



## Matthew C. Baker, MD MS

Assistant Professor of Medicine (Immunology and Rheumatology)

Medicine - Immunology & Rheumatology

### CLINICAL OFFICE (PRIMARY)

- **Division of Immunology and Rheumatology Clinical Chief and Assistant Professor of Medicine**

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### Bio

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#### BIO

Dr. Baker is the Clinical Chief in the Division of Immunology and Rheumatology at Stanford University and the Co-Director of the Stanford Multidisciplinary Sarcoidosis Program. He received his bachelor's degree from Pomona College, his medical degree from Harvard Medical School, and his master's degree in Epidemiology and Clinical Research from Stanford University. He completed his Internal Medicine residency at the Massachusetts General Hospital and his Rheumatology fellowship at Stanford University. Dr. Baker has established a clinical research program that is focused on clinical trials, epidemiological studies, and bench-to-bedside translational research. He has designed and led investigator-initiated and industry sponsored clinical trials with a focus on sarcoidosis, IgG4-related disease, Sjogren's syndrome, and rheumatoid arthritis. He also utilizes large databases to study osteoarthritis, with an interest in repurposing existing drugs for the treatment of osteoarthritis.

#### CLINICAL FOCUS

- Sarcoidosis
- Cardiac sarcoidosis
- IgG4-related disease
- Sjogren's syndrome
- Osteoarthritis
- Rheumatoid Arthritis
- Rheumatology

#### ACADEMIC APPOINTMENTS

- Assistant Professor - University Medical Line, Medicine - Immunology & Rheumatology

#### ADMINISTRATIVE APPOINTMENTS

- Clinical Chief, Division of Immunology and Rheumatology, Department of Medicine, Stanford University, (2020- present)

## HONORS AND AWARDS

- Translational Research and Applied Medicine Award, Stanford University (9/1/18 - 9/1/19)
- KL2 Stanford Spectrum Mentored Career Development Award, National Institutes of Health (7/1/17 - 6/30/19)
- Scientist Development Award, Rheumatology Research Foundation (2/1/17 - 1/31/18)
- Distinguished Fellow Award, American College of Rheumatology (11/28/16)
- ACR/EULAR Exchange Program Award, American College of Rheumatology (6/12/17)
- Ruth L. Kirschstein National Research Service Award, National Institutes of Health (7/1/16 - 1/31/17)
- Bevrha Hahn Distinguished Fellow Scholarship, California Rheumatology Alliance (5/24/16)

## PROFESSIONAL EDUCATION

- Board Certification: Rheumatology, American Board of Internal Medicine (2016)
- Board Certification: Internal Medicine, American Board of Internal Medicine (2014)
- Fellowship: Stanford University Rheumatology and Immunology Fellowship (2016) CA
- Residency: Massachusetts General Hospital Internal Medicine Residency (2014) MA
- M.S., Stanford University (2019)
- M.D., Harvard Medical School (2011)
- B.A., Pomona College (2004)

## LINKS

- Stanford Multidisciplinary Sarcoidosis Program: <http://med.stanford.edu/cardiac-sarcoidosis.html>

## Research & Scholarship

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### CLINICAL TRIALS

- A Study of Inebilizumab Efficacy and Safety in IgG4- Related Disease, Recruiting
- Open Label Two-Arm Study to Evaluate Rilzabrutinib in IgG4-Related Disease Patients, Recruiting
- Zanubrutinib in Patients With IgG4-Related Disease, Recruiting
- A Crossover Study to Compare RAYOS to IR Prednisone to Improve Fatigue and Morning Symptoms for SLE, Not Recruiting
- A Study Comparing Upadacitinib (ABT-494) to Placebo in Participants With Active Psoriatic Arthritis Who Have a History of Inadequate Response to at Least One Biologic Disease Modifying Anti-Rheumatic Drug (bDMARD), Not Recruiting
- A Study to Assess the Efficacy and Safety of Namilumab in Participants With Chronic Pulmonary Sarcoidosis, Not Recruiting
- A Study to Assess the Safety, Tolerability, and Efficacy of Namilumab in Participants With Active Cardiac Sarcoidosis, Not Recruiting
- Anti-BTLA Agonist Therapy in Subjects With Primary Sjogren's Syndrome, Not Recruiting
- BAFF/IL-17 Bispecific Antibody Treatment in Subjects With Primary Sjogren's Syndrome, Not Recruiting
- Sarilumab in Patients With Glucocorticoid-Dependent Sarcoidosis, Not Recruiting
- Study to Evaluate Safety, Tolerability, and Efficacy of GS-5718 in Participants With Active Rheumatoid Arthritis Who Have an Inadequate Response to Disease-modifying Antirheumatic Drug(s) (bDMARDs) Treatment, Not Recruiting
- Study to Evaluate the Safety and Efficacy of Filgotinib and Lanraplenib in Adults With Lupus Membranous Nephropathy (LMN), Not Recruiting

