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**Professional Experience:**

**Amgen, Inc. 2004 - Present**

Executive Medical Director - US Medical Organization !  
US Inflammation and Nephrology, Therapeutic Area Head !  
2015 – Present !

Enbrel Global Development Leader !  
2013 - Present !

Executive Medical Director - Medical Sciences !  
Early Development Therapeutic Area Head, Inflammation !  
2011 - 2013 !

Associate to Executive Medical Director - Medical Sciences !  
Executive Medical Director - Group leader in Rheumatology (2007-2011) !  
Medical Director (2006-2007), Associate Director (2004-2006) !

**Pfizer, Inc. 2002-2004**

Associate Director - Clinical R&D, Inflammation Early Development  
Early Clinical Leader (2002 – 2004)

**Education/Training:**

1998-2002 !            Ph.D. (Immunology), Biomedical Graduate School  
                                 University of Pennsylvania, Philadelphia, PA

1995-2001 !            Fellow, Division of Rheumatology (1997-2001)  
                                 Intern/Resident, Department of Medicine (1995-1997)  
                                 University of Pennsylvania, Philadelphia PA

1991-1995 !            M.D.    University of Pennsylvania, Philadelphia, PA

1986-1990              B.A. !    Harvard University, Cambridge, MA  
                                 Magna Cum Laude (Biology)

**Clinical/Teaching Experience:**

2007-2014 !            Assistant Clinical Professor of Medicine (Voluntary Track)  
                                 UCLA Department of Medicine, Los Angeles, CA

2006-2014 !            Attending Staff Physician (Volunteer)  
                                 UCLA-Olive View Medical Center, Sylmar, CA

2004 Adjunct Clinical Assistant Professor  
University of Michigan, Ann Arbor, MI

2001-2002 ! Instructor, Division of Rheumatology  
University of Pennsylvania, Philadelphia, PA

**Certification:**

**Board:** & Rheumatology (2000, 2010)  
Internal Medicine (1998)

**Licensure:** & California, Michigan, Connecticut, Pennsylvania

**Memberships and Societies:**

American College of Rheumatology

**Professional activities:**

Industry Representative to the FDA Arthritis Advisory Committee (2016-Present)

Foundations of the NIH Biomarkers Consortium Inflammation and Immunology Steering Committee (2016-Present)

**Awards and Honors:**

National Institutes of Health Mentored Clinical Scientist Development Award (K08).  
Mechanism of Immature B Cell Antigen Presentation Defects. 2001.

Arthritis Foundation Physician–Scientist Development Award. Development of a Model  
of Treatment of Systemic Lupus Erythematosus in Mice by Stem Cell Transfer. 1998-  
2002.

Stanley E. Bradley Fellow Research Award, Department of Medicine, University of  
Pennsylvania, 2001

American College of Rheumatology Fellow Award, 2000

**Publications:**

Cheng L. Amoura Z. Cheah B. Hiepe F. Sullivan B. Zhou L. Arnold G. Tsuji W. Merrill J.  
**Chung J.** A randomized, Double-Blind, Parallel-Group, Placebo-Controlled, Multiple-  
Dose Study to Evaluate AMG 557 in Patients With Systemic Lupus Erythematosus and  
Active Lupus Arthritis, *Arthritis and Rheumatology*, 2018, 70:1071.

Mease P. Gladman D. Samad A. Coates L. Liu L. Aras G. Collier D. **Chung J.** Design  
and Rationale of the Study of Etanercept And Methotrexate in Combination or as  
Monotherapy in Subjects with Psoriatic Arthritis (SEAM-PsA), *RMD Open*, 2017;  
4:e000606.

Curtis J. Trivedi M. Haraoui B. Emery P. Park G. Collier D. Aras G. **Chung J.** Defining  
and Characterizing Sustained Remission in Patients With Rheumatoid Arthritis, *Clinical  
Rheumatology*, 2017. <https://doi.org/10.1007/s10067-017-3923-z>

Boedigheimer M. Martin D. Amoura Z. Sanchez-Guerrero J. Romero-Diaz J. Kivitz A. Aranow C. Chan T. Chong Y. Chiu K. Wang C. Sohn W. Arnold G. Damore M. Welcher A. Sullivan B. Kotzin B. **Chung J.** Safety, Pharmacokinetics, and Pharmacodynamics of AMG 811, an Anti-Interferon- $\gamma$  Monoclonal Antibody, in SLE Subjects Without or With Lupus Nephritis, *Lupus Science & Medicine*, 2017;4:e000226.

