Stanford

Zinaida Good, Ph.D.

Assistant Professor of Medicine (Immunology and Rheumatology)

Medicine - Immunology & Rheumatology

NIH Biosketch available Online Curriculum Vitae available Online

CONTACT INFORMATION

- **Administrative Associate**

  Cheryl M. Kuo, BS - Administrative Associate 2

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Bio

BIO

I am an Assistant Professor at Stanford University's Department of Medicine, with joint appointments in the Division of Immunology and Rheumatology and the Division of Computational Medicine. I also serve as the Director of the Data Hub at the Stanford Center for Cancer Cell Therapy. My masters training in experimental immunology, doctoral training in computational and systems immunology, and postdoctoral work on chimeric antigen receptor (CAR) T cell therapies have uniquely positioned my research program to tackle complex challenges in cancer immunotherapy through innovative computational approaches. My lab develops advanced algorithms for high-dimensional single-cell, spatial, and clinical data to identify mechanisms of therapy resistance based on primary patient samples. We leverage internal and public clinical multi-omic T cell therapy datasets to build artificial intelligence systems for enhanced T cell designs with improved predicted clinical outcomes. This approach enables us to test novel T cell design strategies preclinically in models that recapitulate clinical resistance mechanisms and gather sufficient data for clinical translation.

I am deeply committed to training and supporting the next generation of scientists who will drive innovation in biomedical research. My lab provides a collaborative, intellectually stimulating environment where trainees can develop the technical skills, critical thinking abilities, and professional competencies needed for successful careers in science.

In the Good Lab, we integrate cutting-edge synthetic biology, immunology, and machine learning to engineer next-generation T cell therapies for cancer and autoimmune diseases:

Lab website: https://www.zinagoodlab.com

X: https://x.com/GoodZinaida

Bluesky: @zinagood.bsky.social

ACADEMIC APPOINTMENTS

- Assistant Professor, Medicine - Immunology & Rheumatology
- Member, Bio-X
- Member, Stanford Cancer Institute

ADMINISTRATIVE APPOINTMENTS

- Investigator, Weill Cancer Hub West (Team PROMISE), (2025- present)
- Director, Stanford Cancer Cell Therapy Data Hub, (2024- present)
- Investigator, Parker Institute for Cancer Immunotherapy, (2017- present)

HONORS AND AWARDS

- MOONSHOTS // ONE Honorable Mention Award (MPI), Laude Institute (2026 – 2027)
- Stanford Center for Digital Health Grant (MPI), Stanford Center for Digital Health (2026 – 2027)
- NIH Program Project Grant Investigator (Project 2 Lead), National Institutes of Health (NCI P01) (2025 – 2030)
- NIH Multimodal AI Initiative Award (MPI), National Institutes of Health (OD OT2) (2025 – 2027)
- Weill Cancer Hub West Team PROMISE Investigator (Project 3 Lead), Weill Family Foundation (2025 – 2027)
- NIH Pathway to Independence Award, National Institutes of Health (NCI K99/R00) (2024 – 2027)
- ACS-SCI Institutional Research Grant Pilot Project, American Cancer Society (2024 – 2025)
- Kona Innovation Challenge Award (MPI), Parker Institute for Cancer Immunotherapy (2024 – 2025)
- AACR Woman in Cancer Research Scholar, American Association for Cancer Research (2024)
- Parker Bridge Fellow, Parker Institute for Cancer Immunotherapy (2023 – 2026)
- Arthur and Sandra Irving Fellow, Arthur and Sandra Irving Cancer Immunology Symposium (2022)
- NK and Irene Cheung Family Scholar, Keystone Symposia (2022)
- Stanford Cancer Institute Fellow, Stanford Cancer Institute (2020 – 2021)
- ASH Abstract Achievement Award, American Society of Hematology (2019)
- Parker Scholar, Parker Institute for Cancer Immunotherapy (2018 – 2020)
- Keystone Symposium Scholar, Keystone Symposia (2018)
- Featured Wikipedia Editor, Wikimedia Foundation (2013)
- Member of the DARPA Shredder Challenge Winning Team “All Your Shreds Are Belong to Us”, Defense Advanced Research Projects Agency (2011)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, Stanford Center for Digital Health (2026 - present)
- Memebr, Stanford Institute for Human-Centered AI (HAI) (2026 - present)
- Member, Stanford Cancer Institute (2025 - present)
- Member, Society for Immunotherapy of Cancer (2021 - present)
- Member, American Society of Hematology (2019 - present)
- Member, Stanford Center for Cancer Cell Therapy (2018 - present)
- Associate Member, American Association for Cancer Research (2016 - present)
- Member, International Society for the Advancement of Cytometry (2016 - 2018)
- Member, International Society for Stem Cell Research (2015 - 2016)
- Member, Canadian Society for Immunology (2009 - 2012)
- Member, American Association for the Advancement of Science (2009 - 2011)
- Member, Canadian Student Biotechnology Network (2005 - 2011)

