

Stanford



Holden Maecker

Professor (Research) of Microbiology and Immunology
Microbiology & Immunology

Bio

BIO

Dr. Maecker received a BS in Microbiology from Purdue University and a PhD in Cancer Biology from Stanford University. He did postdoctoral work with Ronald and Shoshana Levy at Stanford, and was an Assistant Professor of Biology at Loyola University Chicago, as well as a Senior Scientist at BD Biosciences, San Jose, CA. He is currently a Professor of Microbiology and Immunology, and Director of the Human Immune Monitoring Center, at Stanford University.

ACADEMIC APPOINTMENTS

- Professor (Research), Microbiology & Immunology
- Member, Bio-X
- Member, Cardiovascular Institute
- Member, Wu Tsai Human Performance Alliance
- Member, Maternal & Child Health Research Institute (MCHRI)
- Member, Stanford Cancer Institute
- Member, Wu Tsai Neurosciences Institute

ADMINISTRATIVE APPOINTMENTS

- Director, Human Immune Monitoring Center, (2009- present)
- Member, Institute for Immunity, Transplantation, and Infection, (2009- present)
- Member, Immunology Interdisciplinary Degree Program, (2012- present)
- Director, Service Centers and Enabling Technologies, Stanford University School of Medicine, (2014- present)
- Member, Stanford Diabetes Research Center, (2017- present)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, Scientific Advisory Board, Cytek (2017 - present)
- Member, SITC Biomarker Task Force (2014 - present)
- Member, Stanford Cancer Institute Scientific Review Committee (2011 - present)
- Co-chair, FOCIS Human Immunophenotyping Consortium (HIPC) (2009 - present)

PROFESSIONAL EDUCATION

- PhD, Stanford University , Cancer Biology (1988)
- BS, Purdue University , Microbiology (1984)

COMMUNITY AND INTERNATIONAL WORK

- Human Immunophenotyping Consortium

PATENTS

- Vernon Maino, Holden Maecker, Douglas Petry. "United States Patent 2007/109161 Detection of HIV-infected cell subsets", Becton, Dickinson, and Company, Jan 1, 2007
- Shoshana Levy, Rosemarie Dekruyff, Dale Umetsu, Holden Maecker. "United States Patent 2001/0044418 Treatment of allergies", Stanford University, Jan 1, 2001

LINKS

- HIMC website: <http://himc.stanford.edu>
- Maeckerlab weblog: <http://maeckerlab.typepad.com>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

A major theme in our group is to define metrics of immune competence in various settings, including cancer immunotherapy, organ transplantation, allergy, and chronic viral infection. We use CyTOF mass cytometry, often in combination with other technologies, to broadly survey immune features at the cellular level, then examine links between features or groups of features and clinical outcome. A long-term goal is to create an assay of global immune competence that could predict risk for various immune-related outcomes in both healthy individuals and in disease.

Teaching

COURSES

2023-24

- Introduction to Applied Computational Tools in Immunology: IMMUNOL 206 (Win)
- MTRAM A: Translational Research Methods and Technologies: Cell Based Methods: MED 212A (Aut)

2022-23

- Introduction to Applied Computational Tools in Immunology: IMMUNOL 206 (Win)
- MTRAM A: Translational Research Methods and Technologies: Cell Based Methods: MED 212A (Aut)

2021-22

- Introduction to Applied Computational Tools in Immunology: IMMUNOL 206 (Win)

2020-21

- Introduction to Applied Computational Tools in Immunology: IMMUNOL 206 (Win)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Jimena Pavlovitch-Bedzyk, David Seong

Postdoctoral Faculty Sponsor

Linda Wass

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Immunology (Phd Program)
- Microbiology and Immunology (Phd Program)

Publications

PUBLICATIONS

- **Host-microbe multiomic profiling reveals age-dependent immune dysregulation associated with COVID-19 immunopathology.** *Science translational medicine*
Phan, H. V., Tsitsiklis, A., Maguire, C. P., Haddad, E. K., Becker, P. M., Kim-Schulze, S., Lee, B., Chen, J., Hoch, A., Pickering, H., van Zalm, P., Altman, M. C., Augustine, et al
2024; 16 (743): eadj5154
- **AS03 adjuvant enhances the magnitude, persistence, and clonal breadth of memory B cell responses to a plant-based COVID-19 vaccine in humans.** *Science immunology*
Grigoryan, L., Feng, Y., Bellusci, L., Lai, L., Wali, B., Ellis, M., Yuan, M., Arunachalam, P. S., Hu, M., Kowli, S., Gupta, S., Maysel-Auslender, S., Maecker, et al
2024; 9 (94): eadi8039
- **Comprehensive landscape of neutralizing antibody and cell-mediated response elicited by the 1/5 fractional dose of 17DD-YF primary vaccination in adults.** *Scientific reports*
Reis, L. R., Costa-Rocha, I. A., Abdala-Torres, T., Campi-Azevedo, A. C., Peruhype-Magalhaes, V., Araujo, M. S., Speziali, E., do Valle Antonelli, L. R., da Silva-Pereira, R. A., Almeida, G. G., Fernandes, E. G., Fantinato, F. F., Domingues, et al
2024; 14 (1): 7709
- **CyTOF Intracellular Cytokine Assays for Antigen-Specific T Cells.** *Methods in molecular biology (Clifton, N.J.)*
Lin, D., Maecker, H. T.
2024; 2779: 395-405
- **SITC Clinical Immuno-Oncology Network (SCION) commentary on measurement and interpretation of essential biomarkers in early clinical trials.** *Journal for immunotherapy of cancer*
Sitc, S., Lotze, M. T., Cottrell, T., Bifulco, C., Chow, L., Cope, L., Gnjatic, S., Maecker, H. T., Yeong Poh Shen, J.
2024; 12 (3)
- **Impaired innate and adaptive immune responses to BNT162b2 SARS-CoV-2 vaccination in systemic lupus erythematosus.** *JCI insight*
Sarin, K. Y., Zheng, H., Chaichian, Y., Arunachalam, P. S., Swaminathan, G., Eschholz, A., Gao, F., Wirz, O. F., Lam, B., Yang, E., Lee, L. W., Feng, A., Lewis, et al
2024; 9 (5)
- **SITC clinical Immuno-Oncology network (SCION) commentary on measurement and interpretation of essential biomarkers in early clinical trials** *JOURNAL FOR IMMUNOTHERAPY OF CANCER*
Lotze, M. T., Cottrell, T., Bifulco, C., Chow, L., Cope, L., Gnjatic, S., Maecker, H. T., Shen, J.
2024; 12 (3)
- **Cross-Platform Comparison of Highly Sensitive Immunoassays for Inflammatory Markers in a COVID-19 Cohort.** *Journal of immunology (Baltimore, Md. : 1950)*
Abe, K., Beer, J. C., Nguyen, T., Ariyapala, I. S., Holmes, T. H., Feng, W., Zhang, B., Kuo, D., Luo, Y., Ma, X. J., Maecker, H. T.
2024
- **Immune Assessment Today: Optimizing and Standardizing Efforts to Monitor Immune Responses in Cancer and Beyond.** *Cancers*
Pandey, S., Cholak, M. E., Yadali, R., Sosman, J. A., Tetraeault, M., Fang, D., Pollack, S. M., Gnjatic, S., Obeng, R. C., Lyerly, H. K., Sonabend, A. M., Guevara-Patino, J. A., Butterfield, et al
2024; 16 (3)
- **IgM N-glycosylation correlates with COVID-19 severity and rate of complement deposition.** *Nature communications*
Haslund-Gourley, B. S., Woloszczuk, K., Hou, J., Connors, J., Cusimano, G., Bell, M., Taramangalam, B., Fourati, S., Mege, N., Bernui, M., Altman, M. C., Krammer, F., van Bakel, et al
2024; 15 (1): 404
- **Features of acute COVID-19 associated with post-acute sequelae of SARS-CoV-2 phenotypes: results from the IMPACC study.** *Nature communications*
Ozonoff, A., Jayavelu, N. D., Liu, S., Melamed, E., Milliren, C. E., Qi, J., Geng, L. N., McComsey, G. A., Cairns, C. B., Baden, L. R., Schaezman, J., Shaw, A. C., Samaha, et al
2024; 15 (1): 216
- **GIMAP5 deficiency reveals a mammalian ceramide-driven longevity assurance pathway.** *Nature immunology*

Park, A. Y., Leney-Greene, M., Lynberg, M., Gabrielski, J. Q., Xu, X., Schwarz, B., Zheng, L., Balasubramanyam, A., Ham, H., Chao, B., Zhang, Y., Matthews, H. F., Cui, et al
2024

● **Immune determinants of CAR-T cell expansion in solid tumor patients receiving GD2 CAR-T cell therapy.** *Cancer cell*
Kaczanowska, S., Murty, T., Alimadadi, A., Contreras, C. F., Duault, C., Subrahmanyam, P. B., Reynolds, W., Gutierrez, N. A., Baskar, R., Wu, C. J., Michor, F., Altreuter, J., Liu, et al
2023