Accortt N. **Chung J.** Bonafede M. Limone B. Mannino D. Retrospective analysis to describe associations between tumor necrosis factor alpha inhibitors and COPD-related hospitalizations, *International Journal of COPD*, 2017, 12:2085-2094.

Bagel J. Tyring S. Rice K. Collier D. Kricorian G. **Chung J.** Iles J. Stolshek B. Kaliyaperumal A. Papp K. Open-label Study of Etanercept Treatment in Patients with Moderate to Severe Plaque Psoriasis Who Lost a Satisfactory Response to Adalimumab, *British Journal of Dermatology*, 2017

Fleischmann R. Tongbram V. van Vollenhoven R. Tang D. **Chung J.** Collier D. Urs S. Ndirangu K. Wells G. Pope J. Systematic Review and Network Meta-Analysis of the Efficacy of Tumor Necrosis Factor Inhibitor-Methotrexate Combination Therapy Versus Triple Therapy in Rheumatoid Arthritis. *Rheumatic & Musculoskeletal Diseases Open*, 2017, 3:e000371.

Werth V. Fiorentino D. Sullivan B. Boedigheimer M. Chiu K. Wang C. Arnold G. Damore M. Bigler J. Welcher A. Russell C. Martin D. **Chung J.** Evaluation of Pharmacodynamics, Safety, and Clinical Efficacy of AMG 811, a Human Anti-Interferon- $\gamma$  Antibody, In Patients with Discoid Lupus Erythematosus, *Arthritis and Rheumatology*, 2017, 69:1028.

Sullivan B. Tsuji W. Kivitz A. Peng J. Arnold G. Boedigheimer M. Chiu K. Green C. Kaliyaperumal A. Wang C. Ferbas J. **Chung J.** ICOSL Blockade Leads to Selective Inhibition of Anti-KLH IgG Responses in Subjects with Systemic Lupus Erythematosus. *Lupus Science & Medicine*, 2016, 3:e000146.

Welcher A. Boedigheimer M. Kivitz A. Amoura Z. Buyon J. Rudinskaya A. Latinis K. Chiu K. Oliner K. Damore M. Arnold G. Sohn W. Chirmule N. Goyal L. Banfield C. **Chung J.** Blockade of interferon-gamma (IFN- $\gamma$ ) normalizes IFN regulated gene expression and serum CXCL10 (IP-10) in subjects with systemic lupus erythematosus (SLE), *Arthritis and Rheumatology* 2015.67:2713.

Hobbs K. Deodhar A. Wang B. Bitman B. Nussbaum J. **Chung J.** Collier D. Randomized, Double-Blind, Placebo-Controlled Study to Evaluate the Efficacy and Safety of Etanercept in Patients With Moderately Active Rheumatoid Arthritis Despite DMARD Therapy. *SpringerPlus*, 2015, 4:113.

Martin D, Churchill M, Flores-Suarez LF, Cardiel M, Wallace D, Martin R, Phillips K, Kaine J, Dong H, Salinger D, Stevens E, Russell C, **Chung J.** A phase Ib multiple ascending dose study evaluating safety, pharmacokinetics, and early clinical response of brodalumab, a human anti-interleukin 17 receptor (IL-17R) antibody, in methotrexate-resistant rheumatoid arthritis. *Arthritis Research & Therapy*, 2013, 15:R164

Jordan S, **Chung J**, Distler O. Preclinical and translational research to discover potentially effective antifibrotic therapies in systemic sclerosis. *Current Opinion in Rheumatology*, 2013, 25(6):679-685.

Ferbas J, Belouski S, Horner M, Kaliyaperumal A, Chen L, Boyce M, Colaço C, McHugh N, Boyce V, Nicholl R, Siu G, **Chung J**. A novel assay to measure B cell responses to keyhole limpet hemocyanin vaccination in healthy volunteers and subjects with Systemic Lupus Erythematosus. *Br J Clin Pharmacol*. 2013, 76(2):188-202.

