

Stanford



Ansuman Satpathy

Instructor, Pathology

Bio

ACADEMIC APPOINTMENTS

- Instructor, Pathology

HONORS AND AWARDS

- Medical Scientist Training Program (MSTP), NIH (2006-2014)
- Predoctoral Fellowship, American Heart Association (2012)
- David M. Kipnis Dissertation Award, Washington University School of Medicine (2013)
- Irvington Postdoctoral Fellowship, Cancer Research Institute (2016)
- Bridge Scholar, Parker Institute for Cancer Immunotherapy (2017)
- Career Award for Medical Scientists, Burroughs Wellcome Fund (2018)
- Clinical Scientist Career Development Award (K08), National Cancer Institute (2018)
- Innovative Technology Award, Bill and Melinda Gates Foundation (2018)
- Michelson Prize for Human Immunology and Vaccine Research, Michelson Research Foundation (2018)

PROFESSIONAL EDUCATION

- Visiting Scholar, King's College London , Immunology (2005)
- B.A., University of Illinois, Urbana-Champaign , Philosophy (2006)
- B.S., University of Illinois, Urbana-Champaign , Molecular Biology (2006)
- M.D., Washington University in St. Louis , Medicine (2014)
- Ph.D., Washington University in St. Louis , Immunology (2014)
- Residency, Stanford Hospital and Clinics , Clinical Pathology (2017)

LINKS

- www.satpathology.com: satpathology.com

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Epigenomics, Cancer immunology, Single-cell genomics

Publications

PUBLICATIONS

- **Coupled Single-Cell CRISPR Screening and Epigenomic Profiling Reveals Causal Gene Regulatory Networks.** *Cell*
Rubin, A. J., Parker, K. R., Satpathy, A. T., Qi, Y., Wu, B., Ong, A. J., Mumbach, M. R., Ji, A. L., Kim, D. S., Cho, S. W., Zarnegar, B. J., Greenleaf, W. J., Chang, et al
2018
- **Transcript-indexed ATAC-seq for precision immune profiling.** *Nature medicine*
Satpathy, A. T., Saligrama, N., Buenrostro, J. D., Wei, Y., Wu, B., Rubin, A. J., Granja, J. M., Lareau, C. A., Li, R., Qi, Y., Parker, K. R., Mumbach, M. R., Serratelli, et al
2018
- **Enhancer connectome in primary human cells identifies target genes of disease-associated DNA elements.** *Nature genetics*
Mumbach, M. R., Satpathy, A. T., Boyle, E. A., Dai, C., Gowen, B. G., Cho, S. W., Nguyen, M. L., Rubin, A. J., Granja, J. M., Kazane, K. R., Wei, Y., Nguyen, T., Greenside, et al
2017
- **Gene regulation in the immune system by long noncoding RNAs.** *Nature immunology*
Chen, Y. G., Satpathy, A. T., Chang, H. Y.
2017; 18 (9): 962–72
- **Long Noncoding RNA in Hematopoiesis and Immunity** *IMMUNITY*
Satpathy, A. T., Chang, H. Y.
2015; 42 (5): 792-804
- **Runx1 and Cbf beta regulate the development of Flt3(+) dendritic cell progenitors and restrict myeloproliferative disorder** *BLOOD*
Satpathy, A. T., Briseno, C. G., Cai, X., Michael, D. G., Chou, C., Hsiung, S., Bhattacharya, D., Speck, N. A., Egawa, T.
2014; 123 (19): 2968-2977
- **L-Myc expression by dendritic cells is required for optimal T-cell priming** *NATURE*
Wumesh, K. C., Satpathy, A. T., Rapaport, A. S., Briseno, C. G., Wu, X., Albring, J. C., Russler-Germain, E. V., Kretzer, N. M., Durai, V., Persaud, S. P., Edelson, B. T., Loschko, J., Cella, et al
2014; 507 (7491): 243-?
- **Notch2-dependent classical dendritic cells orchestrate intestinal immunity to attaching-and-effacing bacterial pathogens** *NATURE IMMUNOLOGY*
Satpathy, A. T., Briseno, C. G., Lee, J. S., Ng, D., Manieri, N. A., Wumesh, K. C., Wu, X., Thomas, S. R., Lee, W., Turkoz, M., McDonald, K. G., Meredith, M. M., Song, et al
2013; 14 (9): 937-?
- **Re(de)fining the dendritic cell lineage** *NATURE IMMUNOLOGY*
Satpathy, A. T., Wu, X., Albring, J. C., Murphy, K. M.
2012; 13 (12): 1145-1154
- **Zbtb46 expression distinguishes classical dendritic cells and their committed progenitors from other immune lineages** *JOURNAL OF EXPERIMENTAL MEDICINE*
Satpathy, A. T., Wumesh, K. C., Albring, J. C., Edelson, B. T., Kretzer, N. M., Bhattacharya, D., Murphy, T. L., Murphy, K. M.
2012; 209 (6): 1135-1152
- **A Mutation in the Transcription Factor Foxp3 Drives T Helper 2 Effector Function in Regulatory T Cells.** *Immunity*
Van Gool, F., Nguyen, M. L., Mumbach, M. R., Satpathy, A. T., Rosenthal, W. L., Giacometti, S., Le, D. T., Liu, W., Brusko, T. M., Anderson, M. S., Rudensky, A. Y., Marson, A., Chang, et al
2019
- **Enhancer connectome nominates target genes of inherited risk variants from inflammatory skin disorders.** *The Journal of investigative dermatology*
Jeng, M. Y., Mumbach, M. R., Granja, J. M., Satpathy, A. T., Chang, H. Y., Chang, A. L.
2018
- **Notch2-dependent DC2s mediate splenic germinal center responses.** *Proceedings of the National Academy of Sciences of the United States of America*

