



Sean Bendall

Associate Professor of Pathology

Bio

ACADEMIC APPOINTMENTS

- Associate Professor, Pathology
- Member, Bio-X
- Member, Stanford Cancer Institute
- Member, Wu Tsai Neurosciences Institute

HONORS AND AWARDS

- NIH Director's New Innovator Award, National Institutes of Health (2016)
- NIH Pathway to Independence Award, NIH / NIGMS (2013)
- Dale F. Frey Breakthrough Scientist, Damon Runyon Cancer Research Foundation (2012)
- ISAC President's Award of Excellence, International Society for Advancement of Cytometry (2012)
- Fellowship, Canadian Institute of Health Research (CIHR) (2009)
- Fellowship, Damon Runyon Cancer Research Foundation (2009)

PROFESSIONAL EDUCATION

- PhD, University of Western Ontario , Proteomic Analysis of Human Embryonic Stem Cell Culture (2008)
- BSc, University of Victoria (2002)

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Our goal is to understand the mechanisms regulating the development of human systems (both embryonic and adult). In particular, we are interested in clarifying the roles of both protein coding genes as well as pathobiology (disease state or pathogen) known to be uniquely human – therefore, not analogously studied in model organisms. Drawing on both pluripotent stem cell biology, hematopoiesis, and immunology, combined with novel high-content single-cell analysis (CyTOF – Mass Cytometry) and imaging (MIBI-Multiplexed Ion Beam Imaging) we are creating templates of ‘normal’ human cellular behavior. Using these we can decipher the roles of protein regulators on cellular specification as well as the influence of human-specific pathobiology on system remodeling at the single cell level. This work will enable a better understanding of how disease corrupts this process. Ultimately, our objective will be to use such approaches to not only reveal how novel regulators function in the context of complex cellular systems, but also enable the mechanistic characterization of human pathobiology in primary human tissues. In doing so we will understand how changes in related physiological or pathological systems can be more readily recognized and controlled.

In addition to the lab's work on human hematopoiesis and pluripotent stem cell specification we are seeking collaborative partnerships surrounding problems in human immunology as well as in regenerative medicine, including efforts to exploit next generation single-cell analysis and new computational methods to create systems level models of these processes so that they may be better understood and directed.

Teaching

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Potchara Boonrat, Tim Chai, Jeanna Enriquez, Anthony François, Jodie Lunger, Tara Murty

Postdoctoral Faculty Sponsor

Davide Franchina, Avery Lam, Hadeesha Piyadasa

Doctoral Dissertation Advisor (AC)

Meelad Amouzgar, Bryan Cannon, Jessica Diarra, Rachel Ee, Benjamin Oberlton, Warren Reynolds

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Immunology (Phd Program)

Publications

PUBLICATIONS

- **Unravelling human hematopoietic progenitor cell diversity through association with intrinsic regulatory factors.** *bioRxiv : the preprint server for biology*
Favaro, P., Glass, D. R., Borges, L., Baskar, R., Reynolds, W., Ho, D., Bruce, T., Tebaykin, D., Scanlon, V. M., Shestopalov, I., Bendall, S. C.
2023
- **Spatial proteomics reveals human microglial states shaped by anatomy and neuropathology.** *Research square*
Mrdjen, D., Amouzgar, M., Cannon, B., Liu, C., Spence, A., McCaffrey, E., Bharadwaj, A., Tebaykin, D., Bukhari, S., Hartmann, F. J., Kagel, A., Vijayaragavan, K., Oliveria, et al
2023
- **Gestationally dependent immune organization at the maternal-fetal interface.** *Cell reports*
Moore, A. R., Vivanco Gonzalez, N., Plummer, K. A., Mitchel, O. R., Kaur, H., Rivera, M., Collica, B., Goldston, M., Filiz, F., Angelo, M., Palmer, T. D., Bendall, S. C.
2022; 41 (7): 111651
- **Single-cell spatial proteomic imaging for human neuropathology.** *Acta neuropathologica communications*
Vijayaragavan, K., Cannon, B. J., Tebaykin, D., Bosse, M., Baranski, A., Oliveria, J. P., Bukhari, S. A., Mrdjen, D., Corces, M. R., McCaffrey, E. F., Greenwald, N. F., Sigal, Y., Marquez, et al
2022; 10 (1): 158
- **Supervised dimensionality reduction for exploration of single-cell data by HSS-LDA.** *Patterns (New York, N.Y.)*
Amouzgar, M., Glass, D. R., Baskar, R., Averbukh, I., Kimmey, S. C., Tsai, A. G., Hartmann, F. J., Bendall, S. C.
2022; 3 (8): 100536
- **Integrating transcription-factor abundance with chromatin accessibility in human erythroid lineage commitment.** *Cell reports methods*
Baskar, R., Chen, A. F., Favaro, P., Reynolds, W., Mueller, F., Borges, L., Jiang, S., Park, H. S., Kool, E. T., Greenleaf, W. J., Bendall, S. C.
2022; 2 (3)
- **An Integrated Multi-omic Single-Cell Atlas of Human B Cell Identity.** *Immunity*
Glass, D. R., Tsai, A. G., Oliveria, J. P., Hartmann, F. J., Kimmey, S. C., Calderon, A. A., Borges, L. n., Glass, M. C., Wagar, L. E., Davis, M. M., Bendall, S. C.
2020; 53 (1): 217–32.e5
- **Multiplexed single-cell morphometry for hematopathology diagnostics.** *Nature medicine*
Tsai, A. G., Glass, D. R., Juntilla, M. n., Hartmann, F. J., Oak, J. S., Fernandez-Pol, S. n., Ohgami, R. S., Bendall, S. C.