● **Relationship of Heterologous Virus Responses and Outcomes in Hospitalized COVID-19 Patients.** *Journal of immunology (Baltimore, Md. : 1950)*
Rosenberg-Hasson, Y., Holmes, T. H., Diray-Arce, J., Chen, J., Kellogg, R., Snyder, M., Becker, P. M., Ozonoff, A., Roushanel, N., Reed, E. F., Maecker, H. T.
2023; 211 (8): 1224-1231

● **Air pollution and pregnancy.** *Seminars in perinatology*
Aguilera, J., Konvinse, K., Lee, A., Maecker, H., Prunicki, M., Mahalingaiah, S., Sampath, V., Utz, P. J., Yang, E., Nadeau, K. C.
2023: 151838

● **Multi-omics analysis of mucosal and systemic immunity to SARS-CoV-2 after birth.** *Cell*
Wimmers, F., Burrell, A. R., Feng, Y., Zheng, H., Arunachalam, P. S., Hu, M., Spranger, S., Nyhoff, L. E., Joshi, D., Trisal, M., Awasthi, M., Bellusci, L., Ashraf, et al
2023

● **Acute Respiratory Illness Is Associated with Memory T Cell Differentiation and Other Immune Cell Changes in an Age-Associated Manner.** *ImmunoHorizons*
Ugale, S. S., Holmes, T. H., Maysel-Auslander, S., Boyd, S. D., Dekker, C. L., Davis, M. M., Maecker, H. T.
2023; 7 (9): 611-618

● **Ancestry-based differences in the immune phenotype are associated with lupus activity.** *JCI insight*
Slight-Webb, S., Thomas, K., Smith, M., Wagner, C. A., Macwana, S., Bylinska, A., Donato, M., Dvorak, M., Chang, S. E., Kuo, A., Cheung, P., Kalesinskas, L., Ganeshan, et al
2023; 8 (16)

● **Lower levels of Th1 and Th2 cytokines in cerebrospinal fluid (CSF) at the time of initial CSF shunt placement in children are associated with subsequent shunt revision surgeries.** *Cytokine*
Simon, T. D., Sedano, S., Rosenberg-Hasson, Y., Durazo-Arvizu, R., Whitlock, K. B., Hodor, P., Hauptman, J. S., Limbrick, D. D., McDonald, P., Ojemann, J. G., Maecker, H. T., Cerebrospinal FLuid MicroBiota in Shunts CLIMB Study Group
2023; 169: 156310

● **Extending the dynamic range of biomarker quantification through molecular equalization.** *Nature communications*
Newman, S. S., Wilson, B. D., Mamerow, D., Wollant, B. C., Nyein, H., Rosenberg-Hasson, Y., Maecker, H. T., Eisenstein, M., Soh, H. T.
2023; 14 (1): 4192

● **Enkulin: A novel marker for myeloproliferative neoplasms from platelet, megakaryocyte, and whole blood specimens.** *Blood advances*
Mosale Seetharam, S., Liu, Y., Wu, J., Fechter, L., Murugesan, K., Maecker, H. T., Gotlib, J., Zehnder, J. L., Paulmurugan, R., Krishnan, A.
2023

● **Multi-omic longitudinal study reveals immune correlates of clinical course among hospitalized COVID-19 patients.** *Cell reports. Medicine*
Diray-Arce, J., Fourati, S., Doni Jayavelu, N., Patel, R., Maguire, C., Chang, A. C., Dandekar, R., Qi, J., Lee, B. H., van Zalm, P., Schroeder, A., Chen, E., Konstorum, et al
2023: 101079

● **Intrinsic suppression of type I interferon production underlies the therapeutic efficacy of IL-15-producing natural killer cells in B-cell acute lymphoblastic leukemia.** *Journal for immunotherapy of cancer*
Kumar, A., Taghi Khani, A., Duault, C., Aramburo, S., Sanchez Ortiz, A., Lee, S. J., Chan, A., McDonald, T., Huang, M., Lacayo, N. J., Sakamoto, K. M., Yu, J., Hurtz, et al
2023; 11 (5)

● **Delayed generation of functional virus-specific circulating T follicular helper cells correlates with severe COVID-19.** *Nature communications*
Yu, M., Charles, A., Cagigi, A., Christ, W., Österberg, B., Falck-Jones, S., Azizmohammadi, L., Åhlberg, E., Falck-Jones, R., Svensson, J., Nie, M., Warnqvist, A., Hellgren, et al
2023; 14 (1): 2164

- **Comparison of multiplexed protein analysis platforms for the detection of biomarkers in the nasal epithelial lining fluid of healthy subjects.** *Journal of immunological methods*
Zetlen, H. L., Cao, K. T., Schichlein, K. D., Knight, N., Maecker, H. T., Nadeau, K. C., Rebuli, M. E., Rice, M. B.
2023; 113473
- **Advances and potential of omics studies for understanding the development of food allergy.** *Frontiers in allergy*
Sindher, S. B., Chin, A. R., Aghaeepour, N., Prince, L., Maecker, H., Shaw, G. M., Stevenson, D. K., Nadeau, K. C., Snyder, M., Khatri, P., Boyd, S. D., Winn, V. D., Angst, et al
2023; 4: 1149008
- **Magnitude and kinetics of the human immune cell response associated with severe dengue progression by single-cell proteomics.** *Science advances*
Robinson, M. L., Glass, D. R., Duran, V., Agudelo Rojas, O. L., Sanz, A. M., Consuegra, M., Sahoo, M. K., Hartmann, F. J., Bosse, M., Gelvez, R. M., Bueno, N., Pinsky, B. A., Montoya, et al
2023; 9 (12): eade7702
- **A cross-sectional study comparing the inflammatory profile of menstrual effluent vs. peripheral blood.** *Health science reports*
Naseri, S., Rosenberg-Hasson, Y., Maecker, H. T., Avrutsky, M. I., Blumenthal, P. D.
2023; 6 (1): e1038
- **The Role of Single-Cell Profiling and Deep Immunophenotyping in Understanding Immune Therapy Cardiotoxicity.** *JACC. CardioOncology*
Huang, Y. V., Waliany, S., Lee, D., Galdos, F. X., Witteles, R. M., Neal, J. W., Fan, A. C., Maecker, H. T., Nguyen, P. K., Wu, S. M., Zhu, H.
2022; 4 (5): 629-634
- **CD8+ T cell differentiation status correlates with the feasibility of sustained unresponsiveness following oral immunotherapy.** *Nature communications*
Kaushik, A., Dunham, D., Han, X., Do, E., Andorf, S., Gupta, S., Fernandes, A., Kost, L. E., Sindher, S. B., Yu, W., Tsai, M., Tibshirani, R., Boyd, et al
2022; 13 (1): 6646
- **Phenotypes of disease severity in a cohort of hospitalized COVID-19 patients: Results from the IMPACC study.** *EBioMedicine*
Ozonoff, A., Schaenman, J., Jayavelu, N. D., Milliren, C. E., Calfee, C. S., Cairns, C. B., Kraft, M., Baden, L. R., Shaw, A. C., Krammer, F., van Bakel, H., Esserman, D. A., Liu, et al
2022; 83: 104208
- **Discrete Plasma Cytokine Profiles among Pregnant Women in Botswana by Chlamydia trachomatis infection, HIV status, and Gestational age.** *The Journal of infectious diseases*
Babalola, C. M., Siebert, J. C., Kallapur, S. G., Maecker, H. T., Rosenberg-Hasson, Y., Hansman, E., Wynn, A., Mussa, A., Ryan, R., Simon, S., Morroni, C., Klausner, J. D.
2022
- **Anti-nucleocapsid antibody levels and pulmonary comorbid conditions are linked to post-COVID-19 syndrome.** *JCI insight*
Jia, X., Cao, S., Lee, A. S., Manohar, M., Sindher, S. B., Ahuja, N., Artandi, M., Blish, C. A., Blomkalns, A. L., Chang, I., Collins, W. J., Desai, M., Din, et al
2022; 7 (13)
- **Identification of Pathogenic Immune Cell Subsets Associated With Checkpoint Inhibitor-Induced Myocarditis.** *Circulation*
Zhu, H., Galdos, F. X., Lee, D., Waliany, S., Vivian Huang, Y., Ryan, J., Dang, K., Neal, J. W., Wakelee, H. A., Reddy, S. A., Srinivas, S., Lin, L. L., Witteles, et al
2022; 101161CIRCULATIONAHA121056730
- **Full spectrum flow cytometry and mass cytometry: A 32-marker panel comparison.** *Cytometry. Part A : the journal of the International Society for Analytical Cytology*
Jaimes, M. C., Leipold, M., Kraker, G., Amir, E., Maecker, H., Lannigan, J.
2022
- **Increases in ambient air pollutants during pregnancy are linked to increases in methylation of IL4, IL10, and IFNgamma.** *Clinical epigenetics*
Aguilera, J., Han, X., Cao, S., Balmes, J., Lurmann, F., Tyner, T., Lutzker, L., Noth, E., Hammond, S. K., Sampath, V., Burt, T., Utz, P. J., Khatri, et al
2022; 14 (1): 40
- **Single-Cell Immune Mapping of Melanoma Sentinel Lymph Nodes Reveals an Actionable Immunotolerant Microenvironment.** *Clinical cancer research : an official journal of the American Association for Cancer Research*
Yaddanapudi, K., Stamp, B. F., Subrahmanyam, P. B., Smolenkov, A., Waigel, S. J., Gosain, R., Egger, M. E., Martin, R. C., Buscaglia, R., Maecker, H. T., McMasters, K. M., Chesney, J. A.
1800