- Briseno, C. G., Satpathy, A. T., Davidson, J. T., Ferris, S. T., Durai, V., Bagadia, P., O'Connor, K. W., Theisen, D. J., Murphy, T. L., Murphy, K. M.
2018
- **Integrative analysis of single-cell genomics data by coupled nonnegative matrix factorizations.** *Proceedings of the National Academy of Sciences of the United States of America*
Duren, Z., Chen, X., Zamanighomi, M., Zeng, W., Satpathy, A. T., Chang, H. Y., Wang, Y., Wong, W. H.
2018
 - **Expression of the transcription factor ZBTB46 distinguishes human histiocytic disorders of classical dendritic cell origin.** *Modern pathology : an official journal of the United States and Canadian Academy of Pathology, Inc*
Satpathy, A. T., Brown, R. A., Gomulica, E., Briseño, C. G., Mumbach, M. R., Pan, Z., Murphy, K. M., Natkunam, Y., Chang, H. Y., Kim, J.
2018
 - **The chromatin accessibility landscape of primary human cancers.** *Science (New York, N.Y.)*
Corces, M. R., Granja, J. M., Shams, S., Louie, B. H., Seoane, J. A., Zhou, W., Silva, T. C., Groeneveld, C., Wong, C. K., Cho, S. W., Satpathy, A. T., Mumbach, M. R., Hoadley, et al
2018; 362 (6413)
 - **Pembrolizumab for advanced basal cell carcinoma: an investigator-initiated, proof-of-concept study.** *Journal of the American Academy of Dermatology*
Chang, A. L., Tran, D. C., Cannon, J. G., Li, S., Jeng, M., Patel, R., Van der Bokke, L., Pague, A., Brotherton, R., Rieger, K. E., Satpathy, A. T., Yost, K. E., Reddy, et al
2018
 - **Transforming Growth Factor Beta 3 (TGFB3) - a Novel Systemic Sclerosis Susceptibility Locus Involved in Fibrosis and Th17 Cell Development Identified By Genome-Wide Association Study in African Americans from the Genome Research in African American Scleroderma Patients Consortium**
Gourh, P., Remmers, E. F., Satpathy, A., Boyden, S., Morgan, N. D., Shah, A. A., Adeyemo, A., Bentley, A., Carns, M. A., Chandrasekharappa, S. C., Chung, L., Criswell, L. A., Derk, et al
WILEY.2017
 - **Cells in Inflamed Islets of Autoimmune Diabetes Mice.** *Journal of immunology*
Klementowicz, J. E., Mahne, A. E., Spence, A., Nguyen, V., Satpathy, A. T., Murphy, K. M., Tang, Q.
2017
 - **Revisiting the specificity of the MHC class II transactivator CIITA in classical murine dendritic cells in vivo.** *European journal of immunology*
Anderson, D. A., Grajales-Reyes, G. E., Satpathy, A. T., Hueichucura, C. E., Murphy, T. L., Murphy, K. M.
2017
 - **An improved ATAC-seq protocol reduces background and enables interrogation of frozen tissues.** *Nature methods*
Corces, M. R., Trevino, A. E., Hamilton, E. G., Greenside, P. G., Sinnott-Armstrong, N. A., Vesuna, S., Satpathy, A. T., Rubin, A. J., Montine, K. S., Wu, B., Kathiria, A., Cho, S. W., Mumbach, et al
2017
 - **Discovery of stimulation-responsive immune enhancers with CRISPR activation.** *Nature*
Simeonov, D. R., Gowen, B. G., Boontanrart, M., Roth, T. L., Gagnon, J. D., Mumbach, M. R., Satpathy, A. T., Lee, Y., Bray, N. L., Chan, A. Y., Lituiev, D. S., Nguyen, M. L., Gate, et al
2017
 - **Chromatin Accessibility Landscape of Cutaneous T Cell Lymphoma and Dynamic Response to HDAC Inhibitors.** *Cancer cell*
Qu, K., Zaba, L. C., Satpathy, A. T., Giresi, P. G., Li, R., Jin, Y., Armstrong, R., Jin, C., Schmitt, N., Rahbar, Z., Ueno, H., Greenleaf, W. J., Kim, et al
2017
 - **ATAC-se reveals the accessible genome by transposase-mediated imaging and sequencing.** *Nature methods*
Chen, X., Shen, Y., Draper, W., Buenrostro, J. D., Litzenburger, U., Cho, S. W., Satpathy, A. T., Carter, A. C., Ghosh, R. P., East-Seletsky, A., Doudna, J. A., Greenleaf, W. J., Liphardt, et al
2016
 - **A Long Noncoding RNA lincRNA-EPS Acts as a Transcriptional Brake to Restrain Inflammation** *CELL*
Atianand, M. K., Hu, W., Satpathy, A. T., Shen, Y., Ricci, E. P., Alvarez-Dominguez, J. R., Bhatta, A., Schattgen, S. A., McGowan, J. D., Blin, J., Braun, J. E., Gandhi, P., Moore, et al
2016; 165 (7): 1672-1685