2020; 26 (3): 408–17

- **Single-cell metabolic profiling of human cytotoxic T cells.** *Nature biotechnology*
Hartmann, F. J., Mrdjen, D. n., McCaffrey, E. n., Glass, D. R., Greenwald, N. F., Bharadwaj, A. n., Khair, Z. n., Verberk, S. G., Baranski, A. n., Baskar, R. n., Graf, W. n., Van Valen, D. n., Van den Bossche, et al
2020
- **MIBI-TOF: A multiplexed imaging platform relates cellular phenotypes and tissue structure.** *Science advances*
Keren, L., Bosse, M., Thompson, S., Risom, T., Vijayaragavan, K., McCaffrey, E., Marquez, D., Angoshtari, R., Greenwald, N. F., Fienberg, H., Wang, J., Kambham, N., Kirkwood, et al
2019; 5 (10): eaax5851
- **Comprehensive Immune Monitoring of Clinical Trials to Advance Human Immunotherapy.** *Cell reports*
Hartmann, F. J., Babbord, 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
- **Parallel analysis of tri-molecular biosynthesis with cell identity and function in single cells** *NATURE COMMUNICATIONS*
Kimmey, S. C., Borges, L., Baskar, R., Bendall, S. C.
2019; 10
- **Proliferation tracing with single-cell mass cytometry optimizes generation of stem cell memory-like T cells** *NATURE BIOTECHNOLOGY*
Good, Z., Borges, L., Gonzalez, N., Sahaf, B., Samusik, N., Tibshirani, R., Nolan, G. P., Bendall, S. C.
2019; 37 (3): 259–+
- **A Structured Tumor-Immune Microenvironment in Triple Negative Breast Cancer Revealed by Multiplexed Ion Beam Imaging** *CELL*
Keren, L., Bosse, M., Marquez, D., Angoshtari, R., Jain, S., Varma, S., Yang, S., Kurian, A., Van Valen, D., West, R., Bendall, S. C., Angelo, M.
2018; 174 (6): 1373–+
- **Single-cell developmental classification of B cell precursor acute lymphoblastic leukemia at diagnosis reveals predictors of relapse.** *Nature medicine*
Good, Z., Sarno, J., Jager, A., Samusik, N., Aghaeepour, N., Simonds, E. F., White, L., Lacayo, N. J., Fantl, W. J., Fazio, G., Gaipa, G., Biondi, A., Tibshirani, et al
2018; 24 (4): 474–83
- **Data-Driven Phenotypic Dissection of AML Reveals Progenitor-like Cells that Correlate with Prognosis** *CELL*
Levine, J. H., Simonds, E. F., Bendall, S. C., Davis, K. L., Amir, E. D., Tadmor, M. D., Litvin, O., Fienberg, H. G., Jager, A., Zunder, E. R., Finck, R., Gedman, A. L., Radtke, et al
2015; 162 (1): 184–197
- **Single-Cell Trajectory Detection Uncovers Progression and Regulatory Coordination in Human B Cell Development** *CELL*
Bendall, S. C., Davis, K. L., Amir, E. D., Tadmor, M. D., Simonds, E. F., Chen, T. J., Shenfeld, D. K., Nolan, G. P., Pe'er, D.
2014; 157 (3): 714–725
- **Multiplexed ion beam imaging of human breast tumors.** *Nature medicine*
Angelo, M., Bendall, S. C., Finck, R., Hale, M. B., Hitzman, C., Borowsky, A. D., Levenson, R. M., Lowe, J. B., Liu, S. D., Zhao, S., Natkunam, Y., Nolan, G. P.
2014; 20 (4): 436–442
- **Single-Cell Mass Cytometry of Differential Immune and Drug Responses Across a Human Hematopoietic Continuum** *SCIENCE*
Bendall, S. C., Simonds, E. F., Qiu, P., Amir, E. D., Krutzik, P. O., Finck, R., Bruggner, R. V., Melamed, R., Trejo, A., Ornatsky, O. I., Balderas, R. S., Plevritis, S. K., Sachs, et al
2011; 332 (6030): 687–696
- **Author Correction: Advances and prospects for the Human BioMolecular Atlas Program (HuBMAP).** *Nature cell biology*
Jain, S., Pei, L., Spraggins, J. M., Angelo, M., Carson, J. P., Gehlenborg, N., Ginty, F., Goncalves, J. P., Hagood, J. S., Hickey, J. W., Kelleher, N. L., Laurent, L. C., Lin, et al
2024
- **Human cerebrospinal fluid single exosomes in Parkinson's and Alzheimer's diseases.** *bioRxiv : the preprint server for biology*
Yakabi, K., Berson, E., Montine, K. S., Bendall, S. C., MacCoss, M. J., Poston, K. L., Montine, T. J.
2023
- **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
- **Phenotyping EMT and MET cellular states in lung cancer patient liquid biopsies at a personalized level using mass cytometry.** *Scientific reports*
Karacosta, L. G., Pancirer, D., Preiss, J. S., Benson, J. A., Trope, W., Shrager, J. B., Sung, A. W., Neal, J. W., Bendall, S. C., Wakelee, H., Plevritis, S. K.
2023; 13 (1): 21781
 - **Immuno-metabolic dendritic cell vaccine signatures associate with overall survival in vaccinated melanoma patients.** *Nature communications*
Adamik, J., Munson, P. V., Maurer, D. M., Hartmann, F. J., Bendall, S. C., Argüello, R. J., Butterfield, L. H.
2023; 14 (1): 7211
 - **Prior Knowledge Integration Improves Relapse Prediction and Identifies Relapse Associated Mechanisms in Childhood B Cell Acute Lymphoblastic Leukemia**
Koladiya, A., Jager, A., Culos, A., Merchant, M., Liu, Y., Stuani, L., Sarno, J., Domizi, P., Mullighan, C. G., Aghaepour, N., Bendall, S., Davis, K. L.
AMER SOC HEMATOLOGY.2023
 - **Loss-of-function mutations in *Dnmt3a* and *Tet2* lead to accelerated atherosclerosis and concordant macrophage phenotypes** *NATURE CARDIOVASCULAR RESEARCH*
Rauch, P. J., Gopakumar, J., Silver, A. J., Nachun, D., Ahmad, H., Mcconkey, M., Nakao, T., Bosse, M., Rentz, T., Gonzalez, N., Greenwald, N. F., Mccaffrey, E. F., Khair, et al
2023; 2 (9): 805–+
 - **Cross-species comparative analysis of single presynapses.** *Scientific reports*
Berson, E., Gajera, C. R., Phongpreecha, T., Perna, A., Bukhari, S. A., Becker, M., Chang, A. L., De Francesco, D., Espinosa, C., Ravindra, N. G., Postupna, N., Latimer, C. S., Shively, et al
2023; 13 (1): 13849
 - **High-dimensional profiling of pediatric immune responses to solid organ transplantation.** *Cell reports. Medicine*
Rao, M., Amouzgar, M., Harden, J. T., Lapasaran, M. G., Trickey, A., Armstrong, B., Odum, J., Debnam, T., Esquivel, C. O., Bendall, S. C., Martinez, O. M., Krams, S. M.
2023: 101147
 - **Expanded vacuum-stable gels for multiplexed high-resolution spatial histopathology.** *Nature communications*
Bai, Y., Zhu, B., Oliveria, J., Cannon, B. J., Feyaerts, D., Bosse, M., Vijayaragavan, K., Greenwald, N. F., Phillips, D., Schurch, C. M., Naik, S. M., Ganio, E. A., Gaudilliere, et al
2023; 14 (1): 4013
 - **Synthesis, Characterization, and Applications of a Superior Dendrimer-Based Polymer for Multiplexed Ion Beam Imaging Time-of-Flight Analysis.** *Biomacromolecules*
Kumar, R., Liu, C. C., Bendall, S. C., Angelo, M.
2023
 - **Dasatinib overcomes glucocorticoid resistance in B-cell acute lymphoblastic leukemia.** *Nature communications*
Sarno, J., Domizi, P., Liu, Y., Merchant, M., Pedersen, C. B., Jedoui, D., Jager, A., Nolan, G. P., Gaipa, G., Bendall, S. C., Bava, F., Davis, K. L.
2023; 14 (1): 2935
 - **Systems biology approaches to unravel lymphocyte subsets and function.** *Current opinion in immunology*
Kim, Y., Greenleaf, W. J., Bendall, S. C.
2023; 82: 102323
 - **NK-like CD8+ T cells are expanded in persistent Mycobacterium tuberculosis infection.** *Science immunology*
Roy Chowdhury, R., Valainis, J. R., Dubey, M., von Boehmer, L., Sola, E., Wilhelmy, J., Guo, J., Kask, O., Ohanyan, M., Sun, M., Huang, H., Huang, X., Nguyen, et al
2023; 8 (81): eade3525
 - **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