- **Early non-neutralizing, afucosylated antibody responses are associated with COVID-19 severity.** *Science translational medicine*
Chakraborty, S., Gonzalez, J. C., Sievers, B. L., Mallajosyula, V., Chakraborty, S., Dubey, M., Ashraf, U., Cheng, B. Y., Kathale, N., Tran, K. Q., Scallan, C., Sinnott, A., Cassidy, et al
1800: eabm7853
- **Disease characteristics and serological responses in patients with differing severity of COVID-19 infection: A longitudinal cohort study in Dhaka, Bangladesh.** *PLoS neglected tropical diseases*
Akter, A., Ahmed, T., Tauheed, I., Akhtar, M., Rahman, S. I., Khaton, F., Ahmmmed, F., Ferdous, J., Afrad, M. H., Kawser, Z., Hossain, M., Khondaker, R., Hasnat, et al
2022; 16 (1): e0010102
- **Mass Cytometry Assessment of Cell Phenotypes and Signaling States in Human Whole Blood.** *Methods in molecular biology (Clifton, N.J.)*
Sigal, N., Maecker, H. T.
2022; 2543: 113-128
- **Insulin Growth Factor Phenotypes in Heart Failure with Preserved Ejection Fraction, an INSPIRE Registry and CATHGEN Study: IGF axis in HFpEF.** *Journal of cardiac failure*
Haddad, F., Ataam, J. A., Amsallem, M., Cauwenberghs, N., Kuznetsova, T., Rosenberg-Hasson, Y., Zamani, R. T., Karakikes, I., Horne, B. D., Muhlestein, J. B., Kwee, L., Shah, S., Maecker, et al
1800
- **Inflammatory cytokines and callosal white matter microstructure in adolescents.** *Brain, behavior, and immunity*
Ho, T. C., Kulla, A., Teresi, G. I., Sisk, L. M., Rosenberg-Hasson, Y., Maecker, H. T., Gotlib, I. H.
1800
- **Platelet transcriptome identifies progressive markers and potential therapeutic targets in chronic myeloproliferative neoplasms.** *Cell reports. Medicine*
Shen, Z., Du, W., Perkins, C., Fechter, L., Natu, V., Maecker, H., Rowley, J., Gotlib, J., Zehnder, J., Krishnan, A.
2021; 2 (10): 100425
- **Development of immunosuppressive myeloid cells to induce tolerance in solid organ and hematopoietic cell transplant recipients.** *Blood advances*
Jensen, K. P., Hongo, D., Ji, X., Zheng, P., Pawar, R. D., Wu, H., Busque, S., Scandling, J. D., Shizuru, J. A., Lowsky, R., Shori, A., Dutt, S., Waters, et al
2021
- **Novel circulating and tissue monocytes as well as macrophages in pancreatitis and recovery.** *Gastroenterology*
Manohar, M., Jones, E. K., Rubin, S. J., Subrahmanyam, P. B., Swaminathan, G., Mikhail, D., Bai, L., Singh, G., Wei, Y., Sharma, V., Siebert, J. C., Maecker, H. T., Husain, et al
2021
- **Brief report: Tempol, a novel antioxidant, inhibits both activated T cell and antigen presenting cell derived cytokines in-vitro from COVID-19 patients.** *Clinical immunology (Orlando, Fla.)*
Mathi, K., Rosenberg-Hasson, Y., Maecker, H., Carlo, D. J., Moss, R. B.
2021: 108828
- **Immunophenotyping assessment in a COVID-19 cohort (IMPACC): A prospective longitudinal study** *SCIENCE IMMUNOLOGY*
Rouphael, N., Maecker, H., Montgomery, R. R., Diray-Arce, J., Kleinstein, S. H., Altman, M. C., Bosingier, S. E., Eckalbar, W., Guan, L., Hough, C. L., Krammer, F., Langlier, C., Levy, et al
2021; 6 (62)
- **IL-7 expands lymphocyte populations and enhances immune responses to sipuleucel-T in patients with metastatic castration-resistant prostate cancer (mCRPC).** *Journal for immunotherapy of cancer*
Pachynski, R. K., Morishima, C., Szmulewitz, R., Harshman, L., Appleman, L., Monk, P., Bitting, R. L., Kucuk, O., Millard, F., Seigne, J. D., Fling, S. P., Maecker, H. T., Duault, et al
2021; 9 (8)
- **Novel Circulating and Tissue Monocytes As Well As Macrophages in Pancreatitis and Recovery**
Manohar, M., Jones, E. K., Rubin, S. S., Subrahmanyam, P. B., Mikhail, D., Bai, L., Singh, G., Wei, Y., Sharma, V., Swaminathan, G., Siebert, J. C., Maecker, H. T., Park, et al
LIPPINCOTT WILLIAMS & WILKINS.2021: 1079-1080
- **Protective Effect of Saffron in Mouse Colitis Models Through Immune Modulation.** *Digestive diseases and sciences*
Singh, G., Haileselassie, Y., Ji, A. R., Maecker, H. T., Sinha, S. R., Brim, H., Habtezion, A., Ashktorab, H.

2021

- **Multi-Center Immune Profiling Mass Cytometry Assay Harmonization.** *Clinical cancer research : an official journal of the American Association for Cancer Research*
Sahaf, B., Pichavant, M., Lee, B. H., Duault, C., Thrash, E. M., Davila, M., Fernandez, N., Millerchip, K., Bentebibel, S., Haymaker, C., Sigal, N., Del Valle, D. M., Ranasinghe, et al
2021
- **An inflammatory aging clock (iAge) based on deep learning tracks multimorbidity, immunosenescence, frailty and cardiovascular aging.** *Nature aging*
Sayed, N., Huang, Y., Nguyen, K., Krejciova-Rajaniemi, Z., Grawe, A. P., Gao, T., Tibshirani, R., Hastie, T., Alpert, A., Cui, L., Kuznetsova, T., Rosenberg-Hasson, Y., Ostan, et al
2021; 1: 598-615
- **The single-cell epigenomic and transcriptional landscape of immunity to influenza vaccination.** *Cell*
Wimmers, F., Donato, M., Kuo, A., Ashuach, T., Gupta, S., Li, C., Dvorak, M., Foecke, M. H., Chang, S. E., Hagan, T., De Jong, S. E., Maecker, H. T., van der Most, et al
2021
- **Dynamic Serial Cytokine Measurements During Intravenous Ca-DTPA Chelation in Gadolinium Deposition Disease and Gadolinium Storage Condition: A Pilot Study.** *Investigative radiology*
Maecker, H. T., Siebert, J. C., Rosenberg-Hasson, Y., Koran, L. M., Ramalho, M., Semelka, R. C.
2021
- **Activated Natural Killer Cells Predict Poor Clinical Prognosis in High-risk B- and T- cell Acute Lymphoblastic Leukemia.** *Blood*
Duault, C., Kumar, A., Taghi Khani, A., Lee, S. J., Yang, L., Huang, M., Hurtz, C., Manning, B., Ghoda, L. Y., McDonald, T., Lacayo, N. J., Sakamoto, K. M., Carroll, et al
2021
- **Association of Premature Immune Aging and Cytomegalovirus After Solid Organ Transplant.** *Frontiers in immunology*
Higdon, L. E., Gustafson, C. E., Ji, X., Sahoo, M. K., Pinsky, B. A., Margulies, K. B., Maecker, H. T., Goronzy, J., Maltzman, J. S.
2021; 12: 661551
- **Immune profiling of COVID-19: preliminary findings and implications for the pandemic.** *Journal for immunotherapy of cancer*
Maecker, H. T.
2021; 9 (5)
- **Immune Changes Beyond Th2 Pathways During Rapid Multifood Immunotherapy enabled with Omalizumab.** *Allergy*
Manohar, M., Dunham, D., Gupta, S., Yan, Z., Zhang, W., Minnicozzi, S., Kirkey, M., Bunning, B., Chowdhury, R. R., Galli, S. J., Boyd, S. D., Kost, L. E., Chinthurajah, et al
2021
- **Functional monocytic myeloid-derived suppressor cells increase in blood but not airways and predict COVID-19 severity** *JOURNAL OF CLINICAL INVESTIGATION*
Falck-Jones, S., Vangeti, S., Yu, M., Falck-Jones, R., Cagigi, A., Badolati, I., Osterberg, B., Lautenbach, M., Ahlberg, E., Lin, A., Lepzien, R., Szurgot, I., Lenart, et al
2021; 131 (6)
- **Safety and Efficacy of B-Cell Depletion with Rituximab for the Treatment of Systemic Sclerosis Associated Pulmonary Arterial Hypertension: A Multi-center, Double-blind, Randomized, Placebo-controlled Trial.** *American journal of respiratory and critical care medicine*
Zamanian, R. T., Badesch, D., Chung, L., Domsic, R. T., Medsger, T., Pinckney, A., Keyes-Elstein, L., D'Aveta, C., Spychala, M., White, R. J., Hassoun, P. M., Torres, F., Sweatt, et al
2021
- **Aging and CMV discordance are associated with increased immune diversity between monozygotic twins.** *Immunity & ageing : I & A*
Yan, Z., Maecker, H. T., Brodin, P., Nygaard, U. C., Lyu, S. C., Davis, M. M., Nadeau, K. C., Andorf, S.
2021; 18 (1): 5
- **Network for biomarker immunoprofiling for cancer immunotherapy: Cancer Immune Monitoring and Analysis Centers and Cancer Immunologic Data Commons (CIMAC-CIDC).** *Clinical cancer research : an official journal of the American Association for Cancer Research*
Chen, H. X., Song, M., Maecker, H. T., Gnjatic, S., Patton, D., Lee, J. J., Adam, S. J., Moravec, R., Liu, X. S., Cerami, E., Lindsay, J., Hodi, F. S., Wu, et al
2021