- **Cellular morphology of BRAF V600E-positive Langerhans cell histiocytosis** *BLOOD*
Satpathy, A. T., Tan, B. T.
2015; 126 (15): 1857-1857
- **Heme-Mediated SPI-C Induction Promotes Monocyte Differentiation into Iron-Recycling Macrophages** *CELL*
Haldar, M., Kohyama, M., So, A. Y., Wumesh, K. C., Wu, X., Briseno, C. G., Satpathy, A. T., Kretzer, N. M., Arase, H., Rajasekaran, N. S., Wang, L., Egawa, T., Igarashi, et al
2014; 156 (6): 1223-1234
- **Embryonic and Adult-Derived Resident Cardiac Macrophages Are Maintained through Distinct Mechanisms at Steady State and during Inflammation** *IMMUNITY*
Epelman, S., Lavine, K. J., Beaudin, A. E., Sojka, D. K., Carrero, J. A., Calderon, B., Brija, T., Gautier, E. L., Ivanov, S., Satpathy, A. T., Schilling, J. D., Schwendener, R., Sergin, et al
2014; 40 (1): 91-104
- **Extrathymic Aire-Expressing Cells Are a Distinct Bone Marrow-Derived Population that Induce Functional Inactivation of CD4(+) T Cells** *IMMUNITY*
Gardner, J. M., Metzger, T. C., McMahon, E. J., Au-Yeung, B. B., Krawisz, A. K., Lu, W., Price, J. D., Johannes, K. P., Satpathy, A. T., Murphy, K. M., Tarbell, K. V., Weiss, A., Anderson, et al
2013; 39 (3): 560-572
- **Bcl11a Controls Flt3 Expression in Early Hematopoietic Progenitors and Is Required for pDC Development In Vivo** *PLOS ONE*
Wu, X., Satpathy, A. T., Wumesh, K. C., Liu, P., Murphy, T. L., Murphy, K. M.
2013; 8 (5)
- **Ly6C(hi) Monocytes in the Inflamed Colon Give Rise to Proinflammatory Effector Cells and Migratory Antigen-Presenting Cells** *IMMUNITY*
Zigmond, E., Varol, C., Farache, J., Elmaliah, E., Satpathy, A. T., Friedlander, G., Mack, M., Shpigel, N., Boneca, I. G., Murphy, K. M., Shakhar, G., Halpern, Z., Jung, et al
2012; 37 (6): 1076-1090
- **Compensatory dendritic cell development mediated by BATF-IRF interactions** *NATURE*
Tussiwand, R., Lee, W., Murphy, T. L., Mashayekhi, M., Wumesh, K. C., Albring, J. C., Satpathy, A. T., Rotondo, J. A., Edelson, B. T., Kretzer, N. M., Wu, X., Weiss, L. A., Glasmacher, et al
2012; 490 (7421): 502-?