### LAB AFFILIATIONS

- William Robinson, Robinson Lab (7/1/2015)

## Publications

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### PUBLICATIONS

- **A double-blind, placebo-controlled, randomized withdrawal trial of sarilumab for the treatment of glucocorticoid-dependent sarcoidosis.** *Rheumatology (Oxford, England)*  
Baker, M. C., Horomanski, A., Wang, Y., Yuhan, L., Parsafar, S., Fairchild, R., Mooney, J. J., Raj, R., Witteles, R., Genovese, M. C.  
2023
- **A Randomized, Double-Blind, Sham-Controlled, Clinical Trial of Auricular Vagus Nerve Stimulation for the Treatment of Active Rheumatoid Arthritis.** *Arthritis & rheumatology (Hoboken, N.J.)*  
Baker, M. C., Kavanagh, S., Cohen, S., Matsumoto, A. K., Dikranian, A., Tesser, J., Kivitz, A., Alataris, K., Genovese, M. C.  
2023
- **Increased risk of osteoarthritis in patients with atopic disease.** *Annals of the rheumatic diseases*  
Baker, M. C., Sheth, K., Lu, R., Lu, D., von Kaepler, E. P., Bhat, A., Felson, D. T., Robinson, W. H.  
2023
- **Current and future advances in practice: IgG4-related disease.** *Rheumatology advances in practice*  
Wallace, Z. S., Katz, G., Hernandez-Barco, Y. G., Baker, M. C.  
2024; 8 (2): rkae020
- **Methotrexate in Cardiac Sarcoidosis: Absence of Evidence Is Not Evidence of Absence.** *JACC. Cardiovascular imaging*  
Yee, A. M., Baker, M. C., Frame, E. W., Galloway, J., Korsten, P.  
2024; 17 (4): 465
- **IL-6 receptor inhibition and risk of sarcoidosis: a Mendelian randomization study.** *Rheumatology (Oxford, England)*  
Zhao, S. S., Baker, M. C., Galloway, J. B.  
2023
- **Genetic association between atopic disease and osteoarthritis.** *Osteoarthritis and cartilage*  
Baker, M. C., Robinson, W. H., Ostrom, Q.  
2023
- **Reply.** *Arthritis & rheumatology (Hoboken, N.J.)*  
Baker, M. C., Alataris, K., Genovese, M. C.  
2023
- **Evolution and impact of a dedicated ultrasound clinic on clinical rheumatology practice at an academic medical center.** *Seminars in arthritis and rheumatism*  
Fairchild, R. M., Deluna, M. D., Golovko, V., Mar, D. A., Baker, M. C., Nishio, J., Horomanski, A. L.  
2023; 63: 152276
- **Leukotriene Inhibitors Effect on Post-Traumatic Osteoarthritis: A RealWorld Evidence Comparative Effectiveness Study**  
Jafarzadeh, S., Baker, M., Peloquin, C. E., Robinson, W. H., Felson, D.  
WILEY.2023: 271-272
- **Biologics Initiation in Rheumatoid Arthritis by Race and Ethnicity: Results From a Randomized Survey Study.** *ACR open rheumatology*  
Simard, J. F., Lu, R., Falasinnu, T. O., Baker, M. C., Hawa, S., Deluna, M. D., Horomanski, A., Fairchild, R. M.  
2023
- **Sarcoidosis rates in BCG-vaccinated and unvaccinated young adults: A natural experiment using Danish registers.** *Seminars in arthritis and rheumatism*  
Baker, M. C., Vágó, E., Tamang, S., Horváth-Puhó, E., Sørensen, H. T.  
2023; 60: 152205
- **Development of Osteoarthritis in Adults With Type 2 Diabetes Treated With Metformin vs a Sulfonylurea.** *JAMA network open*  
Baker, M. C., Sheth, K., Liu, Y., Lu, D., Lu, R., Robinson, W. H.  
2023; 6 (3): e233646

