Stanford



Nasim Bararpour

Basic Life Research Scientist, Genetics

Bio

BIO

Nasim Bararpour is a postdoctoral fellow in the Department of Genetics and Personalized Medicine at Stanford School of Medicine, where she works at the intersection of data science, and multi-omics integration. She completed her Ph.D. in Life Science from the University of Lausanne, developing deep expertise in mass spectrometry-based metabolomics and lipidomics as well as integrative omics. She joined Stanford in 2020.

At Stanford, Dr. Bararpour has led and contributed to some of the most comprehensive multi-omics studies to date, including the human Personalized Omics Profiling (hPOP) project, the integrative Personal Omics Profiling (iPOP) study, and the Human Tumor Atlas Network (HTAN). Her first-authored paper in Cell (2026), which integrated thirteen molecular layers across individuals of diverse ancestries, identified ethnicity-specific drug target patterns and molecular pathways with direct implications for cardiometabolic disease, making a scientific case for population-aware precision medicine. She is the author of over 20 peer-reviewed publications, including papers in Nature Metabolism, and Nature Biomedical Engineering.

ACADEMIC APPOINTMENTS

- Basic Life Research Scientist, Genetics

LINKS

- My linkedin: https://www.linkedin.com/in/nasimbararpour
- My github: https://github.com/nbararpo

Publications

PUBLICATIONS

- **A comparison of deep multiomics profiles across ethnicity, geography, and age.** *Cell*
  Barapour, N., Cao, J. Z., Wu, Y., Gupta, S., Hoopmann, M. R., Qin, R., Midha, M. K., Mireault, M., Juanes-Velasco, P., Hanson, C., Ahadi, S., Higgs, E., Baxter, et al
  2026; 189 (10): 3004-3024.e35

- **Publisher Correction: The impact of exercise on gene regulation in association with complex trait genetics.** *Nature communications*
  Vetr, N. G., Gay, N. R., Montgomery, S. B.
  2026; 17 (1)

- **Multi-omic identification of key transcriptional regulatory programs during endurance exercise training in rats.** *Nature communications*
  Smith, G. R., Zhao, B., Lindholm, M. E., Raja, A., Viggars, M., Pincas, H., Gay, N. R., Sun, Y., Vangeti, S., Ge, Y., Nair, V. D., Sanford, J. A., Amper, et al
  2026

- **Polyclonal origins of human premalignant colorectal lesions.** *Nature*

Van Egeren, D., Schenck, R. O., Khan, A., Horning, A. M., Mo, S., Weiß, C. L., Esplin, E. D., Becker, W. R., Wu, S., Hanson, C., Barapour, N., Jiang, L., Contrepois, et al

2025

- **Multi-omics analysis of endurance exercise reveals cardioprotective remodeling in rat heart**

  Brochet, P., Njoroge, J., Montalvo Hernandez, S., Lindholm, M., Smith, G., Amar, D., Gay, N., Zhao, B., Hung, C., Jin, C., Chavez, C., Nachun, D., Zaslavsky, et al

  LIPPINCOTT WILLIAMS & WILKINS.2025

- **Metabolomic Profiles During and After a Hypertensive Disorder of Pregnancy: The EPOCH Study.** *International journal of molecular sciences*

  Hlatky, M. A., Shu, C. H., Bararpour, N., Murphy, B. M., Sorondo, S. M., Leeper, N. J., Wong, F., Stevenson, D. K., Shaw, G. M., Stefanick, M. L., Boyd, H. A., Melbye, M., Sedan, et al

  2025; 26 (13)

- **Multiomic analysis of familial adenomatous polyposis reveals molecular pathways associated with early tumorigenesis.** *Nature cancer*

  Esplin, E. D., Hanson, C., Wu, S., Horning, A. M., Barapour, N., Nevins, S. A., Jiang, L., Contrepois, K., Lee, H., Guha, T. K., Hu, Z., Laquindanum, R., Mills, et al

  2024

- **The impact of exercise on gene regulation in association with complex trait genetics.** *Nature communications*