- **Acute Chelation Therapy-Associated Changes in Urine Gadolinium, Self-reported Flare Severity, and Serum Cytokines in Gadolinium Deposition Disease.** *Investigative radiology*
Maecker, H. T., Siebert, J. C., Rosenberg-Hasson, Y. n., Koran, L. M., Ramalho, M. n., Semelka, R. C.
2021
- **Altered Functional Mitochondrial Protein Levels in Plasma Neuron-Derived Extracellular Vesicles of Patients With Gadolinium Deposition.** *Frontiers in toxicology*
Goetzl, E. J., Maecker, H. T., Rosenberg-Hasson, Y., Koran, L. M.
2021; 3: 797496
- **Systems vaccinology of the BNT162b2 mRNA vaccine in humans.** *Nature*
Arunachalam, P. S., Scott, M. K., Hagan, T., Li, C., Feng, Y., Wimmers, F., Grigoryan, L., Trisal, M., Edara, V. V., Lai, L., Chang, S. E., Feng, A., Dhingra, et al
2021
- **Signatures of immune dysfunction in HIV and HCV infection share features with chronic inflammation in aging and persist after viral reduction or elimination.** *Proceedings of the National Academy of Sciences of the United States of America*
Lopez Angel, C. J., Pham, E. A., Du, H. n., Vallania, F. n., Fram, B. J., Perez, K. n., Nguyen, T. n., Rosenberg-Hasson, Y. n., Ahmed, A. n., Dekker, C. L., Grant, P. M., Khatri, P. n., Maecker, et al
2021; 118 (14)
- **Mass Cytometry Analysis of T-Helper Cells.** *Methods in molecular biology (Clifton, N.J.)*
Subrahmanyam, P. B., Maecker, H. T.
2021; 2285: 49–63
- **Higher Levels of Pro-inflammatory Cytokines Are Associated With Higher Levels of Glutamate in the Anterior Cingulate Cortex in Depressed Adolescents.** *Frontiers in psychiatry*
Ho, T. C., Teresi, G. I., Segarra, J. R., Ojha, A., Walker, J. C., Gu, M., Spielman, D. M., Sacchet, M. D., Jiang, F., Rosenberg-Hasson, Y., Maecker, H., Gotlib, I. H.
2021; 12: 642976
- **Mass Cytometry Defines Virus-Specific CD4+ T Cells in Influenza Vaccination.** *ImmunoHorizons*
Subrahmanyam, P. B., Holmes, T. H., Lin, D., Su, L. F., Obermoser, G., Banchereau, J., Pascual, V., Garcia-Sastre, A., Albrecht, R. A., Palucka, K., Davis, M. M., Maecker, H. T.
2020; 4 (12): 774–88
- **Vi-Vaccinations Induce Heterogeneous Plasma Cell Responses That Associate With Protection From Typhoid Fever** *FRONTIERS IN IMMUNOLOGY*
Cross, D. L., Verheul, M. K., Leipold, M. D., Obermoser, G., Jin, C., Jones, E., Starr, J. S., Mohorianu, I., Blohmke, C. J., Maecker, H. T., Napolitani, G., Hill, J., Pollard, et al
2020; 11
- **SITC cancer immunotherapy resource document: a compass in the land of biomarker discovery.** *Journal for immunotherapy of cancer*
Hu-Lieskován, S., Bhaumik, S., Dhodapkar, K., Grivel, J. J., Gupta, S., Hanks, B. A., Janetzki, S., Kleen, T. O., Koguchi, Y., Lund, A. W., Maccalli, C., Mahnke, Y. D., Novosiadly, et al
2020; 8 (2)
- **Study Protocol for Teen Inflammation Glutamate Emotion Research (TIGER)** *FRONTIERS IN HUMAN NEUROSCIENCE*
Walker, J. C., Teresi, G. I., Weisenburger, R. L., Segarra, J. R., Ojha, A., Kulla, A., Sisk, L., Gu, M., Spielman, D. M., Rosenberg-Hasson, Y., Maecker, H. T., Singh, M. K., Gotlib, et al
2020; 14
- **Immune biomarkers link air pollution exposure to blood pressure in adolescents.** *Environmental health : a global access science source*
Prunicki, M., Cauwenberghs, N., Ataam, J. A., Movassagh, H., Kim, J. B., Kuznetsova, T., Wu, J. C., Maecker, H., Haddad, F., Nadeau, K.
2020; 19 (1): 108
- **An initial investigation of serum cytokine levels in patients with gadolinium retention.** *Radiologia brasileira*
Maecker, H. T., Wang, W., Rosenberg-Hasson, Y., Semelka, R. C., Hickey, J., Koran, L. M.
2020; 53 (5): 306–13
- **Systems biological assessment of immunity to mild versus severe COVID-19 infection in humans.** *Science (New York, N.Y.)*
Arunachalam, P. S., Wimmers, F., Mok, C. K., Perera, R. A., Scott, M., Hagan, T., Sigal, N., Feng, Y., Bristow, L., Tak-Yin Tsang, O., Wagh, D., Coller, J., Pellegrini, et al
2020