- **Spatial proteomics of tumor microenvironments reveal why location matters.** *Nature immunology*
Piyadasa, H., Angelo, M., Bendall, S. C.
2023
- **High-dimensional profiling of pediatric immune responses to solid organ transplantation**
Rao, M., Amouzgar, M., Harden, J. T., Lapasaran, M. G., Trickey, A., Armstrong, B., Odim, J., Debnam, T., Esquivel, C. O., Bendall, S. C., Martinez, O. M., Krams, S. M.
WILEY.2023
- **Polyunsaturated fatty acid-bound alpha-fetoprotein promotes immune suppression by altering human dendritic cell metabolism.** *Cancer research*
Munson, P. V., Adamik, J., Hartmann, F. J., Favaro, P. M., Ho, D., Bendall, S. C., Combes, A. J., Krummel, M. F., Zhang, K., Kelley, R. K., Butterfield, L. H.
2023
- **CELL TYPE-SPECIFIC TRANSCRIPTOMIC TRAJECTORIES UNDERLYING DISEASE PROGRESSION IN INCLUSION BODY MYOSITIS**
Wischniewski, S., Ikenaga, C., Kocharyan, A., Thaewel, T., Zulji, A., Rausch, H., Martin, C., Mrdjen, D., Brenner, D., Bunse, L., Tan, C., Thomas, L., Kutza, et al
CLINICAL & EXPER RHEUMATOLOGY.2023: 506-507
- **UNRAVELLING HUMAN HEMATOPOIETIC PROGENITOR CELL DIVERSITY THROUGH ASSOCIATION WITH INTRINSIC REGULATORY FACTORS**
Favaro, P., Glass, D., Borges, L., Baskar, R., Reynolds, W., Ho, D., Bruce, T., Tebaykin, D., Tsai, A., Shestopalov, I., Bendall, S.
ELSEVIER SCIENCE INC.2023: S79
- **IKAROS MEDIATES ANTIGEN ESCAPE FOLLOWING CD19 CAR T CELL THERAPY IN R/R B-ALL**
Domizi, P., Sarno, J., Jager, A., Rotiroti, M., Baskar, R., Reynolds, W., Sahaf, B., Bendall, S., Mullighan, C., Leahy, A., Myers, R., Grupp, S., Majzner, et al
WILEY.2022
- **DEEP MYELOID CELL PROFILING PROVIDES NEW INSIGHTS INTO MODULATORS OF CAR T CELL EXPANSION IN PATIENTS WITH SOLID TUMOR MALIGNANCIES**
Kaczanowska, S., Ramakrishna, S., Murty, T., Contreras, C., Alimadadi, A., Gutierrez, N., Jhaveri, A., Liu, Y., Altreuter, J., Michor, F., Duault, C., Balasubrahmanyam, P., Reynolds, et al
BMJ PUBLISHING GROUP.2022: A418
- **DEFINING T CELL EXHAUSTION AND MEMORY CORRELATES OF GD2 CAR T CELL EXPANSION IN PEDIATRIC PATIENTS WITH SOLID TUMOR MALIGNANCIES**
Murty, T., Ramakrishna, S., Kaczanowska, S., Contreras, C., Duault, C., Balasubrahmanyam, P., Reynolds, W., Baskar, R., Jhaveri, A., Liu, Y., Altreuter, J., Michor, F., Pichavant, et al
BMJ PUBLISHING GROUP.2022: A381
- **Post-infusion CAR T-Reg cells identify patients resistant to CD19-CAR therapy** *NATURE MEDICINE*
Good, Z., Spiegel, J. Y., Sahaf, B., Malipatlolla, M. B., Ehlinger, Z. J., Kurra, S., Desai, M. H., Reynolds, W. D., Lin, A., Vandris, P., Wu, F., Prabhu, S., Hamilton, et al
2022
- **Distinct metabolic states guide maturation of inflammatory and tolerogenic dendritic cells.** *Nature communications*
Adamik, J., Munson, P. V., Hartmann, F. J., Combes, A. J., Pierre, P., Krummel, M. F., Bendall, S. C., Arguello, R. J., Butterfield, L. H.
2022; 13 (1): 5184
- **The interaction of SWI/SNF with the ribosome regulates translation and confers sensitivity to translation pathway inhibitors in cancers with complex perturbations.** *Cancer research*
Ulicna, L., Kimmey, S. C., Weber, C. M., Allard, G. M., Wang, A., Bui, N. Q., Bendall, S. C., Crabtree, G. R., Bean, G. R., Van Rechem, C.
2022
- **An optimized protocol for phenotyping human granulocytes by mass cytometry.** *STAR protocols*
Vivanco Gonzalez, N., Oliveria, J., Tebaykin, D., Ivison, G. T., Mukai, K., Tsai, M. M., Borges, L., Nadeau, K. C., Galli, S. J., Tsai, A. G., Bendall, S. C.
2022; 3 (2): 101280
- **Human IL-10-producing B cells have diverse states that are induced from multiple B cell subsets.** *Cell reports*
Glass, M. C., Glass, D. R., Oliveria, J. P., Mbiribindi, B., Esquivel, C. O., Krams, S. M., Bendall, S. C., Martinez, O. M.
2022; 39 (3): 110728

- **Reproducible, high-dimensional imaging in archival human tissue by multiplexed ion beam imaging by time-of-flight (MIBI-TOF).** *Laboratory investigation; a journal of technical methods and pathology*
Liu, C. C., Bosse, M., Kong, A., Kagel, A., Kinders, R., Hewitt, S. M., Varma, S., van de Rijn, M., Nowak, S. H., Bendall, S. C., Angelo, M.
2022
- **Author Correction: The immunoregulatory landscape of human tuberculosis granulomas.** *Nature immunology*
McCaffrey, E. F., Donato, M., Keren, L., Chen, Z., Delmastro, A., Fitzpatrick, M. B., Gupta, S., Greenwald, N. F., Baranski, A., Graf, W., Kumar, R., Bosse, M., Fullaway, et al
2022
- **CytofIn enables integrated analysis of public mass cytometry datasets using generalized anchors.** *Nature communications*
Lo, Y., Keyes, T. J., Jager, A., Sarno, J., Domizi, P., Majeti, R., Sakamoto, K. M., Lacayo, N., Mullighan, C. G., Waters, J., Sahaf, B., Bendall, S. C., Davis, et al
2022; 13 (1): 934
- **Revealing new biology from multiplexed, metal-isotope-tagged, single-cell readouts.** *Trends in cell biology*
Baskar, R., Kimmey, S. C., Bendall, S. C.
2022
- **Natural Killer Cell Receptors and Ligands Are Associated With Markers of HIV-1 Persistence in Chronically Infected ART Suppressed Patients.** *Frontiers in cellular and infection microbiology*
Iverson, G. T., Vendrame, E., Martinez-Colon, G. J., Ranganath, T., Vergara, R., Zhao, N. Q., Martin, M. P., Bendall, S. C., Carrington, M., Cyktor, J. C., McMahon, D. K., Eron, J., Jones, et al
2022; 12: 757846
- **Variation of Immune Cell Responses in Humans Reveals Sex-Specific Coordinated Signaling Across Cell Types.** *Frontiers in immunology*
Fragiadakis, G. K., Bjornson-Hooper, Z. B., Madhiredy, D., Sachs, K., Chen, H., McIlwain, D. R., Spitzer, M. H., Bendall, S. C., Nolan, G. P.
2022; 13: 867016
- **The immunoregulatory landscape of human tuberculosis granulomas.** *Nature immunology*
McCaffrey, E. F., Donato, M., Keren, L., Chen, Z., Delmastro, A., Fitzpatrick, M. B., Gupta, S., Greenwald, N. F., Baranski, A., Graf, W., Kumar, R., Bosse, M., Fullaway, et al
2022
- **Transition to invasive breast cancer is associated with progressive changes in the structure and composition of tumor stroma.** *Cell*
Risom, T., Glass, D. R., Averbukh, I., Liu, C. C., Baranski, A., Kagel, A., McCaffrey, E. F., Greenwald, N. F., Rivero-Gutiérrez, B., Strand, S. H., Varma, S., Kong, A., Keren, et al
2022; 185 (2): 299-310.e18
- **Mass Synaptometry: Applying Mass Cytometry to Single Synapse Analysis.** *Methods in molecular biology (Clifton, N.J.)*
Gajera, C. R., Fernandez, R., Postupna, N., Montine, K. S., Keene, C. D., Bendall, S. C., Montine, T. J.
1800; 2417: 69-88
- **Macrophages are metabolically heterogeneous within the tumor microenvironment.** *Cell reports*
Geeraerts, X., Fernandez-Garcia, J., Hartmann, F. J., de Goede, K. E., Martens, L., Elkrin, Y., Debraekeleer, A., Stijlemans, B., Vandekerke, A., Rinaldi, G., De Rycke, R., Planque, M., Broekaert, et al
1800; 37 (13): 110171
- **Single-synapse analyses of Alzheimer's disease implicate pathologic tau, DJ1, CD47, and ApoE.** *Science advances*
Phongpreecha, T., Gajera, C. R., Liu, C. C., Vijayaragavan, K., Chang, A. L., Becker, M., Fallahzadeh, R., Fernandez, R., Postupna, N., Sherfield, E., Tebaykin, D., Latimer, C., Shively, et al
1800; 7 (51): eabk0473
- **Chromatin Content Capture Reveals Acute Leukaemia Oncogenic Vulnerability Point in Human B Cell Development**
Baskar, R., Favaro, P., Reynolds, W. D., Domizi, P., Tsai, A. G., Davis, K. L., Bendall, S.
AMER SOC HEMATOLOGY.2021
- **Ikaros Mediates Antigen Escape Following CD19 CAR T Cell Therapy in r/r B-ALL**
Domizi, P., Sarno, J., Jager, A., Baskar, R., Reynolds, W. D., Sahaf, B., Bendall, S., Mullighan, C. G., Leahy, A., Myers, R. M., Grupp, S. A., Sotillo, E., Barrett, et al
AMER SOC HEMATOLOGY.2021