Belouski S. Wallace D. Weisman M. Ishimori M. Hendricks L. Zack D. Vincent M. Rasmussen E. Ferbas J. **Chung J**. Sample Stability and Variability of B Cell Subsets in Blood from Healthy Subjects and Patients with Systemic Lupus Erythematosus. *Cytometry: Part B - Clinical Cytometry*, 2009, 78B, 49-58.

Metz D. Mohn D. Zhang M. Horan T. Kim H. Deshpande R. Jacobsen F. Shen W. Zhang L. Doellgast G. Narayanan A. Dalphin M. Kuchimanchi K. Horner M. **Chung J**. Siu G. Defining dose-response relationships in the therapeutic blockade of B7RP-1-dependent immune responses. *European Journal of Pharmacology*, 2009, 610, 110-118.

Hu Y. Metz D. **Chung J**. Siu G. and Zhang M. B7RP-1 blockade ameliorates autoimmunity through regulation of follicular helper T (T<sub>FH</sub>) cells. *Journal of Immunology*, 2009, 182(3), 1421-1428. !

Kawabata T. **Chung J**. Immunopharmacology. In: Brody's Human Pharmacology: ! Molecular to Clinical. Chapter 53, Minneman J. Wecker L ed., Elsevier Mosby, 2005, ! pp.681-699. !

**Chung J**. Wells A. Adler S. Turka L. Monroe J. Incomplete activation of CD4 T cells by antigen-presenting transitional immature B cells: implications for peripheral B and T cell ! responsiveness. *Journal of Immunology*, August 2003, 171(4), 1758-67. !

Monroe J. Bannish G. Fuentes-Panana EM. King LB. Sandel PC. **Chung J**. Sater R. ! Positive and negative selection during B lymphocyte development, ! *Immunologic Research*, 2003, 27(2-3), 427-42. !

**Chung J**. Silverman M. Monroe J. Transitional B cells: step by step towards immune ! competence. (Review) *Trends in Immunology*, June 2003, vol 24(6), 342-348. !

Kolasinski S. **Chung J**. Albert D. What Do We Know About Membranous Nephropathy? An Analytic Review. *Arthritis Care and Research*, August 2002, vol ! 47(4), 450-455. !

**Chung J**. Albert D. Osteosclerotic Myeloma Associated With POEMS Syndrome. ! *Arthritis and Rheumatism*, July 2002, vol 46(7), 1968. !

Hsia E. **Chung J**. Schwartz S. Albert D. Cost-Effectiveness Analysis of the Lyme ! Disease Vaccine. *Arthritis and Rheumatism*, June 2002, vol 46(6), 1651-1660. !

**Chung J.** Sater R. Fields M. Erikson J. Monroe J. CD23 Defines Two Distinct Subsets of Immature B Cells Which Differ in Their Responses to T Cell Help Signals. *International Immunology*, February 2002, vol 14, 157-166.

**Chung J.** Baumeister M. Monroe J. Differential Sequestration of B Cell Antigen Receptor in Mature and Immature B Cells into Glycosphingolipid Enriched Domains. *Journal of Immunology*, January 2001, Vol 166, 736-740.

**Chung J.** Armstrong K. Schwartz S. Albert D. Cost-effectiveness of Prophylaxis Against *Pneumocystis Carinii* Pneumonia in Patients With Wegener's Granulomatosis Undergoing Immunosuppressive Therapy. *Arthritis and Rheumatism*, August 2000, vol 43(8), 1841-1848.

**Chung J.** Feldman H. Problems With Interpreting Results of PSA [letter; comment]. *Journal of General Internal Medicine*, March 1997, Vol 12(3):200, discussion 200-201

**Selected Abstracts:**

Coates L. Strand V. Wilson H. Stolshek B. Samad A. **Chung J.** Gladman D. Mease P. Measurement Properties of the Minimal Disease Activity Criteria for Psoriatic Arthritis, EULAR 2018.

Cheng L. Amoura Z. Cheah B. Hiepe F. Sullivan B. Zhou L. Arnold G. Tsuji W. Merrill J. **Chung J.** Clinical and Biologic Effects of ICOSL Blockade by AMG 557 In Subjects With Lupus Arthritis, EULAR 2017.

Papp K. Tying S. Stolshek B. Rice K. Collier D. Kricorian G. **Chung J.** Iles J. Kaliyaperumal A. Bagel J. Patient Reported Outcomes With Etanercept Therapy in Patients With Plaque Psoriasis Who Lost Response to Adalimumab, AAD 2017.