- **Transcriptional changes in peanut-specific CD4+ T cells over the course of oral immunotherapy.** *Clinical immunology (Orlando, Fla.)*
Wang, W., Lyu, S., Ji, X., Gupta, S., Manohar, M., Dhondalay, G. K., Chinthrajah, S., Andorf, S., Boyd, S. D., Tibshirani, R., Galli, S. J., Nadeau, K. C., Maecker, H. T., et al
2020; 108568
- **Cytokine profile in plasma of severe COVID-19 does not differ from ARDS and sepsis.** *JCI insight*
Wilson, J. G., Simpson, L. J., Ferreira, A., Rustagi, A., Roque, J. A., Asuni, A., Ranganath, T., Grant, P. M., Subramanian, A. K., Rosenberg-Hasson, Y., Maecker, H., Holmes, S., Levitt, et al
2020
- **MYC functions as a switch for natural killer cell-mediated immune surveillance of lymphoid malignancies.** *Nature communications*
Swaminathan, S., Hansen, A. S., Heftdal, L. D., Dhanasekaran, R., Deutzmann, A., Fernandez, W. D., Liefwalker, D. F., Horton, C., Mosley, A., Liebersbach, M., Maecker, H. T., Felsher, D. W.
2020; 11 (1): 2860
- **A Novel Utility to Correct for Plate/Batch/Lot and Nonspecific Binding Artifacts in Luminex Data.** *Journal of immunology (Baltimore, Md. : 1950)*
Maecker, H. T., Rosenberg-Hasson, Y., Kolstad, K. D., Steen, V. D., Chung, L. S.
2020
- **JAK-STAT Activity in Peripheral Blood Cells and Kidney Tissue in IgA Nephropathy.** *Clinical journal of the American Society of Nephrology : CJASN*
Tao, J., Mariani, L., Eddy, S., Maecker, H., Kambham, N., Mehta, K., Hartman, J., Wang, W., Kretzler, M., Lafayette, R. A.
2020
- **A Prospective, Phase 1 Trial of Nivolumab, Ipilimumab, and Radiotherapy in Patients with Advanced Melanoma.** *Clinical cancer research : an official journal of the American Association for Cancer Research*
Postow, M. A., Knox, S. J., Goldman, D. A., Elhanati, Y., Mavinkurve, V., Wong, P., Halpenny, D. F., Reddy, S. A., Vado, K. P., McCabe, D., Ramirez, K. A., Macri, M., Schwarzenberger, et al
2020
- **Impaired Immune Health in Survivors of Diffuse Large B-Cell Lymphoma.** *Journal of clinical oncology : official journal of the American Society of Clinical Oncology*
Shree, T., Li, Q., Glaser, S. L., Brunson, A., Maecker, H. T., Haile, R. W., Levy, R., Keegan, T. H.
2020: JCO1901937
- **High-Parametric Evaluation of Human Invariant Natural Killer T Cells to Delineate Heterogeneity in Allo- and Autoimmunity.** *Blood*
Erkers, T., Xie, B., Kenyon, L. J., Smith, B., Rieck, M., Jensen, K. P., Ji, X., Basina, M., Strober, S., Negrin, R. S., Maecker, H. T., Meyer, E.
2020
- **The Application of Cytokine Expression Assays to Differentiate Active From Previously Treated Syphilis.** *The Journal of infectious diseases*
Kojima, N. n., Siebert, J. C., Maecker, H. n., Rosenberg-Hasson, Y. n., Leon, S. R., Vargas, S. K., Konda, K. A., Caceres, C. F., Klausner, J. D.
2020; 222 (4): 690–94
- **Autoantibody-positive healthy individuals with lower lupus risk display a unique immune endotype.** *The Journal of allergy and clinical immunology*
Slight-Webb, S. n., Smith, M. n., Bylinska, A. n., Macwana, S. n., Guthridge, C. n., Lu, R. n., Merrill, J. T., Chakravarty, E. n., Arriens, C. n., Munroe, M. E., Maecker, H. T., Utz, P. J., Guthridge, et al
2020
- **Cardiovascular Complications in Patients with COVID-19: Consequences of Viral Toxicities and Host Immune Response** *Curr Cardiol Rep*
Zhu, H., Rhee, J., Cheng, P., Waliany, S., Chang, A., Witteles, R. M., Maecker, H., Davis, M. M., Nguyen, P. K., Wu, S. M.
2020; 22 (5)
- **High-Parameter Immune Profiling with CyTOF.** *Methods in molecular biology (Clifton, N.J.)*
Sahaf, B., Rahman, A., Maecker, H. T., Bendall, S. C.
2020; 2055: 351–68
- **Immunologic effects of forest fire exposure show increases in IL-1# and CRP.** *Allergy*
Prunicki, M. M., Dant, C. C., Cao, S. n., Maecker, H. n., Haddad, F. n., Kim, J. B., Snyder, M. n., Wu, J. n., Nadeau, K. n.
2020
- **The FluPRINT dataset, a multidimensional analysis of the influenza vaccine imprint on the immune system.** *Scientific data*
Tomic, A., Tomic, I., Dekker, C. L., Maecker, H. T., Davis, M. M.

2019; 6 (1): 214

- **Guidelines for the use of flow cytometry and cell sorting in immunological studies (second edition).** *European journal of immunology*
Cossarizza, A., Chang, H., Radbruch, A., Acs, A., Adam, D., Adam-Klages, S., Agace, W. W., Aghaeepour, N., Akdis, M., Allez, M., Almeida, L. N., Alvisi, G., Anderson, et al
2019; 49 (10): 1457–1973
- **Reversal of epigenetic aging and immunosenescent trends in humans.** *Aging cell*
Fahy, G. M., Brooke, R. T., Watson, J. P., Good, Z., Vasanawala, S. S., Maecker, H., Leipold, M. D., Lin, D. T., Kobor, M. S., Horvath, S.
2019: e13028
- **Comprehensive Immune Monitoring of Clinical Trials to Advance Human Immunotherapy.** *Cell reports*
Hartmann, F. J., Babdor, J., Gherardini, P. F., Amir, E. D., Jones, K., Sahaf, B., Marquez, D. M., Krutzik, P., O'Donnell, E., Sigal, N., Maecker, H. T., Meyer, E., Spitzer, et al
2019; 28 (3): 819
- **Diminished B-Cell Response After Repeat Influenza Vaccination** *JOURNAL OF INFECTIOUS DISEASES*
Sanyal, M., Holmes, T. H., Maecker, H. T., Albrecht, R. A., Dekker, C. L., He, X., Greenberg, H. B.
2019; 219 (10): 1586–95
- **Vaccine-Induced Memory CD8(+) T Cells Provide Clinical Benefit in HER2 Expressing Breast Cancer: A Mouse to Human Translational Study** *CLINICAL CANCER RESEARCH*
Crosby, E. J., Gwin, W. R., Blackwell, K., Marcom, P., Chang, S., Maecker, H. T., Broadwater, G., Hyslop, T. M., Kim, S., Rogatko, A., Lubkov, V., Snyder, J. C., Osada, et al
2019; 25 (9): 2725–36
- **Getting the Most from Your High-Dimensional Cytometry Data.** *Immunity*
Olsen, L. R., Pedersen, C. B., Leipold, M. D., Maecker, H. T.
2019; 50 (3): 535–36
- **A clinically meaningful metric of immune age derived from high-dimensional longitudinal monitoring.** *Nature medicine*
Alpert, A., Pickman, Y., Leipold, M., Rosenberg-Hasson, Y., Ji, X., Gaujoux, R., Rabani, H., Starovetsky, E., Kveler, K., Schaffert, S., Furman, D., Caspi, O., Rosenschein, et al
2019
- **Penalized Supervised Star Plots: Example Application in Influenza-Specific CD4+T Cells** *VIRAL IMMUNOLOGY*
Holmes, T. H., Subrahmanyam, P. B., Wang, W., Maecker, H. T.
2019; 32 (2): 102–9
- **The anatomy of single cell mass cytometry data** *CYTOMETRY PART A*
Olsen, L. R., Leipold, M. D., Pedersen, C. B., Maecker, H.
2019; 95A (2): 156–72
- **Mycophenolate mofetil reduces STAT3 phosphorylation in systemic lupus erythematosus patients.** *JCI insight*
Slight-Webb, S., Guthridge, J. M., Chakravarty, E. F., Chen, H., Lu, R., Macwana, S., Bean, K., Maecker, H. T., Utz, P. J., James, J. A.
2019; 4 (2)
- **Value of Neutrophil to Lymphocyte Ratio and Its Trajectory in Patients Hospitalized With Acute Heart Failure and Preserved Ejection Fraction.** *The American journal of cardiology*
Borkar, K. A., Kobayashi, Y. n., Amsalem, M. n., Ataam, J. A., Moneghetti, K. J., Cauwenberghs, N. n., Horne, B. D., Knowlton, K. U., Maecker, H. n., Kuznetsova, T. n., Heidenreich, P. A., Haddad, F. n.
2019
- **Pembrolizumab in Relapsed and Refractory Mycosis Fungoides and Sézary Syndrome: A Multicenter Phase II Study.** *Journal of clinical oncology : official journal of the American Society of Clinical Oncology*
Khodadoust, M. S., Rook, A. H., Porcu, P. n., Foss, F. n., Moskowitz, A. J., Shustov, A. n., Shanbhag, S. n., Sokol, L. n., Fling, S. P., Ramchurren, N. n., Pierce, R. n., Davis, A. n., Shine, et al
2019: JCO1901056
- **Guidelines for Gating Flow Cytometry Data for Immunological Assays.** *Methods in molecular biology (Clifton, N.J.)*
Staats, J. n., Divekar, A. n., McCoy, J. P., Maecker, H. T.