- **Inhibition of Pre-BCR Signaling Mediates a Metabolic Switch in B-Cell Progenitor Acute Lymphoblastic Leukemia**
Liu, Y., Stuani, L., Jedoui, D., Merchant, M., Jager, A., Sarno, J., Mullighan, C. G., Hartmann, F. J., Bendall, S., Davis, K. L.
AMER SOC HEMATOLOGY.2021
- **Whole-cell segmentation of tissue images with human-level performance using large-scale data annotation and deep learning.** *Nature biotechnology*
Greenwald, N. F., Miller, G., Moen, E., Kong, A., Kagel, A., Dougherty, T., Fullaway, C. C., McIntosh, B. J., Leow, K. X., Schwartz, M. S., Pavelchek, C., Cui, S., Campplisson, et al
2021
- **Multiplexed Ion Beam Imaging: Insights into Pathobiology.** *Annual review of pathology*
Liu, C. C., McCaffrey, E. F., Greenwald, N. F., Soon, E., Risom, T., Vijayaragavan, K., Oliveria, J., Mrdjen, D., Bosse, M., Tebaykin, D., Bendall, S. C., Angelo, M.
2021
- **Multiplexed imaging reveals an IFN- γ -driven inflammatory state in nivolumab-associated gastritis.** *Cell reports. Medicine*
Ferrian, S., Liu, C. C., McCaffrey, E. F., Kumar, R., Nowicki, T. S., Dawson, D. W., Baranski, A., Glaspy, J. A., Ribas, A., Bendall, S. C., Angelo, M.
2021; 2 (10): 100419
- **Multiplexed imaging reveals an IFN-gamma-driven inflammatory state in nivolumab-associated gastritis** *CELL REPORTS MEDICINE*
Ferrian, S., Liu, C. C., McCaffrey, E. F., Kumar, R., Nowicki, T. S., Dawson, D. W., Baranski, A., Glaspy, J. A., Ribas, A., Bendall, S. C., Angelo, M.
2021; 2 (10)
- **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
- **Multiplexed Ion Beam Imaging Readout of Single-Cell Immunoblotting.** *Analytical chemistry*
Lomeli, G., Bosse, M., Bendall, S. C., Angelo, M., Herr, A. E.
2021
- **Mass-tag barcoding for multiplexed analysis of human synaptosomes and other anuclear events.** *Cytometry. Part A : the journal of the International Society for Analytical Cytology*
Gajera, C. R., Fernandez, R., Montine, K. S., Fox, E. J., Mrdjen, D., Postupna, N. O., Keene, C. D., Bendall, S. C., Montine, T. J.
2021
- **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
- **Immune-stimulating antibody conjugates elicit robust myeloid activation and durable antitumor immunity** *NATURE CANCER*
Ackerman, S. E., Pearson, C. I., Gregorio, J. D., Gonzalez, J. C., Kenkel, J. A., Hartmann, F. J., Luo, A., Ho, P. Y., LeBlanc, H., Blum, L. K., Kimmey, S. C., Luo, A., Nguyen, et al
2021; 2 (1): 18-+
- **Immune-stimulating antibody conjugates elicit robust myeloid activation and durable antitumor immunity.** *Nature cancer*
Ackerman, S. E., Pearson, C. I., Gregorio, J. D., Gonzalez, J. C., Kenkel, J. A., Hartmann, F. J., Luo, A., Ho, P. Y., LeBlanc, H., Blum, L. K., Kimmey, S. C., Luo, A., Nguyen, et al
2021; 2 (1): 18-33
- **Mass Cytometry Phenotyping of Human Granulocytes Reveals Novel Basophil Functional Heterogeneity.** *iScience*
Vivanco Gonzalez, N., Oliveria, J., Tebaykin, D., Iverson, G. T., Mukai, K., Tsai, M. M., Borges, L., Nadeau, K. C., Galli, S. J., Tsai, A. G., Bendall, S. C.
2020; 23 (11): 101724
- **COVALENT ATTACHMENT OF A TLR7/8 AGONIST TO TUMOR-TARGETING ANTIBODIES DRIVES POTENT ANTI-TUMOR EFFICACY BY SYNERGISTICALLY ACTIVATING FCGR- AND TLR- SIGNALING AND ENABLES SAFE SYSTEMIC ADMINISTRATION**
Ackerman, S., Hartmann, F., Pearson, C., Gonzalez, J., Ho, P., Kimmey, S., Luo, A., Ackerman, B., Lee, A., Laura, R., Paik, J., Henning, K., Jackson, et al
BMJ PUBLISHING GROUP.2020: A360

