOPOIESIS**
Ediriwickrema, A., Nakauchi, Y., Fan, A., Kohnke, T., Hu, X., Luca, B., Kim, Y., Ramakrishnan, S., Nakamoto, M., Karigane, D., Linde, M., Azizi, A., Newman, et al
ELSEVIER SCIENCE INC.2024
- **Convergent epigenetic evolution drives relapse in acute myeloid leukemia.** *eLife*
Nuno, K., Azizi, A., Koehnke, T., Lareau, C., Ediriwickrema, A., Corces, M. R., Satpathy, A. T., Majeti, R.
2024; 13
- **CD38 and BCL2 expression guides treatment with daratumumab and venetoclax in tagraxofusp-refractory blastic plasmacytoid dendritic cell neoplasm (BPDCN) featuring dynamic loss of CD123.** *Leukemia research*
Hu, X., Ediriwickrema, A., Saleem, A., Tan, B., Pemmaraju, N., Mannis, G. N.
2024; 139: 107479
- **Mutation order in acute myeloid leukemia identifies uncommon patterns of evolution and illuminates phenotypic heterogeneity.** *Leukemia*
Schwede, M., Jahn, K., Kuipers, J., Miles, L. A., Bowman, R. L., Robinson, T., Furudate, K., Uryu, H., Tanaka, T., Sasaki, Y., Ediriwickrema, A., Benard, B., Gentles, et al
2024
- **Simplified Intrafemoral Injections Using Live Mice Allow for Continuous Bone Marrow Analysis.** *Journal of visualized experiments : JoVE*
Nakauchi, Y., Ediriwickrema, A., Martinez-Krams, D., Zhao, F., Rangavajhula, A., Karigane, D., Majeti, R.
2023
- **Simplified Intrafemoral Injections Using Live Mice Allow for Continuous Bone Marrow Analysis** *Journal of Visualized Experiments*
Nakauchi, Y., Ediriwickrema, A., Martinez-Krams, D., Zhao, F., Rangavajhula, A., Karigane, D., Majeti, R.
2023
- **Mutation order in acute myeloid leukemia identifies uncommon patterns of evolution and illuminates phenotypic heterogeneity.** *Research square*
Schwede, M., Jahn, K., Kuipers, J., Miles, L. A., Bowman, R. L., Robinson, T., Furudate, K., Uryu, H., Tanaka, T., Sasaki, Y., Ediriwickrema, A., Benard, B., Gentles, et al
2023

- **Intra-Leukemic IFN. Signaling Mediates Cell Cycle Suppression and Chemoresistance in AML**
Karigane, D., Fan, A. C., Kayamori, K., Nakauchi, Y., Koehnke, T., Rangavajhula, A. S., Ediriwickrema, A., Majeti, R.
AMER SOC HEMATOLOGY.2023
- **Clonal Dynamics and Deterministic Clinical Fate Mapping of Patients with Myelodysplastic Neoplasms and Acute Myeloid Leukemia with TP53 Disruption**
Patel, S., Tanenbaum, B., Ediriwickrema, A., Cerny, J., Hutchinson, L., Meng, X., Gerber, W. K., Khedr, S., Selove, W., Woda, B., Gerber, J. M.
AMER SOC HEMATOLOGY.2023
- **Prognostic heterogeneity and clonal dynamics within distinct subgroups of myelodysplastic syndrome and acute myeloid leukemia with TP53 disruptions.** *EJHaem*
Patel, S. A., Cerny, J., Gerber, W. K., Ramanathan, M., Ediriwickrema, A., Tanenbaum, B., Hutchinson, L., Meng, X., Flahive, J., Barton, B., Gillis-Smith, A. J., Suzuki, S., Khedr, et al
2023; 4 (4): 1059-1070
- **Peripheral blood DNA methylation profiles predict future development of B-cell Non-Hodgkin Lymphoma.** *NPJ precision oncology*
Espin-Perez, A., Brennan, K., Ediriwickrema, A. S., Gevaert, O., Lossos, I. S., Gentles, A. J.
2022; 6 (1): 53
- **The cell type specific 5hmC landscape and dynamics of healthy human hematopoiesis and TET2-mutant pre-leukemia.** *Blood cancer discovery*
Nakauchi, Y., Azizi, A., Thomas, D., Corces, M. R., Reinisch, A., Sharma, R., Cruz Hernandez, D., Kohnke, T., Karigane, D., Fan, A., Martinez-Krams, D., Stafford, M., Kaur, et al
2022
- **Modeling the Development of SRSF2 Mutated Myeloid Malignancies By CRISPR/Cas9 Mediated Genome Engineering of Primary Human Hematopoietic Stem and Progenitor Cells**
Pabst, G., Fosselteder, J., Schlacher, A., Auinger, L., Martinez-Krams, D., Ediriwickrema, A., Kashofer, K., Beham-Schmid, C., Greinix, H. T., Woelfler, A., Schlenke, P., Sill, H., Zebisch, et al
AMER SOC HEMATOLOGY.2021
- **Single Cell Analysis of Adult Human Hematopoietic Stem and Progenitor Cells Identifies a Novel Lymphoid Primed Multipotent Progenitor That Expands in Relapsed Acute Myeloid Leukemia**
Ediriwickrema, A., Luca, B. A., Newman, A. M., Gentles, A. J., Majeti, R.