2019; 2032: 81–104

- **Sustained outcomes in oral immunotherapy for peanut allergy (POISED study): a large, randomised, double-blind, placebo-controlled, phase 2 study.** *Lancet (London, England)*
Chinthrajah, R. S., Purington, N. n., Andorf, S. n., Long, A. n., O'Laughlin, K. L., Lyu, S. C., Manohar, M. n., Boyd, S. D., Tibshirani, R. n., Maecker, H. n., Plaut, M. n., Mukai, K. n., Tsai, et al
2019
- **SIMON, an Automated Machine Learning System, Reveals Immune Signatures of Influenza Vaccine Responses.** *Journal of immunology (Baltimore, Md. : 1950)*
Tomic, A. n., Tomic, I. n., Rosenberg-Hasson, Y. n., Dekker, C. L., Maecker, H. T., Davis, M. M.
2019
- **Autoimmunity to hypocretin and molecular mimicry to flu in type 1 narcolepsy.** *Proceedings of the National Academy of Sciences of the United States of America*
Luo, G., Ambati, A., Lin, L., Bonvalet, M., Partinen, M., Ji, X., Maecker, H. T., Mignot, E. J.
2018
- **Baseline Gastrointestinal Eosinophilia Is Common in Oral Immunotherapy Subjects With IgE-Mediated Peanut Allergy.** *Frontiers in immunology*
Wright, B. L., Fernandez-Becker, N. Q., Kambham, N., Purington, N., Tupa, D., Zhang, W., Rank, M. A., Kita, H., Shim, K. P., Bunning, B. J., Doyle, A. D., Jacobsen, E. A., Boyd, et al
2018; 9: 2624
- **Interleukin 4 is inactivated via selective disulfide-bond reduction by extracellular thioredoxin.** *Proceedings of the National Academy of Sciences of the United States of America*
Plugis, N. M., Weng, N., Zhao, Q., Palanski, B. A., Maecker, H. T., Habtezion, A., Khosla, C.
2018
- **JAK-STAT signaling is activated in the kidney and peripheral blood cells of patients with focal segmental glomerulosclerosis.** *Kidney international*
Tao, J., Mariani, L., Eddy, S., Maecker, H., Kambham, N., Mehta, K., Hartman, J., Wang, W., Kretzler, M., Lafayette, R. A.
2018
- **Baseline immune profile by CyTOF can predict response to an investigational adjuvanted vaccine in elderly adults.** *Journal of translational medicine*
Lingblom, C. M., Kowli, S., Swaminathan, N., Maecker, H. T., Lambert, S. L.
2018; 16 (1): 153
- **Comparison of CyTOF assays across sites: Results of a six-center pilot study** *JOURNAL OF IMMUNOLOGICAL METHODS*
Leipold, M. D., Obermoser, G., Fenwick, C., Kleinstuber, K., Rashidi, N., McNevin, J. P., Nau, A. N., Wagar, L. E., Rozot, V., Davis, M. M., DeRosa, S., Pantaleo, G., Scriba, et al
2018; 453: 37–43
- **Food allergy and omics.** *The Journal of allergy and clinical immunology*
Dhondalay, G. K., Rael, E. n., Acharya, S. n., Zhang, W. n., Sampath, V. n., Galli, S. J., Tibshirani, R. n., Boyd, S. D., Maecker, H. n., Nadeau, K. C., Andorf, S. n.
2018; 141 (1): 20–29
- **Differences in multiple immune parameters between Indian and U.S. infants.** *PloS one*
Rathore, D. K., Holmes, T. H., Nadeau, K. C., Mittal, P., Batra, A., Rosenberg-Hasson, Y., Sopory, S., Gupta, R., Chellani, H. K., Aggarwal, K. C., Bal, V., Natchu, U. C., Bhatnagar, et al
2018; 13 (11): e0207297
- **Multiparameter Intracellular Cytokine Staining** *FLOW CYTOMETRY PROTOCOLS, 4TH EDITION*
Lovelace, P., Maecker, H. T., Hawley, T. S., Hawley, R. G.
2018; 1678: 151–66
- **Mass Cytometry Assays for Antigen-Specific T Cells Using CyTOF** *FLOW CYTOMETRY PROTOCOLS, 4TH EDITION*
Lin, D., Maecker, H. T., Hawley, T. S., Hawley, R. G.
2018; 1678: 37–47
- **Distinct predictive biomarker candidates for response to anti-CTLA-4 and anti-PD-1 immunotherapy in melanoma patients.** *Journal for immunotherapy of cancer*
Subrahmanyam, P. B., Dong, Z. n., Guseleinertner, D. n., Giobbie-Hurder, A. n., Severgnini, M. n., Zhou, J. n., Manos, M. n., Eastman, L. M., Maecker, H. T., Hodi, F. S.

2018; 6 (1): 18

- **Value of Circulating Cytokine Profiling During Submaximal Exercise Testing in Myalgic Encephalomyelitis/Chronic Fatigue Syndrome.** *Scientific reports*
Moneghetti, K. J., Skhiri, M. n., Contrepois, K. n., Kobayashi, Y. n., Maecker, H. n., Davis, M. n., Snyder, M. n., Haddad, F. n., Montoya, J. G.
2018; 8 (1): 2779
- **Lupus Nephritis in Isolation or Accompanied By Extra-Renal Manifestations: Early Lessons from the Accelerating Medicines Partnership**
James, J. A., Petri, M., Puttermann, C., Diamond, B., Wofsy, D., Lee, C., Fine, D., Broder, A. R., Clancy, R. M., Izmirly, P. M., Belmont, M., Bornkamp, N., Davidson, et al
WILEY.2017
- **Continuous immunotypes describe human immune variation and predict diverse responses** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Kaczorowski, K. J., Shekhar, K., Nkulikiyimfura, D., Dekker, C. L., Maecker, H., Davis, M. M., Chakraborty, A. K., Brodin, P.
2017; 114 (30): E6097–E6106
- **Cord blood T cell subpopulations and associations with maternal cadmium and arsenic exposures** *PLOS ONE*
Nygaard, U. C., Li, Z., Palys, T., Jackson, B., Subbiah, M., Malipatlolla, M., Sampath, V., Maecker, H., Karagas, M. R., Nadeau, K. C.
2017; 12 (6): e0179606
- **Antigen Availability Shapes T Cell Differentiation and Function during Tuberculosis** *CELL HOST & MICROBE*
Moguche, A. O., Musvovi, M., Penn-Nicholson, A., Plumlee, C. R., Mearns, H., Geldenhuys, H., Smit, E., Abrahams, D., Rozot, V., Dintwe, O., Hoff, S. T., Kromann, I., Ruhwald, et al
2017; 21 (6): 695-+
- **Immune Checkpoint Function of CD85j in CD8 T Cell Differentiation and Aging** *FRONTIERS IN IMMUNOLOGY*
Gustafson, C. E., Qi, Q., Hutter-Saunders, J., Gupta, S., Jadhav, R., Newell, E., Maecker, H., Weyand, C. M., Goronzy, J. J.
2017; 8: 692
- **Reconstitution of immune cell populations in multiple sclerosis patients after autologous stem cell transplantation.** *Clinical and experimental immunology*
Karnell, F. G., LIN, D., Motley, S., Duhen, T., Lim, N., Campbell, D. J., Turka, L. A., Maecker, H. T., Harris, K. M.
2017
- **Systems approach to uncover signaling networks in primary immunodeficiency diseases.** *Journal of allergy and clinical immunology*
Choi, J., Fernandez, R., Maecker, H. T., Butte, M. J.
2017
- **Immunotherapy biomarkers 2016: overcoming the barriers** *JOURNAL FOR IMMUNOTHERAPY OF CANCER*
Gulley, J. L., Berzofsky, J. A., Butler, M. O., Cesano, A., Fox, B. A., Gnijatic, S., Janetzki, S., Kalavar, S., Karanikas, V., Khleif, S. N., Kirsch, I., Lee, P. P., MacCallum, et al
2017; 5: 29
- **Assessing basophil activation by using flow cytometry and mass cytometry in blood stored 24 hours before analysis** *JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY*
Mukai, K., Gaudenzio, N., Gupta, S., Vivanco, N., Bendall, S. C., Maecker, H. T., Chinthurajah, R. S., Tsai, M., Nadeau, K. C., Galli, S. J.
2017; 139 (3): 889-?
- **Opening the Door on the CMV Immune Response in Aging.** *Journal of infectious diseases*
Maecker, H. T.
2017
- **Isolation of Peripheral Blood Mononuclear Cells Using Vacutainer® Cellular Preparation Tubes (CPTTM).** *Bio-protocol*
Puleo, A., Carroll, C., Maecker, H. T., Gupta, R.
2017; 7 (2): e2103
- **Wild immunology assessed by multidimensional mass cytometry.** *Cytometry. Part A : the journal of the International Society for Analytical Cytology*
Japp, A. S., Hoffmann, K., Schlickeiser, S., Glauben, R., Nikolaou, C., Maecker, H. T., Braun, J., Matzmohr, N., Sawitzki, B., Siegmund, B., Radbruch, A., Volk, H., Frentsch, et al
2017; 91 (1): 85-95
- **Isolation of PBMCs Using Vacutainer® Cellular Preparation Tubes** *Bio-protocol*

