Stanford

Alisa Mueller, MD, PhD

Assistant Professor of Medicine (Immunology and Rheumatology)

Medicine - Immunology & Rheumatology

CLINICAL OFFICE (PRIMARY)

- **VA Palo Alto Health Care System**

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Bio

BIO

Dr. Mueller is an Assistant Professor in the Division of Immunology and Rheumatology. As a physician-scientist, she leads a research laboratory investigating mechanisms that drive stromal pathology in rheumatoid arthritis and other chronic inflammatory conditions. Utilizing innovative techniques in immunology, genomics, and regenerative medicine, she and her team aim to develop novel therapeutic approaches to combat autoimmune diseases.

Dr. Mueller earned her MD and PhD degrees at Stanford University as part of the Medical Scientist Training Program where she investigated mechanisms regulating a mesenchymal progenitor population in skeletal muscle that mediates both healthy tissue regeneration and pathologic fibrosis. During her training, she was awarded predoctoral grants from the NIH National Institute on Aging and the California Institute of Regenerative Medicine. Her studies culminated in a first-author publication in Nature and co-authorship on publications in Cell and Nature Communications. Subsequently, she pursued medicine residency and rheumatology fellowship at Brigham and Women's Hospital and Harvard Medical School where she explored mechanisms driving synovial fibroblast pathogenicity in rheumatoid arthritis. Her work led to the identification of non-canonical Wnt signaling as a critical mediator of RA synovial fibroblast inflammatory activation as well as the development of functional genomic screens to elucidate a broad set of novel therapeutic targets in inflammatory fibroblasts. Moreover, she has also led high-dimensional immunoprofiling studies to reveal underlying immune aberrations in patients with systemic sclerosis and elucidate biologic mechanisms catalyzing disease in patients with longstanding immune-related disorders of unknown etiology in partnership with the Undiagnosed Diseases Network. During her fellowship and instructorship, she received a Distinguished Fellow Award from the American College of Rheumatology as well as grants including the NIH NIAMS Mentored Clinical Scientist Research Career Development Award (K08), Rheumatology Research Foundation Scientist Development Award with the Malawista Endowment Distinction, Hearst Young Investigator Award, and Innovation Evergreen Fund Award. Her work has resulted in co-first author publications in the Journal of Clinical Investigation, Cell Reports Medicine, and ACR Open Rheumatology as well as as co-authorship on publications in Lancet Rheumatology and the New England Journal of Medicine.

In addition to her scientific endeavors, Dr. Mueller is also dedicated to providing high quality clinical care and education. She serves as an attending physician specializing in rheumatology where she mentors trainees in outpatient and inpatient settings and provides educational lectures. With an interdisciplinary team, she developed an interactive medical case on neurologic manifestations of lupus which was published in the New England Journal

of Medicine. She was awarded an Arnold Dunne Award for Compassion and Dedication to Patient Care at Brigham and Women's Hospital. By pursuing basic and translational research alongside clinical care, Dr. Mueller and her team strive to uncover basic mechanisms regulating stromal biology in autoimmune and inflammatory disease development and to create diagnostic strategies and targeted therapeutics that will benefit patients who do not respond to conventional therapies.