- **Single cell proteomics to capture human dysplasia and dysfunction**
Bendall, S.
AMER ASSOC CANCER RESEARCH.2020
- **Mapping the tumor and microenvironmental evolution underlying DCIS progression through multiplexed ion beam imaging.**
Risom, T., Rivero, B., Liu, C., Baranski, A., Strand, S., Greenwald, N., McCaffrey, E., Varma, S., Keren, L., Srivastava, S., Zhu, C., Vennam, S., Hwang, et al
AMER ASSOC CANCER RESEARCH.2020
- **PLEIOTROPIC EFFECTS OF IL-7 IN PROSTATE CANCER PATIENTS RECEIVING SIPULEUCEL-T VACCINATION**
Duault, C., Ramchurren, N., Pachynski, R., Fong, L., Bendall, S., Pichavant, M., Sahaf, B., Morishima, C., D'Amico, L., Cheever, M., Fling, S., Maecker, H.
BMJ PUBLISHING GROUP.2020: A160–A161
- **Integration of mechanistic immunological knowledge into a machine learning pipeline improves predictions** *NATURE MACHINE INTELLIGENCE*
Culos, A., Tsai, A. S., Stanley, N., Becker, M., Ghaemi, M. S., McIlwain, D. R., Fallahzadeh, R., Tanada, A., Nassar, H., Espinosa, C., Xenochristou, M., Ganio, E., Peterson, et al
2020
- **Integration of mechanistic immunological knowledge into a machine learning pipeline improves predictions.** *Nature machine intelligence*
Culos, A., Tsai, A. S., Stanley, N., Becker, M., Ghaemi, M. S., McIlwain, D. R., Fallahzadeh, R., Tanada, A., Nassar, H., Espinosa, C., Xenochristou, M., Ganio, E., Peterson, et al
2020; 2 (10): 619-628
- **A HIGHLY MULTIPLEXED SINGLE CELL PROTEOMIC SCREEN REVEALS THE PHENOTYPIC AND FUNCTIONAL LANDSCAPE OF THE HUMAN LYMPHO-MYELOID DIFFERENTIATION AXIS**
Kim, Y., Caleron, A., Glass, D., Tsai, A., Favaro, P., Baskar, R., Hartmann, F., Greenleaf, W., Bendall, S.
ELSEVIER SCIENCE INC.2020: S33
- **Validation of a model of pediatric leukemia based on pluripotent stem cells using mass cytometry**
Domingo-Reines, J., Kimmey, S., Vijayaragavan, K., Bosse, M., Bendall, S., Davis, K., Ramos-Mejia, V.
AMER ASSOC CANCER RESEARCH.2020: 95
- **CIMAC-CIDC CyTOF harmonization.**
Rahman, A., Sahaf, B., Davila, M., Fernandez, N., McWilliams, E., Millerchip, K., Bentebibel, S. E., Haymaker, C. L., Sigal, N., Duault, C., Thrash, E., Del Valle, D., Espiridion, et al
LIPPINCOTT WILLIAMS & WILKINS.2020
- **Diamonds in the doublets.** *Nature biotechnology*
Bendall, S. C.
2020
- **In-depth characterization of immune cells in preeclampsia using Multiplexed Ion Beam Imaging by Time-of-Flight (MIBI-TOF)**
Greenbaum, S., Bosse, M., Baranski, A., Khair, Z., Bruce, T., Tebaykin, D., Oliveria, J., Bendall, S. C., Winn, V. D., Angelo, M.
MOSBY-ELSEVIER.2020: S156–S157
- **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
- **Single-cell mass cytometry reveals cross-talk between inflammation-dampening and inflammation-amplifying cells in osteoarthritic cartilage** *Science Advances*
Grandi, F. ., Baskar, R., Smeriglio, P., Murkherjee, S., Indelli, P., F. Amanatullah, D., Goodman, S., Chu, C., Bendall, S., Bhutani, N.
2020; 6 (11)
- **Immune monitoring using mass cytometry and related high-dimensional imaging approaches.** *Nature reviews. Rheumatology*
Hartmann, F. J., Bendall, S. C.
2019
- **TRAIL-induced variation of cell signaling states provides nonheritable resistance to apoptosis.** *Life science alliance*
Baskar, R., Fienberg, H. G., Khair, Z., Favaro, P., Kimmey, S., Green, D. R., Nolan, G. P., Plevritis, S., Bendall, S. C.
2019; 2 (6)

- **Multiplexed Imaging for the simultaneous detection of nucleic acids and proteins to dissect the tissue immune landscape and microenvironment of viral diseases**
Jiang, S., Clave, X., Chan, C., Zhu, B., Bai, Y., Bosse, M., McIlwain, D., Bendall, S., Angelo, M., Estes, J., Nolan, G.
BMC.2019
- **IN-DEPTH CHARACTERIZATION OF GESTATIONAL IMMUNE DYNAMICS USING MASS CYTOMETRY**
Moore, A., Vivanco-Gonzalez, N., Plummer, K., Mitchel, O., Kaur, H., Rivera, M., Bendall, S., Palmer, T.
W B SAUNDERS CO LTD.2019: E87–E88
- **Glucose Metabolism Drives Histone Acetylation Landscape Transitions that Dictate Muscle Stem Cell Function.** *Cell reports*
Yucel, N., Wang, Y. X., Mai, T., Porpiglia, E., Lund, P. J., Markov, G., Garcia, B. A., Bendall, S. C., Angelo, M., Blau, H. M.
2019; 27 (13): 3939
- **Parallel analysis of tri-molecular biosynthesis with cell identity and function in single cells.** *Nature communications*
Kimmey, S. C., Borges, L., Baskar, R., Bendall, S. C.
2019; 10 (1): 1185
- **An Immune Atlas of Mid to Late Mouse Gestation.**
Moore, A. R., Vivanco-Gonzalez, N., Plummer, K., Kaur, H., Mitchel, O., Rivera, M., Bendall, S. C., Palmer, T. D.
SAGE PUBLICATIONS INC.2019: 345A–346A
- **A topological view of human CD34(+) cell state trajectories from integrated single-cell output and proteomic data** *BLOOD*
Knapp, D. F., Hammond, C. A., Wang, F., Aghaeepour, N., Miller, P. H., Beer, P. A., Pellacani, D., VanInsberghe, M., Hansen, C., Bendall, S. C., Nolan, G. P., Eaves, C. J.
2019; 133 (9): 927–39
- **Proliferation tracing with single-cell mass cytometry optimizes generation of stem cell memory-like T cells.** *Nature biotechnology*
Good, Z., Borges, L., Vivanco Gonzalez, N., Sahaf, B., Samusik, N., Tibshirani, R., Nolan, G. P., Bendall, S. C.
2019
- **A topological view of human CD34+ cell state trajectories from integrated single-cell output and proteomic data.** *Blood*
Knapp, D. J., Hammond, C. A., Wang, F., Aghaeepour, N., Miller, P. H., Beer, P. A., Pellacani, D., VanInsberghe, M., Hansen, C., Bendall, S. C., Nolan, G. P., Eaves, C. J.
2019
- **Scalable Conjugation and Characterization of Immunoglobulins with Stable Mass Isotope Reporters for Single-Cell Mass Cytometry Analysis.** *Methods in molecular biology (Clifton, N.J.)*
Hartmann, F. J., Simonds, E. F., Vivanco, N. n., Bruce, T. n., Borges, L. n., Nolan, G. P., Spitzer, M. H., Bendall, S. C.
2019; 1989: 55–81
- **Mapping lung cancer epithelial-mesenchymal transition states and trajectories with single-cell resolution.** *Nature communications*
Karacosta, L. G., Anchang, B. n., Ignatiadis, N. n., Kimmey, S. C., Benson, J. A., Shrager, J. B., Tibshirani, R. n., Bendall, S. C., Plevritis, S. K.
2019; 10 (1): 5587
- **The basis of cellular and regional vulnerability in Alzheimer's disease.** *Acta neuropathologica*
Mrdjen, D. n., Fox, E. J., Bukhari, S. A., Montine, K. S., Bendall, S. C., Montine, T. J.
2019
- **Comprehensive characterization of human decidual immune cells involvement in spiral artery remodelling**
Greenbaum, S., Rizzuto, G., Bosse, M., Keren, L., Kowk, S., van de Rijn, M., Bendall, S., Angelo, M.
MOSBY-ELSEVIER.2019: S27–S28
- **Scalable Conjugation and Characterization of Immunoglobulins with Stable Mass Isotope Reporters for Single-Cell Mass Cytometry Analysis** *MASS CYTOMETRY: METHODS AND PROTOCOLS*
Hartmann, F. J., Simonds, E. F., Vivanco, N., Bruce, T., Borges, L., Nolan, G. P., Spitzer, M. H., Bendall, S. C., McGuire, H. M., Ashhurst, T. M.
2019; 1989: 55–81
- **Serial transplantation reveals a critical role for endoglin in hematopoietic stem cell quiescence.** *Blood*
Borges, L., Oliveira, V. K., Baik, J., Bendall, S., Perlingeiro, R. C.
2018