- Puleo, A., Carroll, C., Maecker, H., Gupta, R.
2017; 7 (2)
- **Autoantibody profiling on a plasmonic nano-gold chip for the early detection of hypertensive heart disease.** *Proceedings of the National Academy of Sciences of the United States of America*
Li, X. n., Kuznetsova, T. n., Cauwenberghs, N. n., Wheeler, M. n., Maecker, H. n., Wu, J. C., Haddad, F. n., Dai, H. n.
2017; 114 (27): 7089–94
 - **Cytokine signature associated with disease severity in chronic fatigue syndrome patients.** *Proceedings of the National Academy of Sciences of the United States of America*
Montoya, J. G., Holmes, T. H., Anderson, J. N., Maecker, H. T., Rosenberg-Hasson, Y. n., Valencia, I. J., Chu, L. n., Younger, J. W., Tato, C. M., Davis, M. M.
2017; 114 (34): E7150–E7158
 - **CyTOF Measurement of Immunocompetence Across Major Immune Cell Types.** *Current protocols in cytometry*
Subrahmanyam, P. B., Maecker, H. T.
2017; 82: 9.54.1–9.54.12
 - **Characterizing CD137 Upregulation on NK cells in Patients Receiving Monoclonal Antibody Therapy.** *Annals of oncology*
MAKKOUK, A., Sundaram, V., Chester, C., Chang, S., Colevas, A. D., Sunwoo, J. B., Maecker, H., Desai, M., Kohrt, H. E.
2016
 - **Cytokine profiles in patients with toxoplasmic lymphadenitis in the setting of pregnancy.** *Cytokine*
Pomares, C., Holmes, T. H., Estran, R., Press, C. J., Ramirez, R., Talucod, J., Maecker, H., Rosenberg-Hasson, Y., Montoya, J. G.
2016; 90: 14–20
 - **Defective T Memory Cell Differentiation after Varicella Zoster Vaccination in Older Individuals.** *PLoS pathogens*
Qi, Q., Cavanagh, M. M., Le Saux, S., Wagar, L. E., Mackey, S., Hu, J., Maecker, H., Swan, G. E., Davis, M. M., Dekker, C. L., Tian, L., Weyand, C. M., Goronzy, et al
2016; 12 (10)
 - **Immune Profiles to Predict Response to Desensitization Therapy in Highly HLA-Sensitized Kidney Transplant Candidates** *PLOS ONE*
Yabu, J. M., Siebert, J. C., Maecker, H. T.
2016; 11 (4)
 - **Successful immunotherapy induces previously unidentified allergen-specific CD4+ T-cell subsets.** *Proceedings of the National Academy of Sciences of the United States of America*
Ryan, J. F., Hovde, R., Glanville, J., Lyu, S., Ji, X., Gupta, S., Tibshirani, R. J., Jay, D. C., Boyd, S. D., Chinthurajah, R. S., Davis, M. M., Galli, S. J., Maecker, et al
2016; 113 (9): E1286–95
 - **Platinum-conjugated antibodies for application in mass cytometry.** *Cytometry. Part A : the journal of the International Society for Analytical Cytology*
Mei, H. E., Leipold, M. D., Maecker, H. T.
2016; 89 (3): 292–300
 - **Standardizing Flow Cytometry Immunophenotyping Analysis from the Human ImmunoPhenotyping Consortium** *SCIENTIFIC REPORTS*
Finak, G., Langweiler, M., Jaimes, M., Malek, M., Taghiyar, J., Korin, Y., Raddassi, K., Devine, L., Obermoser, G., Pekalski, M. L., Pontikos, N., Diaz, A., Heck, et al
2016; 6
 - **Immunodynamics: a cancer immunotherapy trials network review of immune monitoring in immuno-oncology clinical trials.** *Journal for immunotherapy of cancer*
Kohrt, H. E., Tumeh, P. C., Benson, D., Bhardwaj, N., Brody, J., Formenti, S., Fox, B. A., Galon, J., June, C. H., Kalos, M., Kirsch, I., Kleen, T., Kroemer, et al
2016; 4: 15–?
 - **Similarities in the Markers of Inflammation Between Men With Syphilis and Women With Increased Risk of HIV Acquisition.** *Clinical infectious diseases : an official publication of the Infectious Diseases Society of America*
Kojima, N. n., Bristow, C. C., Maecker, H. n., Rosenberg-Hasson, Y. n., Leon, S. R., Vargas, S. K., Konda, K. A., Caceres, C. F., Klausner, J. D.
2016; 62 (2): 265–66
 - **Novel technologies and emerging biomarkers for personalized cancer immunotherapy.** *Journal for immunotherapy of cancer*
Yuan, J., Hegde, P. S., Clynes, R., Foukas, P. G., Harari, A., Kleen, T. O., Kvistborg, P., Maccalli, C., Maecker, H. T., Page, D. B., Robins, H., Song, W., Stack, et al

2016; 4: 3-?

- **Computationally efficient multidimensional analysis of complex flow cytometry data using second order polynomial histograms CYTOMETRY PART A**
Zaunders, J., Jing, J., Leipold, M., Maecker, H., Kelleher, A. D., Koch, I.
2016; 89A (1): 44-58
- **Cytokines profile in hypertensive patients with left ventricular remodeling and dysfunction. Journal of the American Society of Hypertension**
Kuznetsova, T., Haddad, F., Knez, J., Rosenberg-Hasson, Y., Sung, J., Cauwenberghs, N., Thijs, L., Karakikes, I., Maecker, H., Mahaffey, K. W., Wu, J. C., Staessen, J. A.
2015; 9 (12): 975-984 e3
- **Algorithmic Tools for Mining High-Dimensional Cytometry Data. Journal of immunology (Baltimore, Md. : 1950)**
Chester, C., Maecker, H. T.
2015; 195 (3): 773-9
- **Large-Scale and Comprehensive Immune Profiling and Functional Analysis of Normal Human Aging PLOS ONE**
Whiting, C. C., Siebert, J., Newman, A. M., Du, H., Alizadeh, A. A., Goronyi, J., Weyand, C. M., Krishnan, E., Fathman, C. G., Maecker, H. T.
2015; 10 (7)
- **Immunologic Network and Response to Intramyocardial CD34(+) Stem Cell Therapy in Patients With Dilated Cardiomyopathy JOURNAL OF CARDIAC FAILURE**
Haddad, F., Sever, M., Poglajen, G., Lezaic, L., Yang, P., Maecker, H., Davis, M., Kuznetsova, T., Wu, J. C., Vrtovec, B.
2015; 21 (7): 572-582
- **Cytokine-stimulated Phosphoflow of PBMC Using CyTOF Mass Cytometry. Bio-protocol**
Fernandez, R., Maecker, H.
2015; 5 (11)
- **Cytokine-Stimulated Phosphoflow of Whole Blood Using CyTOF Mass Cytometry. Bio-protocol**
Fernandez, R., Maecker, H.
2015; 5 (11)
- **Mass cytometry as a platform for the discovery of cellular biomarkers to guide effective rheumatic disease therapy ARTHRITIS RESEARCH & THERAPY**
Nair, N., Mei, H. E., Chen, S., Hale, M., Nolan, G. P., Maecker, H. T., Genovese, M., Fathman, C. G., Whiting, C. C.
2015; 17
- **flowCL: ontology-based cell population labelling in flow cytometry BIOINFORMATICS**
Courtot, M., Meskas, J., Diehl, A. D., Droumeva, R., Gottardo, R., Jalali, A., Taghiyar, M. J., Maecker, H. T., McCoy, J. P., Ruttenberg, A., Scheuermann, R. H., Brinkman, R. R.
2015; 31 (8): 1337-1339
- **Intracellular Cytokine Staining (ICS) on Human Lymphocytes or Peripheral Blood Mononuclear Cells (PBMCs). Bio-protocol**
Gupta, S., Maecker, H.
2015; 5 (5): e1442
- **Cytomegalovirus infection enhances the immune response to influenza. Science translational medicine**
Furman, D., Jojic, V., Sharma, S., Shen-Orr, S. S., Angel, C. J., Onengut-Gumuscu, S., Kidd, B. A., Maecker, H. T., Concannon, P., Dekker, C. L., Thomas, P. G., Davis, M. M.
2015; 7 (281): 281ra43-?
- **Barcodeing of live human peripheral blood mononuclear cells for multiplexed mass cytometry. Journal of immunology**
Mei, H. E., Leipold, M. D., Schulz, A. R., Chester, C., Maecker, H. T.
2015; 194 (4): 2022-2031
- **Variation in the human immune system is largely driven by non-heritable influences. Cell**
Brodin, P., Jojic, V., Gao, T., Bhattacharya, S., Angel, C. J., Furman, D., Shen-Orr, S., Dekker, C. L., Swan, G. E., Butte, A. J., Maecker, H. T., Davis, M. M.
2015; 160 (1-2): 37-47
- **Mass cytometry as a platform for the discovery of cellular biomarkers to guide effective rheumatic disease therapy. Arthritis research & therapy**
Nair, N., Mei, H. E., Chen, S., Hale, M., Nolan, G. P., Maecker, H. T., Genovese, M., Fathman, C. G., Whiting, C. C.
2015; 17: 127-?