CLINICAL FOCUS

- Rheumatology

ACADEMIC APPOINTMENTS

- Assistant Professor, Medicine - Immunology & Rheumatology

ADMINISTRATIVE APPOINTMENTS

- Committee Member, Committee on Research, American College of Rheumatology, (2024- present)
- Advisory Committee Member, Office for Research Careers, Brigham and Women's Hospital, (2023-2025)
- Invited Guest, Committee on Research, American College of Rheumatology, (2023-2024)
- Scientific Director of New Initiatives, Division of Rheumatology, Inflammation, and Immunity, Brigham and Women's Hospital, (2022-2025)
- Chair, Aims Review Committee (Brigham and Women's Hospital site), Joint Biology Consortium, (2022-2024)
- Member-at-Large, Portfolio Review Panel, Rheumatology Research Foundation, (2022-2024)
- Fellow-in-Training Representative, Committee on Government Affairs, American College of Rheumatology, (2021-2022)
- Representative, Advisory Committee, Joint Biology Consortium, (2020-2024)
- Fellow-in-Training Representative, Board of Directors, Rheumatology Research Foundation, (2020-2021)
- Member, Federation of Clinical Immunology Societies, (2019-2024)
- Member, American College of Rheumatology, (2018- present)
- Member, Joint Biology Consortium, (2018- present)
- Member, Massachusetts Medical Society, (2016-2024)
- Member, American Medical Association, (2016-2024)

HONORS AND AWARDS

- Stanford-HBMC RISE (Recognizing Individuals for Support and Empowerment) Award, Stanford University School of Medicine (2025)
- Mentored Clinical Scientist Development Award (K08), NIH NIAMS (2024-2025)
- Chair's Research Award, Department of Medicine, Brigham and Women's Hospital (2024)
- Innovation Evergreen Fund Award, Department of Medicine, Brigham and Women's Hospital (2024)
- Hearst Young Investigator Award, Brigham and Women's Hospital Department of Medicine (2023)
- Scientist Development Award, Tobé and Stephen E. Malawista, MD Endowment, Rheumatology Research Foundation (2022-2026)
- Distinguished Fellow Award, American College of Rheumatology (2021)
- Microgrant, Joint Biology Consortium (2020)
- Education Award, Department of Medicine, Brigham and Women's Hospital (2019)
- Arnold Dunne Award for Compassion and Dedication to Patient Care, Internal Medicine Residency, Brigham and Women's Hospital (2017)
- Ruth L. Kirschstein National Research Service Award Predoctoral Fellowship, NIH NIA (2012-2016)
- Outstanding Teaching Assistant Award, Stanford Office of Graduate Education (2011)
- Predoctoral Fellowship, Stanford California Institute of Regenerative Medicine Training Program (2009-2012)
- Lawrence J. Henderson Undergraduate Thesis Award, Biochemical Sciences Concentration, Harvard University (2007)

- Thomas T. Hoopes Undergraduate Thesis Prize, Harvard University (2007)
- Microbial Sciences Initiative Summer Research Fellowship, Harvard University Microbial Sciences Initiative (2006)
- Phyllis Brauner Undergraduate Book Award, Northeastern Section of the American Chemical Society (2006)
- Program for Research in Science and Engineering, Harvard University (2006)
- John Harvard Scholar for Exemplary Academic Performance, Harvard University (2005-2006)
- Herchel Smith Summer Scholarship, Harvard University (2005)
- National Merit Scholarship, National Merit Scholarship Corporation (2003-2007)
- Radcliffe Fellowship Program for Undergraduate Research, Harvard University (2003)
- Harvard Book Award, Harvard Alumni Association (2002)

PROFESSIONAL EDUCATION

- Fellowship: Brigham and Women's Hospital Rheumatology Fellowship (2022) MA
- Board Certification: Rheumatology, American Board of Internal Medicine (2021)
- Board Certification: Internal Medicine, American Board of Internal Medicine (2019)
- Residency: Brigham and Women's Hospital Internal Medicine Residency (2018) MA
- Medical Education: Stanford University School of Medicine (2016) CA
- Graduate Education (PhD), Stanford University , Cancer Biology (2014)
- Undergraduate Education (AB), Harvard University , Biochemical Sciences (2007)

Teaching

STANFORD ADVISEES

Med Scholar Project Advisor

Marlee Yancey

Publications

PUBLICATIONS

- **Fibroblasts in immune responses, inflammatory diseases and therapeutic implications.** *Nature reviews. Rheumatology*
  Zou, A. E., Kongthong, S., Mueller, A. A., Brenner, M. B.
  2025