- **Incidence of Interstitial Lung Disease in Patients With Rheumatoid Arthritis Treated With Biologic and Targeted Synthetic Disease-Modifying Antirheumatic Drugs.** *JAMA network open*  
Baker, M. C., Liu, Y., Lu, R., Lin, J., Melehani, J., Robinson, W. H.  
2023; 6 (3): e233640
- **MULTI-SPECIALTY COLLABORATION IN DEVELOPMENT OF GUIDELINES FOR MANAGEMENT OF NEUROLOGICAL MANIFESTATIONS OF SJOGREN'S DISEASE**  
Fox, R., Deboo, A., Hammitt, K. M., Baker, M. C., Bloch, D., Danielides, S., De Sousa, E., Goodman, B., Mandel, S., Noaiseh, G., Pavlakis, P. P., Sarka, G., Varadhachary, et al  
CLINICAL & EXPER RHEUMATOLOGY.2022: 77-78
- **The Positive Predictive Value of a Very High Serum IgG4 Concentration for the Diagnosis of IgG4-Related Disease.** *The Journal of rheumatology*  
Baker, M. C., Cook, C., Fu, X., Perugino, C. A., Stone, J. H., Wallace, Z. S.  
2022
- **The Third Dose Is the Charm: Effective Cellular and Humoral Immune Responses to Third COVID-19 Vaccine Doses in Immunosuppressed Nonresponders.** *The Journal of rheumatology*  
Kuswanto, W., Baker, M. C.  
2022
- **Sarcoidosis incidence after mTOR inhibitor treatment.** *Seminars in arthritis and rheumatism*  
Baker, M. C., Vago, E., Liu, Y., Lu, R., Tamang, S., Horvath-Puho, E., Sorensen, H. T.  
2022; 57: 152102
- **Sarcoidosis in patients after solid organ transplantation treated with mtor inhibitors versus calcineurin inhibitors**  
Vago, E. K., Baker, M. C., Tamang, S., Sorensen, H., Horvath-Puho, E.  
WILEY.2022: 263-264
- **Sarcoidosis Incidence After mTOR Inhibitor Treatment**  
Baker, M., Vago, E., Liu, Y., Lu, R., Tamang, S., Horvath-Puho, E., Sorensen, H.  
WILEY.2022: 254-256
- **Sarcoidosis Rates in BCG-Vaccinated and Unvaccinated Young Adults: A Danish Register-Based Study**  
Baker, M., Vago, E., Tamang, S., Horvath-Puho, E., Sorensen, H.  
WILEY.2022: 2207-2208
- **Reduction in Rheumatoid Arthritis-Associated Interstitial Lung Disease Risk in Patients Treated with Tofacitinib**  
Baker, M., Liu, Y., Lu, R., Lin, J., Melehani, J., Robinson, W.  
WILEY.2022: 4476-4478
- **Antihistamine Use and Structural Progression of Knee OA: A Post-Hoc Analysis of Two Phase 3 Clinical Trials**  
Bihlet, A., Miller, C., Byrjalsen, I., Karsdal, M., Andersen, J., Rao, T., Baker, M.  
WILEY.2022: 3742-3743
- **Preparing for the next pandemic via transfer learning from existing diseases with hierarchical multi-modal BERT: a study on COVID-19 outcome prediction.** *Scientific reports*  
Agarwal, K., Choudhury, S., Tipirneni, S., Mukherjee, P., Ham, C., Tamang, S., Baker, M., Tang, S., Kocaman, V., Gevaert, O., Rallo, R., Reddy, C. K.  
2022; 12 (1): 10748
- **Prevalence of autoimmunity and atopy in US adults with glioblastoma and meningioma.** *Neuro-oncology*  
Ostrom, Q. T., Lu, D., Lu, R., Baker, M. C.  
2022
- **Development of a natural language processing system for extracting rheumatoid arthritis outcomes from clinical notes using the national RISE registry.** *Arthritis care & research*  
Humbert-Droz, M., Izadi, Z., Schmajak, G., Gianfrancesco, M., Baker, M. C., Yazdany, J., Tamang, S.  
2022
- **Increased double-negative alpha beta plus T cells reveal adult-onset autoimmune lymphoproliferative syndrome in a patient with IgG4-related disease** *HAEMATOLOGICA*  
Brar, N., Spinner, M. A., Baker, M. C., Advani, R. H., Natkunam, Y., Lewis, D. B., Silva, O.