Bagel J. Tying S. Rice K. Collier D. Kricorian G. **Chung J.** Iles J. Kaliyaperumal A. Papp K. Efficacy and Safety of Etanercept in Patients With Plaque Psoriasis Who Lost Response to Adalimumab, AAD Summer Meeting 2016.

Fleischmann R. Pope J. Tongbram V. Tang D. **Chung J.** Collier D. Urs S. Ndirangu K. Wells G. van Vollenhoven R. A Systematic Review and Network Meta-Analysis on the Efficacy of Tumor Necrosis Factor Inhibitor-Methotrexate Combination Therapy Versus Triple Therapy in *Methotrexate Inadequate Responders* with Rheumatoid Arthritis, ACR 2015.

Fleischmann R. Pope J. Tongbram V. Tang D. **Chung J.** Collier D. Urs S. Ndirangu K. Wells G. van Vollenhoven R. A Systematic Review and Network Meta-Analysis on the Efficacy of Tumor Necrosis Factor Inhibitor-Methotrexate Combination Therapy Versus Triple Therapy in *Methotrexate-Naïve Patients* with Rheumatoid Arthritis, ACR 2015.

Martin D. Amoura Z. Romero-Diaz J. Chong Y. Sanchez-Guerrero J. Chan T. Arnold G. Damore M. Sohn W. Chirmule N. Chiu K. Wang C. Boedigheimer M. Sullivan B. Welcher A. Kotzin B. **Chung J.** A multiple dose study of AMG 811 (anti-IFN-gamma) in subjects with Systemic Lupus Erythematosus and active nephritis, EULAR 2015.

Bigler J. Kerkof K. Hu X. Timour M. Kricorian G. Klekotka P. Patterson S. Boedigheimer M. Newhall K. Sullivan B. Tsuji W. Nirula A. **Chung J.** Kotzin B. Krueger J. Martin D. Russell C. Network Analysis of Psoriasis Cytokine Pathways after Treatment with Four Different Biological Therapeutics or Candidates, Genes to Clinic 2014.

Russell C. Hu R. Bigler J. Boedigheimer M. Sullivan B. Kricorian G. Klekotka P. **Chung J.** Newhall K. Martin D. Dissection of Inflammatory Pathways and Molecular Trajectories of Multiple Therapeutics, ISDS 2014.

Sullivan B. Guzman R. Russell C. Ma C. Arnold G. Boedigheimer M. **Chung J.** Werth V. Martin D. Molecular, Cellular and Histopathologic Assessment of Baseline Characteristics of Sixteen Subjects with Discoid Lupus Erythematosus Prior to Treatment with AMG 811 (anti-IFN $\gamma$ ), ACR 2014.

Papp K. Rice K. **Chung J.** Collier D. Kricorian G. Efficacy of Etanercept Following Step-Down Dosing Compared With Continued High-Dose Regimen in Patients with Plaque Psoriasis. EADV 2014.

Hobbs K. **Chung J.** Bitman B. Wang B. Nussbaum J. Collier D. Effect of Etanercept (ETN) on Inducing Low Disease Activity (LDA) in Patients With Moderately Active Rheumatoid Arthritis (RA) Despite Disease-Modifying Antirheumatic Drug (DMARD) Therapy. EULAR 2014.

Werth V, Fiorentino D, Chen S, Hansen C, Fivenson D, Cohen S, Welcher A, Boedigheimer M, Arnold G, Zoog S, Wang C, **Chung J.** Sullivan B, Martin D. A Phase I Single-Dose Crossover Study To Evaluate The Safety, Tolerability, Pharmacokinetics, Pharmacodynamics, and Clinical Efficacy Of AMG 811 (anti-IFN-gamma) In Subjects With Discoid Lupus Erythematosus. ACR Annual Meeting 2013.

Martin D, Welcher A, Boedigheimer M, Amoura Z, Kivitz A, Buyon J, Sanchez-Guerrero J, Romero-Diaz J, Rudinskaya A, Latinis K, Cohen S, Aranow C, Arnold G, Damore M, Sohn W, Chiu K, Wang C, Chirmule N, Sullivan B, **Chung J.** AMG 811 (anti-IFN-gamma) Treatment Leads To a Reduction In The Whole Blood IFN-Signature and Serum CXCL10 In Subjects With Systemic Lupus Erythematosus: Results Of Two Phase I Studies. ACR Annual Meeting 2013.

