Stanford

Siva Kasinathan

Instructor, Pediatrics - Rheumatology

CLINICAL OFFICE (PRIMARY)

- **Pediatrics**

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Bio

BIO

Siva Kasinathan, MD, PhD is a physician-scientist and Instructor of Pediatric Rheumatology at the Stanford University School of Medicine and Lucile Packard Children's Hospital. In addition to caring for children and young adults with rheumatic diseases in his clinical practice, Siva conducts research to advance the understanding of mechanisms of autoimmunity and autoinflammation.

Siva holds an MD and PhD in Molecular and Cell Biology from the University of Washington, where he developed several high-throughput methods for epigenome profiling and contributed new insights in chromatin biology and gene regulation. During his clinical training in pediatrics and rheumatology at Stanford, Siva pioneered approaches for single-molecule analysis of genetic variation, DNA methylation, and chromatin structure, and established a longitudinal rheumatic disease cohort and biorepository.

Siva's current research bridges genomics and immunology with a focus on developing and applying sensitive technologies to unravel the genetic and molecular underpinnings of lupus, arthritis, and other immune-mediated diseases. As a physician-scientist, Siva is committed to translating fundamental discoveries into precision therapies and biomarkers to improve outcomes for patients with rheumatic diseases.

CLINICAL FOCUS

- Pediatric Rheumatology
- Pediatrics

ACADEMIC APPOINTMENTS

- Instructor, Pediatrics - Rheumatology
- Member, Maternal & Child Health Research Institute (MCHRI)

HONORS AND AWARDS

- Distinguished Fellow Award, American College of Rheumatology (2025)

- Emerging Generation Award, American Society of Clinical Investigation (2025)
- Gary S. Gilkeson, MD Career Development Award, Lupus Foundation of America (2023 - 2025)
- Ernest and Amelia Gallo Endowed Fellow, Stanford Maternal and Child Health Research Institute (2023 - 2025)
- Hugh O'Brodovich Excellence in Basic Research Award, Stanford Department of Pediatrics (2022)
- Arnold P. Gold Humanism in Medicine Honor Society, University of Washington (2019)
- Micki and Robert Flowers Endowed Fellowship, Seattle ARCS Foundation (2012 - 2015)
- Joshua Green Foundation Endowed Scholarship, University of Washington (2011)
- Barry M. Goldwater Scholarship, The Barry Goldwater Scholarship Foundation (2009)

PROFESSIONAL EDUCATION

- Fellowship: Stanford University Pediatric Rheumatology Fellowship (2025) CA
- Board Certification: Pediatrics, American Board of Pediatrics (2022)
- Residency: Stanford University Pediatric Residency at Lucile Packard Children's Hospital (2022) CA
- MD, University of Washington School of Medicine , Medicine (2019)
- PhD, University of Washington , Molecular and Cell Biology (2017)

Research & Scholarship

CLINICAL TRIALS

- Observational Study of Pediatric Rheumatic Diseases: The CARRA Registry, Recruiting

Publications

PUBLICATIONS

- **DNASE1L3 Deficiency With Novel Missense Variant: Enzymatic and Plasma Fragmentomic Evidence of Pathogenicity and Partial Response to JAK Blockade** *ACR OPEN RHEUMATOLOGY*
  Tenorio, A., Sugio, T., Cheng, J., Bonner, D. E., Esfahani, M., Kasinathan, S., Hsu, J. J., Moyer, A., Vera, L., Carter, J., Reuter, C. M., Marwaha, S., Balboni, et al
  2026; 8 (2)

- **FOXP3 expression depends on cell-type-specific cis-regulatory elements and transcription factor circuitry.** *Immunity*
  Umhoefer, J. M., Arce, M. M., Kasinathan, S., Whalen, S., Dajani, R., Subramanya, S., Goudy, L., Belk, J. A., Zhou, R., Pham, M. T., Zhang, W., Hernandez, R., Tran, et al
  2025

- **Central control of dynamic gene circuits governs T cell rest and activation.** *Nature*
  Arce, M. M., Umhoefer, J. M., Arang, N., Kasinathan, S., Freimer, J. W., Steinhart, Z., Shen, H., Pham, M. T., Ota, M., Wadhera, A., Dajani, R., Dorovskyi, D., Chen, et al
  2024

- **Transposition enables low-input single-molecule concurrent genomics and epigenomics** *NATURE GENETICS*
  Kasinathan, S., Ramani, V.
  2024