- **Wnt signaling drives stromal inflammation in inflammatory arthritis.** *bioRxiv : the preprint server for biology*
  Mueller, A. A., Zou, A. E., Marsh, L. J., Kemble, S., Nayar, S., Watts, G. F., Murphy, C. L., Taylor, E., Major, T., Gardner, D., Buckley, C. D., Wei, K., Raychaudhuri, et al
  2025

- **A PD-1highCD4+ T Cell Population With a Cytotoxic Phenotype is Associated With Interstitial Lung Disease in Systemic Sclerosis.** *ACR open rheumatology*
  Elahee, M., Mueller, A. A., Wang, R., Marks, K. E., Sasaki, T., Cao, Y., Fava, A., Dellaripa, P. F., Boin, F., Rao, D. A.
  2024; 6 (7): 429-439

- **High-dimensional immunophenotyping reveals immune cell aberrations in patients with undiagnosed inflammatory and autoimmune diseases.** *The Journal of clinical investigation*
  Mueller, A. A., Sasaki, T., Keegan, J. W., Nguyen, J. P., Griffith, A., Horisberger, A. M., Licata, T., Fieg, E., Cao, Y., Elahee, M., Marks, K. E., Simmons, D. P., Briere, et al
  2023; 133 (24)

- **Laboratory trends, hyperinflammation, and clinical outcomes for patients with a systemic rheumatic disease admitted to hospital for COVID-19: a retrospective, comparative cohort study.** *The Lancet. Rheumatology*

Hsu, T. Y., D'Silva, K. M., Patel, N. J., Wang, J., Mueller, A. A., Fu, X., Prisco, L., Martin, L., Vanni, K. M., Zaccardelli, A., Cook, C., Choi, H. K., Zhang, et al
2021; 3 (9): e638-e647

- **Protocol for assessing and predicting acute respiratory decline in hospitalized patients.** *STAR protocols*
  Crowley, C. P., Merriam, L. T., Mueller, A. A., Tamura, T., DeGrado, J. R., Haider, H., Salciccioli, J. D., Kim, E. Y.
  2021; 2 (2): 100545

- **Persistence and Evolution of SARS-CoV-2 in an Immunocompromised Host** *NEW ENGLAND JOURNAL OF MEDICINE*
  Choi, B., Choudhary, M. C., Regan, J., Sparks, J. A., Padera, R. F., Qiu, X., Solomon, I. H., Kuo, H., Boucau, J., Bowman, K., Das Adhikari, U., Winkler, M. L., Mueller, et al
  2020; 383 (23): 2291-2293

- **Inflammatory Biomarker Trends Predict Respiratory Decline in COVID-19 Patients** *CELL REPORTS MEDICINE*
  Mueller, A. A., Tamura, T., Crowley, C. P., DeGrado, J. R., Haider, H., Jezmir, J. L., Keras, G., Penn, E. H., Massaro, A. F., Kim, E. Y.
  2020; 1 (8): 100144

- **Macrophage-released ADAMTS1 promotes muscle stem cell activation.** *Nature communications*
  Du, H. n., Shih, C. H., Wosczyna, M. N., Mueller, A. A., Cho, J. n., Aggarwal, A. n., Rando, T. A., Feldman, B. J.
  2017; 8 (1): 669

- **Intronic polyadenylation of PDGFR alpha in resident stem cells attenuates muscle fibrosis** *NATURE*
  Mueller, A. A., van Velthoven, C. T., Fukumoto, K. D., Cheung, T. H., Rando, T. A.
  2016; 540 (7632): 276-?

- **Type 2 Innate Signals Stimulate Fibro/Adipogenic Progenitors to Facilitate Muscle Regeneration** *CELL*
  Heredia, J. E., Mukundan, L., Chen, F. M., Mueller, A. A., Deo, R. C., Locksley, R. M., Rando, T. A., Chawla, A.
  2013; 153 (2): 376-388

- **All's well that ends well: alternative polyadenylation and its implications for stem cell biology** *CURRENT OPINION IN CELL BIOLOGY*
  Mueller, A. A., Cheung, T. H., Rando, T. A.
  2013; 25 (2): 222-232