- **Thinking outside the gate: single-cell assessments in multiple dimensions.** *Immunity*
Kvistborg, P. n., Gouttefangeas, C. n., Aghaeepour, N. n., Cazaly, A. n., Chattopadhyay, P. K., Chan, C. n., Eckl, J. n., Finak, G. n., Hadrup, S. R., Maecker, H. T., Maurer, D. n., Mosmann, T. n., Qiu, et al
2015; 42 (4): 591–92
- **Intracellular Cytokine Staining on PBMCs Using CyTOF™ Mass Cytometry.** *Bio-protocol*
Lin, D. n., Gupta, S. n., Maecker, H. T.
2015; 5 (1)
- **Predictors of clinical response to immunotherapy with or without radiotherapy.** *Journal of radiation oncology*
Hiniker, S. M., Maecker, H. T., Knox, S. J.
2015; 4: 339-345
- **Phenotyping of Live Human PBMC using CyTOF™ Mass Cytometry.** *Bio-protocol*
Leipold, M. D., Maecker, H. T.
2015; 5 (2)
- **Multiparameter Phenotyping of Human PBMCs Using Mass Cytometry.** *Methods in molecular biology (Clifton, N.J.)*
Leipold, M. D., Newell, E. W., Maecker, H. T.
2015; 1343: 81-95
- **Immune monitoring technology primer: flow and mass cytometry.** *Journal for immunotherapy of cancer*
Maecker, H. T., Harari, A.
2015; 3: 44-?
- **mTOR inhibition improves immune function in the elderly** *SCIENCE TRANSLATIONAL MEDICINE*
Mannick, J. B., Del Giudice, G., Lattanzi, M., Valiante, N. M., Praestgaard, J., Huang, B., Lonetto, M. A., Maecker, H. T., Kovarik, J., Carson, S., Glass, D. J., Klickstein, L. B.
2014; 6 (268)
- **In utero arsenic exposure and fetal immune repertoire in a US pregnancy cohort** *CLINICAL IMMUNOLOGY*
Nadeau, K. C., Li, Z., Farzan, S., Koestler, D., Robbins, D., Fei, D. L., Malipatlolla, M., Maecker, H., Enelow, R., Korrick, S., Karagas, M. R.
2014; 155 (2): 188-197
- **The Split Virus Influenza Vaccine rapidly activates immune cells through Fc gamma receptors** *VACCINE*
O'Gorman, W. E., Huang, H., Wei, Y., Davis, K. L., Leipold, M. D., Bendall, S. C., Kidd, B. A., Dekker, C. L., Maecker, H. T., Chien, Y., Davis, M. M.
2014; 32 (45): 5989-5997
- **Monitoring the immune competence of cancer patients to predict outcome** *CANCER IMMUNOLOGY IMMUNOTHERAPY*
Chang, S., Kohrt, H., Maecker, H. T.
2014; 63 (7): 713-719
- **IFN Priming Is Necessary but Not Sufficient To Turn on a Migratory Dendritic Cell Program in Lupus Monocytes** *JOURNAL OF IMMUNOLOGY*
Rodriguez-Pla, A., Patel, P., Maecker, H. T., Rossello-Urgell, J., Baldwin, N., Bennett, L., Cantrell, V., Baisch, J., Punaro, M., Gotte, A., Nassi, L., Wright, T., Palucka, et al
2014; 192 (12): 5586-5598
- **Effects of serum and plasma matrices on multiplex immunoassays.** *Immunologic research*
Rosenberg-Hasson, Y., Hansmann, L., Liedtke, M., Herschmann, I., Maecker, H. T.
2014; 58 (2-3): 224-233
- **Vitamin D Deficiency in a Multiethnic Healthy Control Cohort and Altered Immune Response in Vitamin D Deficient European-American Healthy Controls** *PLOS ONE*
Ritterhouse, L. L., Lu, R., Shah, H. B., Robertson, J. M., Fife, D. A., Maecker, H. T., Du, H., Fathman, C. G., Chakravarty, E. F., Scofield, R. H., Kamen, D. L., Guthridge, J. M., James, et al
2014; 9 (4)
- **Cytokine and chemokine patterns across 100 days after hematopoietic stem cell transplantation in children.** *Biology of blood and marrow transplantation*
DiCarlo, J., Agarwal-Hashmi, R., Shah, A., Kim, P., Craveiro, L., Killen, R., Rosenberg-Hasson, Y., Maecker, H.
2014; 20 (3): 361-369

- **Influence of Frequent Infectious Exposures on General and Varicella-Zoster Virus-Specific Immune Responses in Pediatricians** *CLINICAL AND VACCINE IMMUNOLOGY*
Ogunjimi, B., Smits, E., Heynderickx, S., Van Den Bergh, J., Bilcke, J., Jansens, H., Malfait, R., Ramet, J., Maecker, H. T., Cools, N., Beutels, P., Van Damme, P. 2014; 21 (3): 417-426
- **Peanut oral immunotherapy results in increased antigen-induced regulatory T-cell function and hypomethylation of forkhead box protein 3 (FOXP3).** *Journal of allergy and clinical immunology*
Syed, A., Garcia, M. A., Lyu, S., Bucayu, R., Kohli, A., Ishida, S., Berglund, J. P., Tsai, M., Maecker, H., O'Riordan, G., Galli, S. J., Nadeau, K. C. 2014; 133 (2): 500-510
- **Vitamin d deficiency in a multiethnic healthy control cohort and altered immune response in vitamin D deficient European-American healthy controls.** *PloS one*
Ritterhouse, L. L., Lu, R., Shah, H. B., Robertson, J. M., Fife, D. A., Maecker, H. T., Du, H., Fathman, C. G., Chakravarty, E. F., Scofield, R. H., Kamen, D. L., Guthridge, J. M., James, et al
2014; 9 (4)
- **Genetic and environmental determinants of human NK cell diversity revealed by mass cytometry.** *Science translational medicine*
Horowitz, A., Strauss-Albee, D. M., Leipold, M., Kubo, J., Nemat-Gorgani, N., Dogan, O. C., Dekker, C. L., Mackey, S., Maecker, H., Swan, G. E., Davis, M. M., Norman, P. J., Guethlein, et al
2013; 5 (208): 208ra145-?
- **A harmonized approach to intracellular cytokine staining gating: Results from an international multiconsortia proficiency panel conducted by the Cancer Immunotherapy Consortium (CIC/CRI).** *Cytometry. Part A : the journal of the International Society for Analytical Cytology*
McNeil, L. K., Price, L., Britten, C. M., Jaimes, M., Maecker, H., Odunsi, K., Matsuzaki, J., Staats, J. S., Thorpe, J., Yuan, J., Janetzki, S.
2013; 83 (8): 728-738
- **Apoptosis and other immune biomarkers predict influenza vaccine responsiveness.** *Molecular systems biology*
Furman, D., Jojic, V., Kidd, B., Shen-Orr, S., Price, J., Jarrell, J., Tse, T., Huang, H., Lund, P., Maecker, H. T., Utz, P. J., Dekker, C. L., Koller, et al
2013; 9: 659-?
- **Daily cytokine fluctuations, driven by leptin, are associated with fatigue severity in chronic fatigue syndrome: evidence of inflammatory pathology.** *Journal of translational medicine*
Stringer, E. A., Baker, K. S., Carroll, I. R., Montoya, J. G., Chu, L., Maecker, H. T., Younger, J. W.
2013; 11: 93-?
- **Experimental pain and opioid analgesia in volunteers at high risk for obstructive sleep apnea.** *PloS one*
Doufas, A. G., Tian, L., Padrez, K. A., Suwanprathes, P., Cardell, J. A., Maecker, H. T., Panousis, P.
2013; 8 (1)
- **The phenotypic distribution and functional profile of tuberculin-specific CD4 T-cells characterizes different stages of TB infection.** *Cytometry. Part B, Clinical cytometry*
Streitz, M., Fuhrmann, S., Thomas, D., Cheek, E., Nomura, L., Maecker, H., Martus, P., Aghaeepour, N., Brinkman, R. R., Volk, H., Kern, F.
2012; 82 (6): 360-368
- **T Cell Assays and MIATA: The Essential Minimum for Maximum Impact** *IMMUNITY*
Britten, C. M., Janetzki, S., Butterfield, L. H., Ferrari, G., Gouttefangeas, C., Huber, C., Kalos, M., Levitsky, H. I., Maecker, H. T., Melief, C. J., O'Donnell-Tormey, J., Odunsi, K., Old, et al
2012; 37 (1): 1-2
- **New tools for classification and monitoring of autoimmune diseases** *NATURE REVIEWS RHEUMATOLOGY*
Maecker, H. T., Lindstrom, T. M., Robinson, W. H., Utz, P. J., Hale, M., Boyd, S. D., Shen-Orr, S. S., Fathman, C. G.
2012; 8 (6): 317-328
- **The Stanford Data Miner: a novel approach for integrating and exploring heterogeneous immunological data** *JOURNAL OF TRANSLATIONAL MEDICINE*
Siebert, J. C., Munsil, W., Rosenberg-Hasson, Y., Davis, M. M., Maecker, H. T.
2012; 10
- **NK cells are dysfunctional in human chronic myelogenous leukemia before and on imatinib treatment and in BCR-ABL-positive mice** *LEUKEMIA*
Chen, C., Koschmieder, S., KERSTIENS, L., Schemionek, M., Altvater, B., Pscherer, S., Gerss, J., Maecker, H. T., Berdel, W. E., Juergens, H., Lee, P. P., Rossig, C.
2012; 26 (3): 465-474

- **Standardizing immunophenotyping for the Human Immunology Project** *NATURE REVIEWS IMMUNOLOGY*
Maecker, H. T., McCoy, J. P., Nussenblatt, R.
2012; 12 (3): 191-200