- **Mass synaptometry: High-dimensional multi parametric assay for single synapses.** *Journal of neuroscience methods*
Gajera, C. R., Fernandez, R., Postupna, N., Montine, K. S., Fox, E. J., Tebaykin, D., Angelo, M., Bendall, S. C., Keene, C. D., Montine, T. J.
2018
- **Metal-isotope-tagged monoclonal antibodies for high-dimensional mass cytometry.** *Nature protocols*
Han, G., Spitzer, M. H., Bendall, S. C., Fantl, W. J., Nolan, G. P.
2018
- **A Universal Live Cell Barcoding-Platform for Multiplexed Human Single Cell Analysis.** *Scientific reports*
Hartmann, F. J., Simonds, E. F., Bendall, S. C.
2018; 8 (1): 10770
- **Identifying dynamic EMT states and constructing a proteomic EMT landscape of lung cancer using single cell multidimensional analysis**
Karacosta, L. G., Anchang, B., Kimmey, S., van de Rijn, M., Shrager, J. B., Bendall, S. C., Plevritis, S. K.
AMER ASSOC CANCER RESEARCH.2018
- **Individualized drug combination based on single-cell drug perturbations**
Anchang, B., Davis, K., Fienberg, H., Bendall, S., Karacosta, L., Nolan, G., Plevritis, S. K.
AMER ASSOC CANCER RESEARCH.2018
- **Publisher Correction: High-resolution myogenic lineage mapping by single-cell mass cytometry.** *Nature cell biology*
Porpiglia, E., Samusik, N., Van Ho, A. T., Cosgrove, B. D., Mai, T., Davis, K. L., Jager, A., Nolan, G. P., Bendall, S. C., Fantl, W. J., Blau, H. M.
2018
- **Ibrutinib-Mediated Inhibition of cGVHD Pathogenic Pre-Germinal Center B-Cells and Follicular Helper Cells While Preserving Immune Memory and Thi T-Cells**
Sahaf, B., Tebaykin, D., Hopper, M., Cheung, P., Bittencourt, F., Cutler, C., Arora, M., Waller, E. K., Jagasia, M., Pusic, I., Flowers, M. E., Logan, A. C., Jaglowski, et al
ELSEVIER SCIENCE INC.2018: S20–S21
- **DRUG-NEM: Optimizing drug combinations using single-cell perturbation response to account for intratumoral heterogeneity.** *Proceedings of the National Academy of Sciences of the United States of America*
Anchang, B. n., Davis, K. L., Fienberg, H. G., Williamson, B. D., Bendall, S. C., Karacosta, L. G., Tibshirani, R. n., Nolan, G. P., Plevritis, S. K.
2018; 115 (18): E4294–E4303
- **GateFinder: Projection-based Gating Strategy Optimization for Flow and Mass Cytometry.** *Bioinformatics (Oxford, England)*
Aghaeepour, N. n., Simonds, E. F., Knapp, D. J., Bruggner, R. n., Sachs, K. n., Culos, A. n., Gherardini, P. F., Samusik, N. n., Fragiadakis, G. n., Bendall, S. n., Gaudilliere, B. n., Angst, M. S., Eaves, et al
2018
- **High-resolution myogenic lineage mapping by single-cell mass cytometry** *NATURE CELL BIOLOGY*
Porpiglia, E., Samusik, N., Van Ho, A. T., Cosgrove, B. D., Mai, T., Davis, K. L., Jager, A., Nolan, G. P., Bendall, S. C., Fantl, W. J., Blau, H. M.
2017; 19 (5): 558-?
- **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., Chinthrajah, R. S., Tsai, M., Nadeau, K. C., Galli, S. J.
2017; 139 (3): 889-?
- **Assessing basophil activation by flow cytometry and mass cytometry in blood stored 24 hours before analysis**
Mukai, K., Gaudenzio, N., Gupta, S., Vivanco, N., Bendall, S. C., Maecker, H. T., Chinthrajah, R., Tsai, M., Nadeau, K. C., Galli, S. J.
MOSBY-ELSEVIER.2017: AB124
- **Systemic Immunity Is Required for Effective Cancer Immunotherapy.** *Cell*
Spitzer, M. H., Carmi, Y., Reticker-Flynn, N. E., Kwek, S. S., Madhiredy, D., Martins, M. M., Gherardini, P. F., Prestwood, T. R., Chabon, J., Bendall, S. C., Fong, L., Nolan, G. P., Engleman, et al
2017; 168 (3): 487-502 e15
- **Distinct signaling programs control human hematopoietic stem cell survival and proliferation.** *Blood*
Knapp, D. J., Hammond, C. A., Aghaeepour, N., Miller, P. H., Pellacani, D., Beer, P. A., Sachs, K., Qiao, W., Wang, W., Humphries, R. K., Sauvageau, G., Zandstra, P. W., Bendall, et al