Sullivan B, Tsuji W, Chindalore V, Geppert T, Rudinskaya A, Pardo P, Kivitz A, Neuwelt M, Mackay J, Looney J, Thorne C, Andrew M, Arnold G, Boedigheimer M, Chiu K, Green C, Kaliyaperumal A, Wang C, Welcher A, **Chung J.** Administration Of AMG 557, a Human Anti-B7RP-1 (ICOSL) Antibody, Leads To The Selective Inhibition Of Anti-KLH IgG Responses In Subjects With SLE: Results Of a Phase 1 Randomized, Double-Blind, Placebo-Controlled, Sequential, Rising, Multiple-Dose Study. ACR Annual Meeting, 2013.

Weinblatt M, Bathon J, Hooper M, Bitman B, Yang Y, Collier D, **Chung J.** Genovese M. Disease Activity in Moderate and Severe Rheumatoid Arthritis at Discontinuation in 10-year Open-Label Extension Studies with Etanercept. ACR Annual Meeting, 2013.

Martin D. Welcher A. Boedigheimer M. Kivitz A. Amoura Z. Buyon J. Rudinskaya A. Latinis K. Banfield C. Arnold G. Dammore M. Sohn W. Chiu K. Chirmule N. Goyal L. Sullivan B. **Chung J.** Safety, Pharmacokinetics and Pharmacodynamics of AMG 811

(anti-IFN-gamma): Results of a Phase I Single Dose Study in Subjects with Systemic Lupus Erythematosus, The 10<sup>th</sup> International Congress on SLE, April 2013.

Sullivan B. Tsuji W. Kivitz A. Weisman M. Wallace D. Boyce M. Mackay M. Looney R. Cohen S. Andrew M. Arnold G. Boedigheimer M. Chiu K. Ferbas J. Green C. Kaliyaperumal A. Prince P. Thomas J. Twehues L. Wang C. Welcher A. **Chung J.** Safety, Pharmacokinetics and Pharmacodynamics of AMG 557 (anti-B7RP-1) in Subjects with Systemic Lupus Erythematosus: Results of a Phase I multicenter, Randomized, Double-blind, Placebo-controlled, Sequential Rising Single-dose Study, The 10<sup>th</sup> International Congress on SLE, April 2013.

Martin D. Kerkof K. Chen G. Rees W. Leshinsky N. **Chung J.** Rand H. Williams G. Stevens E. Russell C. Blood-based Biomarkers in a Healthy Volunteer Study of AMG 827 Enable Assessment of Target Coverage and Functional Blockade of the Human IL-17 Receptor, FOCIS, June 2012

Green C. Evangelista C. Cole S. Gu J. Belouski S. Zoog S. Ferbas J. **Chung J.** Sullivan B. Development and Validation of a Whole Blood 6-color Immunophenotyping Assay to Monitor B and T Cell Subsets in Systemic Lupus Erythematosus (SLE) Patients, Keystone, April 2011.

Sullivan B. Green C. Zhang M. Abbott C. Belouski S. Thomas J. Gorski K. Siu G. **Chung J.** Ferbas J. A flow cytometric receptor occupancy assay demonstrates dose-dependent blockade of B7RP-1 by AMG 557 on circulating B cells from SLE subjects, ACR 2010 and Keystone, April 2011.

Kotzin B. **Chung J.** Pitfalls in the Development of New Lupus Drugs, 9<sup>th</sup> International Congress on SLE, 2010.

Ferbas J. Belouski S. Kaliyaperumal A. Jawa V. Dalphin M. Young F. Boyce M. Colaço B. McHugh N. Boyce V. Nicholl R. Siu G. **Chung J.** Assessment of KLH specific T and B cell responses in healthy volunteers (HV) and in subjects with systemic lupus erythematosus (SLE) immunized with KLH, ACR 2007.

Zoog S. Itano A. Trueblood E. **Chung J.** Ferbas J. Ng G. and Juan G. Automated Enumeration of Skin Mast Cells by Laser Scanning Cytometry, FOCIS 2007.

Wullner D. Jawa V. **Chung J.** and Swanson S. Development of a Biomarker Assay Using ELISPOT for Detecting KLH Specific IFN- $\gamma$  Secreting T Cells, FOCIS 2006.