AMER SOC HEMATOLOGY.2021
- **Chromatin Accessibility Analysis Reveals Epigenetic Evolution Is a Common Mechanism of Relapse in Acute Myeloid Leukemia**
Nuno, K. A., Azizi, A., Koehnke, T., Ediriwickrema, A., Corces, M., Majeti, R.
2021
- **Clinico-genomic profiling and clonal dynamic modeling of TP53-aberrant myelodysplastic syndrome and acute myeloid leukemia.** *Leukemia & lymphoma*
Patel, S. A., Lloyd, M. R., Cerny, J., Shi, Q., Simin, K., Ediriwickrema, A., Hutchinson, L., Miron, P. M., Higgins, A. W., Ramanathan, M., Gerber, J. M.
2021: 1-13
- **Successful treatment of thrombocytopenia with daratumumab after allogeneic transplant: a case report and literature review.** *Blood advances*
Migdady, Y., Ediriwickrema, A., Jackson, R. P., Kadi, W., Gupta, R., Socola, F., Arai, S., Martin, B. A.
2020; 4 (5): 815–18
- **Venetoclax and hypomethylating agent therapy in high risk myelodysplastic syndromes: a retrospective evaluation of a real-world experience.** *Leukemia & lymphoma*
Azizi, A. n., Ediriwickrema, A. n., Dutta, R. n., Patel, S. A., Shomali, W. n., Medeiros, B. n., Iberri, D. n., Gottlib, J. n., Mannis, G. n., Greenberg, P. n., Majeti, R. n., Zhang, T. n.
2020: 1–8
- **Multiomic single cell analysis of normal human bone marrow identifies a unique stem and progenitor population that expands in AML** *Proceedings of the Annual Meeting of the American Association for Cancer Research 2020*
Ediriwickrema, A., Ramakrishnan, S., Nakamoto, M., Ghanekar, S., Luca, B., Newman, A., Gentles, A., Majeti, R.
2020

- **Granulocyte Transfusions in a Cohort of Neutropenic Patients with Life-Threatening Infections and Hematologic Diseases** *AMER SOC HEMATOLOGY*
Ediriwickrema, A., Virk, M., Andrews, J.
2019; 3696
- **A Case Report of Refractory Immune Thrombocytopenia (ITP) Following Reduced Intensity Conditioning (RIC) Hematopoietic Cell Transplantation (HCT) for Myelodysplastic Syndrome (MDS) Successfully Treated with Off-Label Use of Daratumumab**
Migdady, Y., Gupta, R., Ediriwickrema, A., Socola, F., Arai, S., Martin, B. A.
AMER SOC HEMATOLOGY.2018
- **Comprehensive Cytokine Profiling of Patients with Advanced Systemic Mastocytosis Treated with Midostaurin**
Ediriwickrema, A., DeAngelo, D. J., George, T. I., Rosenberg-Hasson, Y., Perkins, C., Langford, C., Gotlib, J. R.
AMER SOC HEMATOLOGY.2018
- **Crescentic Glomerulonephritis With Immunoglobulin G4-Related Disease.** *The American journal of the medical sciences*
Raber, I. n., Ediriwickrema, A. n., Higgins, J. n., Kambham, N. n., Pao, A. C.
2017; 354 (3): 236–39
- **Acute bitemporal hemianopsia from a compressive anterior communicating artery aneurysm** *NEUROLOGY AND CLINICAL NEUROSCIENCE*
Keung, B., Ediriwickrema, A., Bulsara, K.
2015; 3 (3): 114–15
- **Tissue plasminogen activator via cross-collateralization for tandem internal carotid and middle cerebral artery occlusion.** *World journal of clinical cases*
Bulsara, K. R., Ediriwickrema, A., Pepper, J., Robertson, F., Aruny, J., Schindler, J.
2013; 1 (9): 290-294
- **Flow diverters and a tale of two aneurysms.** *Journal of neurointerventional surgery*
Kuzmik, G. A., Williamson, T., Ediriwickrema, A., Andeejani, A., Bulsara, K. R.
2013; 5 (4)
- **Intracranial stenting as monotherapy in subarachnoid hemorrhage and sickle cell disease.** *Journal of neurointerventional surgery*
Ediriwickrema, A., Williamson, T., Hebert, R., Matouk, C., Johnson, M. H., Bulsara, K. R.
2013; 5 (2)