2017; 129 (3): 307-318

- **APPLYING SINGLE-CELL MASS CYTOMETRY TO INVESTIGATE THE IMMUNE SYSTEM OF HIGHLY SENSITIZED PATIENTS WHO UNDERGO INTRAVENOUS IMMUNOGLOBULIN DESENSITIZATION TREATMENT.**
Wang, L., Bendall, S., Chang, C., Chen, G., Tyan, D. B.
ELSEVIER SCIENCE INC.2017: 37–38
- **Mutant IDH1 Downregulates ATM and Alters DNA Repair and Sensitivity to DNA Damage Independent of TET2.** *Cancer cell*
Inoue, S., Li, W. Y., Tseng, A., Beerman, I., Elia, A. J., Bendall, S. C., Lemonnier, F., Kron, K. J., Cescon, D. W., Hao, Z., Lind, E. F., Takayama, N., Planello, et al
2016; 30 (2): 337-348
- **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., Chinthrajah, R. S., Tsai, M., Nadeau, K. C., Galli, S. J.
2016
- **Visualization and cellular hierarchy inference of single-cell data using SPADE.** *Nature protocols*
Anchang, B., Hart, T. D., Bendall, S. C., Qiu, P., Bjornson, Z., Linderman, M., Nolan, G. P., Plevritis, S. K.
2016; 11 (7): 1264-1279
- **Wishbone identifies bifurcating developmental trajectories from single-cell data** *NATURE BIOTECHNOLOGY*
Setty, M., Tadmor, M. D., Reich-Zeliger, S., Ange, O., Salame, T. M., Kathail, P., Choi, K., Bendall, S., Friedman, N., Pe'er, D.
2016; 34 (6): 637-645
- **SESSION INTRODUCTION.** *Pacific Symposium on Biocomputing. Pacific Symposium on Biocomputing*
Samusik, N., Aghaeepour, N., Bendall, S.
2016; 22: 557-563
- **Single-cell systems-level analysis of human Toll-like receptor activation defines a chemokine signature in patients with systemic lupus erythematosus** *JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY*
O'Gorman, W. E., Hsieh, E. W., Savig, E. S., Gherardini, P. F., Hernandez, J. D., Hansmann, L., Balboni, I. M., Utz, P. J., Bendall, S. C., Fantl, W. J., Lewis, D. B., Nolan, G. P., Davis, et al
2015; 136 (5): 1326-1336
- **Synthetically Modified Viral Capsids as Versatile Carriers for Use in Antibody-Based Cell Targeting.** *Bioconjugate chemistry*
ElSohly, A. M., Netirojjanakul, C., Aanei, I. L., Jager, A., Bendall, S. C., Farkas, M. E., Nolan, G. P., Francis, M. B.
2015; 26 (8): 1590-1596
- **Synthetically Modified Viral Capsids as Versatile Carriers for Use in Antibody-Based Cell Targeting** *BIOCONJUGATE CHEMISTRY*
ElSohly, A. M., Netirojjanakul, C., Aanei, I. L., Jager, A., Bendall, S. C., Farkas, M. E., Nolan, G. P., Francis, M. B.
2015; 26 (8): 1590-1596
- **An interactive reference framework for modeling a dynamic immune system** *SCIENCE*
Spitzer, M. H., Gherardini, P. F., Fragiadakis, G. K., Bhattacharya, N., Yuan, R. T., Hotson, A. N., Finck, R., Carmi, Y., Zunder, E. R., Fantl, W. J., Bendall, S. C., Engleman, E. G., Nolan, et al
2015; 349 (6244): 155-?
- **IMMUNOLOGY. An interactive reference framework for modeling a dynamic immune system.** *Science*
Spitzer, M. H., Gherardini, P. F., Fragiadakis, G. K., Bhattacharya, N., Yuan, R. T., Hotson, A. N., Finck, R., Carmi, Y., Zunder, E. R., Fantl, W. J., Bendall, S. C., Engleman, E. G., Nolan, et al
2015; 349 (6244)
- **Conditional density-based analysis of T cell signaling in single-cell data** *SCIENCE*
Krishnaswamy, S., Spitzer, M. H., Mingueneau, M., Bendall, S. C., Litvin, O., Stone, E., Pe'er, D., Nolan, G. P.
2014; 346 (6213): 1079-?
- **NRASG12V oncogene facilitates self-renewal in a murine model of acute myelogenous leukemia.** *Blood*
Sachs, Z., LaRue, R. S., Nguyen, H. T., Sachs, K., Noble, K. E., Mohd Hassan, N. A., Diaz-Flores, E., Rathe, S. K., Sarver, A. L., Bendall, S. C., Ha, N. A., Diers, M. D., Nolan, et al
2014; 124 (22): 3274-3283

- **NRAS9(G12V) oncogene facilitates self-renewal in a murine model of acute myelogenous leukemia** *BLOOD*
Sachs, Z., LaRue, R. S., Nguyen, H. T., Sachs, K., Noble, K. E., Hassan, N. A., Diaz-Flores, E., Rathe, S. K., Sarver, A. L., Bendall, S. C., Ha, N. A., Diers, M. D., Nolan, et al
2014; 124 (22): 3274-3283
- **Single-cell mass cytometry of TCR signaling: Amplification of small initial differences results in low ERK activation in NOD mice** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Mingueneau, M., Krishnaswamy, S., Spitzer, M. H., Bendall, S. C., Stone, E. L., Hedrick, S. M., Pe'er, D., Mathis, D., Nolan, G. P., Benoist, C.
2014; 111 (46): 16466-16471
- **Single-cell mass cytometry of TCR signaling: amplification of small initial differences results in low ERK activation in NOD mice.** *Proceedings of the National Academy of Sciences of the United States of America*
Mingueneau, M., Krishnaswamy, S., Spitzer, M. H., Bendall, S. C., Stone, E. L., Hedrick, S. M., Pe'er, D., Mathis, D., Nolan, G. P., Benoist, C.
2014; 111 (46): 16466-16471
- **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
- **The Split Virus Influenza Vaccine rapidly activates immune cells through Fc γ 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
- **Clinical recovery from surgery correlates with single-cell immune signatures** *SCIENCE TRANSLATIONAL MEDICINE*
Gaudilliere, B., Fragiadakis, G. K., Bruggner, R. V., Nicolau, M., Finck, R., Tingle, M., Silva, J., Ganio, E. A., Yeh, C. G., Maloney, W. J., Huddleston, J. I., Goodman, S. B., Davis, et al
2014; 6 (255)
- **Clinical recovery from surgery correlates with single-cell immune signatures.** *Science translational medicine*
Gaudillière, B., Fragiadakis, G. K., Bruggner, R. V., Nicolau, M., Finck, R., Tingle, M., Silva, J., Ganio, E. A., Yeh, C. G., Maloney, W. J., Huddleston, J. I., Goodman, S. B., Davis, et al
2014; 6 (255): 255ra131-?
- **Single-cell mass cytometry analysis of human tonsil T cell remodeling by varicella zoster virus.** *Cell reports*
Sen, N., Mukherjee, G., Sen, A., Bendall, S. C., Sung, P., Nolan, G. P., Arvin, A. M.
2014; 8 (2): 633-645
- **Single-Cell Mass Cytometry Analysis of Human Tonsil T Cell Remodeling by Varicella Zoster Virus** *CELL REPORTS*
Sen, N., Mukherjee, G., Sen, A., Bendall, S. C., Sung, P., Nolan, G. P., Arvin, A. M.
2014; 8 (2): 632-644
- **The split-virus influenza vaccine activates Fc gamma receptors instead of Toll-like receptors**
O'Gorman, W., Huang, H., Wei, Y., Davis, K., Leipold, M., Bendall, S., Kidd, B., Dekker, C., Maecker, H., Chien, Y., Davis, M.
AMER ASSOC IMMUNOLOGISTS.2014
- **Antigen-Dependent Integration of Opposing Proximal TCR-Signaling Cascades Determines the Functional Fate of T Lymphocytes** *JOURNAL OF IMMUNOLOGY*
Wolchinsky, R., Hod-Marco, M., Oved, K., Shen-Orr, S. S., Bendall, S. C., Nolan, G. P., Reiter, Y.
2014; 192 (5): 2109-2119
- **viSNE enables visualization of high dimensional single-cell data and reveals phenotypic heterogeneity of leukemia.** *Nature biotechnology*
Amir, E. D., Davis, K. L., Tadmor, M. D., Simonds, E. F., Levine, J. H., Bendall, S. C., Shenfeld, D. K., Krishnaswamy, S., Nolan, G. P., Pe'er, D.
2013; 31 (6): 545-552
- **The transcriptional landscape of $\alpha\beta$ T cell differentiation.** *Nature immunology*
Mingueneau, M., Kreslavsky, T., Gray, D., Heng, T., Cruse, R., Ericson, J., Bendall, S., Spitzer, M. H., Nolan, G. P., Kobayashi, K., Von Boehmer, H., Mathis, D., Benoist, et al
2013; 14 (6): 619-632
- **Normalization of mass cytometry data with bead standards.** *Cytometry. Part A : the journal of the International Society for Analytical Cytology*
Finck, R., Simonds, E. F., Jager, A., Krishnaswamy, S., Sachs, K., Fantl, W., Pe'er, D., Nolan, G. P., Bendall, S. C.