2022; 107 (1): 347-350

- **Effective Viral Vector SARS-CoV-2 Booster Vaccination in a Patient with Rheumatoid Arthritis after Initial Ineffective mRNA Vaccine Response.** *Arthritis & rheumatology (Hoboken, N.J.)*  
Baker, M. C., Mallajosyula, V., Davis, M. M., Boyd, S. D., Nadeau, K. C., Robinson, W. H.  
2021
- **Disease Associations with Very High Serum IgG4 Concentrations: A Retrospective Multi-Center Study**  
Baker, M., Cook, C., Fu, X., Perugino, C., Stone, J., Wallace, Z.  
WILEY.2021: 2290-2292
- **Metformin Use Reduces the Risk of Developing Osteoarthritis: A Propensity Score Matching Study**  
Sheth, K., Lu, D., Lu, R., Robinson, W., Baker, M.  
WILEY.2021: 994-996
- **Osteoarthritis Risk Is Increased in Patients with Atopic Disease**  
Baker, M., Sheth, K., Lu, R., Lu, D., von Kaeppler, E., Bhat, A., Felson, D., Robinson, W.  
WILEY.2021: 2351-2353
- **Comparison of Adverse Events Among Home- vs Facility-Administered Biologic Infusions, 2007-2017.** *JAMA network open*  
Baker, M. C., Weng, Y., Fairchild, R., Ahuja, N., Rohatgi, N.  
2021; 4 (6): e2110268
- **IMMUNE-MEDIATED BASIS FOR A PHASE 2A CLINICAL STUDY COMPARING RILZABRUTINIB VS GLUCOCORTICOIDS IN RITUXIMAB-REFRACTORY PATIENTS WITH IGG4-RELATED DISEASE**  
Long, L., Baker, M., Carruthers, M., Meysami, A., Spiera, R., Reddy, M., Kavanagh, M., Francesco, M., Langrish, C., Neale, A., Arora, P., Stone, J. H.  
BMJ PUBLISHING GROUP.2021: 1406
- **Neutralizing Anti-Interleukin-1 Receptor-Antagonist Autoantibodies Induce Inflammatory and Fibrotic Mediators in IgG4-Related Disease.** *The Journal of allergy and clinical immunology*  
Jarrell, J. A., Baker, M. C., Perugino, C. A., Liu, H., Bloom, M. S., Maehara, T., Wong, H. H., Lanz, T., Adamska, J. Z., Kongpachith, S., Sokolove, J., Stone, J. H., Pillai, et al  
2021
- **Non-invasive vagus nerve stimulation for rheumatoid arthritis: a proof-of-concept study.** *The Lancet. Rheumatology*  
Marsal, S., Corominas, H., de Agustín, J. J., Pérez-García, C., López-Lasanta, M., Borrell, H., Reina, D., Sanmartí, R., Narváez, J., Franco-Jarava, C., Peterfy, C., Narváez, J. A., Sharma, et al  
2021; 3 (4): e262-e269
- **Prevalence and significance of pulmonary disease on lung ultrasonography in outpatients with SARS-CoV-2 infection.** *BMJ open respiratory research*  
Fairchild, R. M., Horomanski, A., Mar, D. A., Triant, G. R., Lu, R., Lu, D., Guo, H. H., Baker, M. C.  
2021; 8 (1)
- **Non-invasive Vagus Nerve Stimulation Improves Signs and Symptoms of Rheumatoid Arthritis: Results of a Pilot Study**  
Marsal, S., Corominas, H., De Agustin De Oro, J., Perez Garcia, C., Lopez Lasanta, M., Borrell, H., Reina, D., Sanmarti, R., Javier Narvaez, F., Franco-Jarava, C., Peterfy, C., Antonio Narvaez, J., Sharma, et al  
WILEY.2020
- **PILOT CLINICAL STUDY OF A NON-INVASIVE AURICULAR VAGUS NERVE STIMULATION DEVICE IN PATIENTS WITH RHEUMATOID ARTHRITIS**  
Marsal, S., Corominas, H., Lopez Lasanta, M., Reina-Sanz, D., Perez-Garcia, C., Borrell Panos, H., Sanmarti, R., Narvaez, J., Franco-Jarava, C., Narvaez, J. A., De Agustin, J. J., Sharma, V., Alataris, et al  
BMJ PUBLISHING GROUP.2020: 999-1000
- **CD52 Is Elevated on B cells of SLE Patients and Regulates B Cell Function.** *Frontiers in immunology*  
Bhamidipati, K. n., Silberstein, J. L., Chaichian, Y. n., Baker, M. C., Lanz, T. V., Zia, A. n., Rasheed, Y. S., Cochran, J. R., Robinson, W. H.  
2020; 11: 626820
- **A Mortality Risk Score Model for Clinically Amyopathic Dermatomyositis-Associated Interstitial Lung Disease: Will It Have the Necessary "FLAIR" to Improve Clinical Outcomes?** *Chest*  
Baker, M. C., Chung, L. n., Fiorentino, D. F.