  Vetr, N. G., Gay, N. R., MoTrPAC Study Group, Montgomery, S. B., Adkins, J. N., Albertson, B. G., Amar, D., Amper, M. A., Armenteros, J. J., Ashley, E., Avila-Pacheco, J., Bae, D., Balci, A. T., et al

  2024; 15 (1): 3346

- **Temporal dynamics of the multi-omic response to endurance exercise training.** *Nature*

  2024; 629 (8010): 174-183

- **Sexual dimorphism and the multi-omic response to exercise training in rat subcutaneous white adipose tissue.** *Nature metabolism*

  Many, G. M., Sanford, J. A., Sagendorf, T. J., Hou, Z., Nigro, P., Whytock, K. L., Amar, D., Caputo, T., Gay, N. R., Gaul, D. A., Hirshman, M. F., Jimenez-Morales, D., Lindholm, et al

  2024

- **Molecular adaptations in response to exercise training are associated with tissue-specific transcriptomic and epigenomic signatures.** *Cell genomics*

  Nair, V. D., Pincas, H., Smith, G. R., Zaslavsky, E., Ge, Y., Amper, M. A., Vasoya, M., Chikina, M., Sun, Y., Raja, A. N., Mao, W., Gay, N. R., Esser, et al

  2024: 100421

- **The mitochondrial multi-omic response to exercise training across rat tissues.** *Cell metabolism*

  Amar, D., Gay, N. R., Jimenez-Morales, D., Jean Beltran, P. M., Ramaker, M. E., Raja, A. N., Zhao, B., Sun, Y., Marwaha, S., Gaul, D. A., Hershman, S. G., Ferrasse, A., Xia, et al

  2024

- **People living with HIV display increased anti-apolipoprotein A1 auto-antibodies, inflammation, and kynurenine metabolites: a case-control study.** *Frontiers in cardiovascular medicine*

  Frias, M. A., Pagano, S., Bararpour, N., Sidibé, J., Kamau, F., Fétaud-Lapierre, V., Hudson, P., Thomas, A., Lecour, S., Strijdom, H., Vuilleumier, N.

  2024; 11: 1343361

- **SMYD3: a new regulator of adipocyte precursor proliferation at the early steps of differentiation.** *International journal of obesity (2005)*

  Sajic, T., Ferreira Gomes, C. K., Gasser, M., Caputo, T., Bararpour, N., Landaluce-Iturriria, E., Augsburger, M., Walter, N., Hainard, A., Lopez-Mejia, I. C., Fracasso, T., Thomas, A., Gilardi, et al

  2023

- **Arsenic induces metabolome remodeling in mature human adipocytes.** *Toxicology*

  Gasser, M., Lenglet, S., Bararpour, N., Sajic, T., Vaucher, J., Wiskott, K., Augsburger, M., Fracasso, T., Gilardi, F., Thomas, A.

  2023: 153672

- **Dynamic lipidome alterations associated with human health, disease and ageing.** *Nature metabolism*

  Hornburg, D., Wu, S., Moqri, M., Zhou, X., Contrepois, K., Bararpour, N., Traber, G. M., Su, B., Metwally, A. A., Avina, M., Zhou, W., Ubellacker, J. M., Mishra, et al

  2023

- **The polyclonal path to malignant transformation in familial adenomatous polyposis**
  Schenck, R. O., Khan, A., Horning, A., Esplin, E. D., Monte, E., Wu, S., Hanson, C., Bararpour, N., Neves, S., Jiang, L., Contrepois, K., Lee, H., Guha, et al
  AMER ASSOC CANCER RESEARCH.2023

- **Multi-omics microsampling for the profiling of lifestyle-associated changes in health.** *Nature biomedical engineering*
  Shen, X., Kellogg, R., Panyard, D. J., Bararpour, N., Castillo, K. E., Lee-McMullen, B., Delfarah, A., Ubellacker, J., Ahadi, S., Rosenberg-Hasson, Y., Ganz, A., Contrepois, K., Michael, et al
  2023