2013; 83 (5): 483-494

- **Single Cell Mass Cytometry of Dysregulated Signaling Networks in Myeloproliferative Neoplasms and Secondary Acute Myeloid Leukemia** *54th Annual Meeting and Exposition of the American-Society-of-Hematology (ASH)*
Fisher, D. A., Simonds, E. F., Behbehani, G. K., Nolan, G. P., Bendall, S. C., Oh, S. T.
AMER SOC HEMATOLOGY.2012
- **MASS CYTOMETRY TO COMPREHENSIVELY STUDY SINGLE CELL SIGNALING IN BIOLOGY AND DISEASE** *12th Euroconference on Clinical Cell Analysis / 8th European Clinical Cytometry Course*
Bodenmiller, B., Zunder, E., Finck, R., Chen, T., Savig, E., Bruggner, R., Simonds, E., Bendall, S., Sachs, K., Krutzik, P., Nolan, G.
WILEY-BLACKWELL.2012: 376-77
- **Multiplexed mass cytometry profiling of cellular states perturbed by small-molecule regulators** *NATURE BIOTECHNOLOGY*
Bodenmiller, B., Zunder, E. R., Finck, R., Chen, T. J., Savig, E. S., Bruggner, R. V., Simonds, E. F., Bendall, S. C., Sachs, K., Krutzik, P. O., Nolan, G. P.
2012; 30 (9): 858-U89
- **Single-cell mass cytometry adapted to measurements of the cell cycle.** *Cytometry. Part A : the journal of the International Society for Analytical Cytology*
Behbehani, G. K., Bendall, S. C., Clutter, M. R., Fantl, W. J., Nolan, G. P.
2012; 81 (7): 552-566
- **Single-cell mass cytometry adapted to measurements of the cell cycle** *CYTOMETRY PART A*
Behbehani, G. K., Bendall, S. C., Clutter, M. R., Fantl, W. J., Nolan, G. P.
2012; 81A (7): 552-566
- **From single cells to deep phenotypes in cancer** *NATURE BIOTECHNOLOGY*
Bendall, S. C., Nolan, G. P.
2012; 30 (7): 639-647
- **A deep profiler's guide to cytometry** *TRENDS IN IMMUNOLOGY*
Bendall, S. C., Nolan, G. P., Roederer, M., Chattopadhyay, P. K.
2012; 33 (7): 323-332
- **Cytometry by Time-of-Flight Shows Combinatorial Cytokine Expression and Virus-Specific Cell Niches within a Continuum of CD8(+) T Cell Phenotypes** *IMMUNITY*
Newell, E. W., Sigal, N., Bendall, S. C., Nolan, G. P., Davis, M. M.
2012; 36 (1): 142-152
- **Signaling and Immunophenotypic Diversity in Pediatric Acute Myeloid Leukemia As Defined by 31-Parameter Single-Cell Mass Cytometry** *53rd Annual Meeting and Exposition of the American-Society-of-Hematology (ASH)*
Simonds, E. F., Bendall, S. C., Davis, K. L., Fienberg, H. G., Finck, R. L., Amir, E. D., Radtke, I., Downing, J. R., Pe'er, D., Nolan, G. P.
AMER SOC HEMATOLOGY.2011: 1100-1101
- **Extracting a cellular hierarchy from high-dimensional cytometry data with SPADE** *NATURE BIOTECHNOLOGY*
Qiu, P., Simonds, E. F., Bendall, S. C., Gibbs, K. D., Bruggner, R. V., Linderman, M. D., Sachs, K., Nolan, G. P., Plevritis, S. K.
2011; 29 (10): 886-U181
- **Clonal tracking of hESCs reveals differential contribution to functional assays** *NATURE METHODS*
Stewart, M. H., Bendall, S. C., Levadoux-Martin, M., Bhatia, M.
2010; 7 (11): 917-U75
- **A HUPO test sample study reveals common problems in mass spectrometry-based proteomics** *NATURE METHODS*
Bell, A. W., Deutsch, E. W., Au, C. E., Kearney, R. E., Beavis, R., Sechi, S., Nilsson, T., Bergeron, J. J.
2009; 6 (6): 423-U40
- **An Enhanced Mass Spectrometry Approach Reveals Human Embryonic Stem Cell Growth Factors in Culture** *MOLECULAR & CELLULAR PROTEOMICS*
Bendall, S. C., Hughes, C., Campbell, J. L., Stewart, M. H., Pittock, P., Liu, S., Bonneil, E., Thibault, P., Bhatia, M., Lajoie, G. A.
2009; 8 (3): 421-432
- **Prevention of amino acid conversion in SILAC experiments with embryonic stem cells** *MOLECULAR & CELLULAR PROTEOMICS*
Bendall, S. C., Hughes, C., Stewart, M. H., Doble, B., Bhatia, M., Lajoie, G. A.
2008; 7 (9): 1587-1597

- **Deconstructing human embryonic stem cell cultures: niche regulation of self-renewal and pluripotency** *JOURNAL OF MOLECULAR MEDICINE-JMM*
Stewart, M. H., Bendall, S. C., Bhatia, M.
2008; 86 (8): 875-886
- **Human embryonic stem cells: lessons from stem cell niches in vivo** *REGENERATIVE MEDICINE*
Bendall, S. C., Stewart, M. H., Bhatia, M.
2008; 3 (3): 365-376
- **IGF and FGF cooperatively establish the regulatory stem cell niche of pluripotent human cells in vitro** *NATURE*
Bendall, S. C., Stewart, M. H., Menendez, P., George, D., Vijayaragavan, K., Werbowetski-Ogilvie, T., Ramos-Mejia, V., Rouleau, A., Yang, J., Bosse, M., Lajoie, G., Bhatia, M.
2007; 448 (7157): 1015-U3
- **Proteomic analysis of pluripotent stem cells.** *Current protocols in stem cell biology*
Bendall, S. C., Booy, A. T., Lajoie, G.
2007; Chapter 1: Unit 1B 1-?
- **Clonal isolation of hESCs reveals heterogeneity within the pluripotent stem cell compartment** *NATURE METHODS*
Stewart, M. H., Bosse, M., Chadwick, K., Menendez, P., Bendall, S. C., Bhatia, M.
2006; 3 (10): 807-815
- **Complement targeting of nonhuman sialic acid does not mediate cell death of human embryonic stem cells** *NATURE MEDICINE*
Cerdan, C., Bendall, S. C., Wang, L., Stewart, M., Werbowetski, T., Bhatia, M.
2006; 12 (10): 1113-1114
- **Multi-target drug combinations from single drug responses measured at the level of single cells using Mixture Nested Effects Models (MNEMs) applied to cancer.** *Special Conference on Computational and Systems Biology of Cancer*
Anchang, B., Fienberg, H., et al
2015