2020; 158 (4): 1307–9

- **Phase II, randomised, double-blind, multicentre study evaluating the safety and efficacy of filgotinib and lanraplenib in patients with lupus membranous nephropathy.** *RMD open*  
Baker, M. n., Chaichian, Y. n., Genovese, M. n., Derebail, V. n., Rao, P. n., Chatham, W. n., Bubb, M. n., Lim, S. n., Hajian, H. n., Gurtovaya, O. n., Patel, U. n., Tumlin, J. n.  
2020; 6 (3)
- **Osteoarthritis risk is reduced after treatment with ticagrelor compared to clopidogrel: a propensity score matching analysis.** *Arthritis & rheumatology (Hoboken, N.J.)*  
Baker, M. C., Weng, Y. n., William, R. H., Ahuja, N. n., Rohatgi, N. n.  
2020
- **Novel Approach to the Treatment of Cardiac Sarcoidosis with TNF-alpha Inhibition**  
Baker, M., Sheth, K., Simard, J., Shoor, S., Genovese, M.  
WILEY.2019
- **Dermatomyositis Associated With a Skull Base Chondrosarcoma** *JCR-JOURNAL OF CLINICAL RHEUMATOLOGY*  
Baker, M. C., Smith, G. P., Miloslavsky, E. M.  
2019; 25 (4): E50–E53
- **TNF-alpha inhibition for the treatment of cardiac sarcoidosis.** *Seminars in arthritis and rheumatism*  
Baker, M. C., Sheth, K. n., Witteles, R. n., Genovese, M. C., Shoor, S. n., Simard, J. F.  
2019
- **INVESTIGATING NOVEL AUTOANTIBODIES IN PATIENTS WITH GRANULOMATOSIS WITH POLYANGIITIS**  
Baker, M. C., Lingampalli, N., Robinson, W.  
BMJ PUBLISHING GROUP.2017: 774-775
- **Security and Privacy Qualities of Medical Devices: An Analysis of FDA Postmarket Surveillance** *PLOS ONE*  
Kramer, D. B., Baker, M., Ransford, B., Molina-Markham, A., Stewart, Q., Fu, K., Reynolds, M. R.  
2012; 7 (7)
- **Common Variable Immunodeficiency: Massachusetts General Hospital Cohort Outcomes and Analysis**  
Yonker, L. M., Permaul, P., Baker, M. C., Hesterberg, P., Iyengar, R., Peled, J. U., Walter, J., Castells, M. C., CVID Working Grp  
SPRINGER/PLENUM PUBLISHERS.2012: 374
- **Enhancement of DNA tumor vaccine efficacy by gene gun-mediated codelivery of threshold amounts of plasmid-encoded helper antigen** *BLOOD*  
Leitner, W. W., Baker, M. C., Berenberg, T. L., Lu, M. C., Yannie, P. J., Udey, M. C.  
2009; 113 (1): 37-45

## PRESENTATIONS

- IgG4-Related Disease: A Broad Overview and Current Concepts - Allergy, Asthma & Immunology Foundation of Northern California Annual Symposium (April 28, 2018)
- An Introduction to Autoimmunity and an Overview of Common Rheumatic Diseases - Stanford Center for Clinical Research, Stanford University (August 4, 2018)
- A multimodal approach to evaluate new-onset inflammatory arthritis in patients receiving anti-PD-1/PD-L1 immunotherapy - Stanford Translational Research and Applied Medicine Annual Research Symposium (6/11/2019)
- Navigating the First Years Fresh Out of Fellowship - American College of Rheumatology Annual Meeting (11/11/2019)
- Cardiac Sarcoidosis: A Foundation for Sarcoidosis Research Webinar - Foundation for Sarcoidosis Research (February 19, 2021)
- Sarcoidosis, Immunosuppressive Treatments, and the COVID-19 Vaccine - Foundation for Sarcoidosis Research Virtual Patient Education Summit 2021 (6/13/2021)
- Sarcoidosis Research at Stanford University - Foundation for Sarcoidosis Research Virtual Patient Education Summit 2022 (7/31/2022)
- Sarcoidosis - West Hills Hospital (6/1/2022)
- Repurposing Drugs for Osteoarthritis - Joint Action Podcast (May 28, 2023)