- **Direct transposition of native DNA for sensitive multimodal single-molecule sequencing.** *Nature genetics*
  Nanda, A. S., Wu, K., Irkliyenko, I., Woo, B., Ostrowski, M. S., Clugston, A. S., Sayles, L. C., Xu, L., Satpathy, A. T., Nguyen, H. G., Alejandro Sweet-Cordero, E., Goodarzi, H., Kasinathan, et al
  2024

- **Nucleosome density shapes kilobase-scale regulation by a mammalian chromatin remodeler.** *Nature structural & molecular biology*
  Abdulhay, N. J., Hsieh, L. J., McNally, C. P., Ostrowski, M. S., Moore, C. M., Ketavarapu, M., Kasinathan, S., Nanda, A. S., Wu, K., Chio, U. S., Zhou, Z., Goodarzi, H., Narlikar, et al

2023

- **The glucose-sensing transcription factor MLX balances metabolism and stress to suppress apoptosis and maintain spermatogenesis.** *PLoS biology*
  Carroll, P. A., Freie, B. W., Cheng, P. F., Kasinathan, S., Gu, H., Hedrich, T., Dowdle, J. A., Venkataramani, V., Ramani, V., Wu, X., Raftery, D., Shendure, J., Ayer, et al
  2021; 19 (10): e3001085

- **Massively multiplex single-molecule oligonucleosome footprinting.** *eLife*
  Abdulhay, N. J., McNally, C. P., Hsieh, L. J., Kasinathan, S., Keith, A., Estes, L. S., Karimzadeh, M., Underwood, J. G., Goodarzi, H., Narlikar, G. J., Ramani, V.
  2020; 9

- **Non-B-Form DNA Is Enriched at Centromeres.** *Molecular biology and evolution*
  Kasinathan, S. n., Henikoff, S. n.
  2018; 35 (4): 949–62

- **Simple and Complex Centromeric Satellites in Drosophila Sibling Species.** *Genetics*
  Talbert, P. B., Kasinathan, S. n., Henikoff, S. n.
  2018; 208 (3): 977–90

- **Remarkable Evolutionary Plasticity of Centromeric Chromatin.** *Cold Spring Harbor symposia on quantitative biology*
  Henikoff, S. n., Thakur, J. n., Kasinathan, S. n., Talbert, P. B.
  2017; 82: 71–82

- **ChEC-seq kinetics discriminates transcription factor binding sites by DNA sequence and shape in vivo.** *Nature communications*
  Zentner, G. E., Kasinathan, S. n., Xin, B. n., Rohs, R. n., Henikoff, S. n.
  2015; 6: 8733

- **Mapping regulatory factors by immunoprecipitation from native chromatin.** *Current protocols in molecular biology*
  Orsi, G. A., Kasinathan, S. n., Zentner, G. E., Henikoff, S. n., Ahmad, K. n.
  2015; 110: 21.31.1–21.31.25

- **Acceleration of genetic gain in cattle by reduction of generation interval.** *Scientific reports*
  Kasinathan, P. n., Wei, H. n., Xiang, T. n., Molina, J. A., Metzger, J. n., Broek, D. n., Kasinathan, S. n., Faber, D. C., Allan, M. F.
  2015; 5: 8674

- **A unique chromatin complex occupies young α-satellite arrays of human centromeres.** *Science advances*
  Henikoff, J. G., Thakur, J. n., Kasinathan, S. n., Henikoff, S. n.
  2015; 1 (1)

- **5-Aza-CdR delivers a gene body blow.** *Cancer cell*
  Kasinathan, S. n., Henikoff, S. n.
  2014; 26 (4): 449–51

- **High-resolution mapping defines the cooperative architecture of Polycomb response elements.** *Genome research*
  Orsi, G. A., Kasinathan, S. n., Hughes, K. T., Saminadin-Peter, S. n., Henikoff, S. n., Ahmad, K. n.
  2014; 24 (5): 809–20

- **High-resolution mapping of transcription factor binding sites on native chromatin.** *Nature methods*
  Kasinathan, S. n., Orsi, G. A., Zentner, G. E., Ahmad, K. n., Henikoff, S. n.
  2014; 11 (2): 203–9

- **Cell-type-specific nuclei purification from whole animals for genome-wide expression and chromatin profiling.** *Genome research*
  Steiner, F. A., Talbert, P. B., Kasinathan, S. n., Deal, R. B., Henikoff, S. n.
  2012; 22 (4): 766–77

- **Nuclear alpha1-adrenergic receptors signal activated ERK localization to caveolae in adult cardiac myocytes.** *Circulation research*
  Wright, C. D., Chen, Q., Baye, N. L., Huang, Y., Healy, C. L., Kasinathan, S., O'Connell, T. D.
  2008; 103 (9): 992-1000