- **Toxicity and Metabolomic Impact of Cobalt, Chromium, and Nickel Exposure on HepaRG Hepatocytes.** *Chemical research in toxicology*
  Bellouard, M., Gasser, M., Lenglet, S., Gilardi, F., Bararpour, N., Augsburger, M., Thomas, A., Alvarez, J.
  2022

- **Cadmium acute exposure induces metabolic and transcriptomic perturbations in human mature adipocytes.** *Toxicology*
  Gasser, M., Lenglet, S., Bararpour, N., Sajic, T., Wiskott, K., Augsburger, M., Fracasso, T., Gilardi, F., Thomas, A.
  2022: 153153

- **Metabolomics reveals biomarkers in human urine and plasma to predict cytochrome P450 2D6 (CYP2D6) activity.** *British journal of pharmacology*
  Magliocco, G., Desmeules, J., Matthey, A., Quirós-Guerrero, L. M., Bararpour, N., Joye, T., Marcourt, L., Queiroz, E. F., Wolfender, J. L., Gloor, Y., Thomas, A., Daali, Y.
  2021; 178 (23): 4708-4725

- **Triangulating evidence from longitudinal and Mendelian randomization studies of metabolomic biomarkers for type 2 diabetes.** *Scientific reports*
  Porcu, E., Gilardi, F., Darrous, L., Yengo, L., Bararpour, N., Gasser, M., Marques-Vidal, P., Froguel, P., Waeber, G., Thomas, A., Kutalik, Z.
  2021; 11 (1): 6197

- **DBnorm as an R package for the comparison and selection of appropriate statistical methods for batch effect correction in metabolomic studies.** *Scientific reports*
  Bararpour, N., Gilardi, F., Carmeli, C., Sidibe, J., Ivanisevic, J., Caputo, T., Augsburger, M., Grabherr, S., Desvergne, B., Guex, N., Bochud, M., Thomas, A.
  2021; 11 (1): 5657

- **Detecting early myocardial ischemia in rat heart by MALDI imaging mass spectrometry.** *Scientific reports*
  Aljakna Khan, A., Bararpour, N., Gorka, M., Joye, T., Morel, S., Montessuit, C. A., Grabherr, S., Fracasso, T., Augsburger, M., Kwak, B. R., Thomas, A., Sabatasso, S.
  2021; 11 (1): 5135

- **Anti-adipogenic signals at the onset of obesity-related inflammation in white adipose tissue** *CELLULAR AND MOLECULAR LIFE SCIENCES*
  Caputo, T., Tran, V. T., Bararpour, N., Winkler, C., Aguileta, G., Trang, K., Attianese, G. M. P., Wilson, A., Thomas, A., Pagni, M., Guex, N., Desvergne, B., Gilardi, et al
  2021; 78 (1): 227-247

- **In situ metabolomic changes in rat hippocampus after acute cocaine administration** *INTERNATIONAL JOURNAL OF MASS SPECTROMETRY*
  Joye, T., Bararpour, N., Augsburger, M., Boutrel, B., Thomas, A.
  2019; 437: 87-91

- **Separation of blood microsamples by exploiting sedimentation at the microscale.** *Scientific reports*
  Forchelet, D., Béguin, S., Sajic, T., Bararpour, N., Pataky, Z., Frias, M., Grabherr, S., Augsburger, M., Liu, Y., Charnley, M., Déglon, J., Aebersold, R., Thomas, et al
  2018; 8 (1): 14101

- **Proteome and Metabolome of Subretinal Fluid in Central Serous Chorioretinopathy and Rhegmatogenous Retinal Detachment: A Pilot Case Study.** *Translational vision science & technology*
  Kowalczuk, L., Matet, A., Dor, M., Bararpour, N., Daruich, A., Dirani, A., Behar-Cohen, F., Thomas, A., Turck, N.
  2018; 7 (1): 3

PRESENTATIONS

- A Comparison of Deep Multi-Omics Profiles Across Ethnicity, Geography and Age - HUPO 2025 (November 9, 2025 - November 13, 2025)