- **Cross-dressed CD8 alpha(+)/CD103(+) dendritic cells prime CD8(+) T cells following vaccination** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Li, L., Kim, S., Herndon, J. M., Goedegebuure, P., Belt, B. A., Satpathy, A. T., Fleming, T. P., Hansen, T. H., Murphy, K. M., Gillanders, W. E.
2012; 109 (31): 12716-12721
- **Dual actions of Meis1 inhibit erythroid progenitor development and sustain general hematopoietic cell proliferation** *BLOOD*
Cai, M., Langer, E. M., Gill, J. G., Satpathy, A. T., Albring, J. C., Wumesh, K. C., Murphy, T. L., Murphy, K. M.
2012; 120 (2): 335-346
- **IRF-8 extinguishes neutrophil production and promotes dendritic cell lineage commitment in both myeloid and lymphoid mouse progenitors** *BLOOD*
Becker, A. M., Michael, D. G., Satpathy, A. T., Sciammas, R., Singh, H., Bhattacharya, D.
2012; 119 (9): 2003-2012
- **Transcription factor networks in dendritic cell development** *SEMINARS IN IMMUNOLOGY*
Satpathy, A. T., Murphy, K. M., Wumesh, K. C.
2011; 23 (5): 388-397
- **Targeting of B and T lymphocyte associated (BTLA) prevents graft-versus-host disease without global immunosuppression** *JOURNAL OF EXPERIMENTAL MEDICINE*
Albring, J. C., Sandau, M. M., Rapaport, A. S., Edelson, B. T., Satpathy, A., Mashayekhi, M., Lathrop, S. K., Hsieh, C., Stelljes, M., Colonna, M., Murphy, T. L., Murphy, K. M.
2010; 207 (12): 2551-2559
- **Commercially Available Outbred Mice for Genome-Wide Association Studies** *PLOS GENETICS*
Yalcin, B., Nicod, J., Bhomra, A., Davidson, S., Cleak, J., Farinelli, L., Osteras, M., Whitley, A., Yuan, W., Gan, X., Goodson, M., Klenerman, P., Satpathy, et al
2010; 6 (9)

- **Enhanced thymic selection of FoxP3(+) regulatory T cells in the NOD mouse model of autoimmune diabetes** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Feurerer, M., Jiang, W., Holler, P. D., Satpathy, A., Campbell, C., Bogue, M., Mathis, D., Benoist, C.
2007; 104 (46): 18181-18186
- **Cytokines in type 2 diabetes** *INTERLEUKINS*
Johnson, D. R., O'Connor, J. C., Satpathy, A., Freund, G. G.
2006; 74: 405-441
- **IL-1 beta-mediated innate immunity is amplified in the db/db mouse model of type 2 diabetes** *JOURNAL OF IMMUNOLOGY*
O'Connor, J. C., Satpathy, A., Hartman, M. E., Horvath, E. M., Kelley, K. W., Dantzer, R., Johnson, R. W., Freund, G. G.
2005; 174 (8): 4991-4997