PROFESSIONAL EDUCATION

- Doctor of Philosophy, Stanford University , Immunology - Computational & Systems Immunology (2018)

- Master of Science, University of British Columbia , Microbiology & Immunology (2012)
- Bachelor of Science, University of British Columbia , Microbiology & Immunology (2008)

SERVICE, VOLUNTEER, AND COMMUNITY WORK

- Wikipedia Editor (January 2007)
- Invited Mentor, Beyond B.Sc. Conference (March 2010 - March 2011)
- Performer, Living Lab Theater Troupe (January 2009 - May 2010)
- Rollerblader, Vancouver Olympic Games Opening Ceremony (August 2009 - February 2010)
- Organizing Member, World AIDS Day Organizing Committee (September 2008 - December 2009)
- Graduation Coordinator, Microbiology and Immunology Student Association (March 2007 - May 2008)
- Green Genes Club Member (May 2007 - December 2007)
- Wellness Peer Educator, UBC Wellness Center (August 2004 - May 2006)

PATENTS

- Davis KL, Good Z, Nolan GP, Samusik N, Tibshirani R. "United States Patent USSN 62/371,093. Filed to the United States Patent and Trademark Office: patent pending. Developmentally dependent predictor of relapse in acute lymphoblastic leukemia", Leland Stanford Junior University
- Stiber A, Ogunlade B, Herndon LK, Good Z, Mackall CL, Dionne JA. "United States Patent USSN 63/945,093. Filed to the United States Patent and Trademark Office: patent pending. Label-free cell identity and dynamic functional state monitoring via surface-enhanced Raman spectroscopy and machine learning", Leland Stanford Junior University
- Good Z, Nolan GP, Bendall SC, Weber EW, and Mackall CL. "United States Patent 12,024,716 Compositions and methods of expansions of T cell populations", Leland Stanford Junior University, Jul 2, 2024

LINKS

- LinkedIn: https://www.linkedin.com/in/zinaidagood/
- Cancer Cell Therapy Data Hub: https://med.stanford.edu/cancer-cell-therapy/center-for-cancer-cell-therapy-data-hub.html
- Lab Website: https://www.zinagoodlab.com/

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

AI-driven engineered T cell therapies for cancer and autoimmune diseases

Our overarching goal is to lay the foundations for a clinically informed T cell design through machine learning algorithms, eventually enabling artificial intelligence (AI) systems to nominate specific genetic edits for improved clinical outcomes. We leverage innovation in machine learning and clinical multi-omic T cell therapy datasets to build AI systems at scale to enable broad generalization.

Our laboratory integrates cutting-edge synthetic biology, immunology, and machine learning to engineer next-generation T cell therapies for cancer and autoimmune diseases. The lab has three major research areas:

- Analysis of clinical single-cell sequencing and spatial transcriptomics datasets from T cell therapy trials to identify mechanisms of resistance

- Building AI systems to generate T cell designs predicted to improve patient outcomes and reduce toxicity

- Conducting genetic screens and evaluating novel T cell designs in cell culture and animal models that mimic mechanisms of resistance observed in patients

The Good Lab is part of the Division of Immunology and Rheumatology and the Division of Computational Medicine within the Department of Medicine at Stanford University. We're also a part of the Stanford Center for Cancer Cell Therapy, where Dr. Good leads the center's Data Hub. We are members of the Stanford Cellular Immune Tolerance Program, Stanford Cancer Institute, Stanford Bio-X, Stanford-UCSF Weill Cancer Hub West, and the Parker Institute for Cancer Immunotherapy.

Teaching

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Holly McCann, Ariel Stiber

Postdoctoral Faculty Sponsor

Meelad Amouzgar, Wael Gamal, Moritz Schaefer

Publications

PUBLICATIONS

- **Overcoming T cell tolerance to tumor self-antigens through catch-bond engineering.** *Science (New York, N.Y.)*
  Chen, X., Mao, Z., Kolawole, E. M., Persechino, M., Jude, K. M., Ogishi, M., Mo, K. C., McLaughlin, J., Cheng, D., Xiang, X., Yang, X., Gee, C., Liu, et al
  2026; 391 (6791): eadx3162
- **Predictive biomarkers of response to chimeric antigen receptor (CAR) T-cell therapy for pan-haematologic cancer.** *Nature biomedical engineering*
  Chen, G. M., Jain, A., Gering, D. T., Satulovsky, J., Datta, S., Lai, P., Karar, J., Gonzalez, V. E., Alexander, K., Chew, A., Jadlowsky, J. K., Ruella, M., Paruzzo, et al
  2026
- **Regulatory T cell therapies: from patient data to biological insights.** *Frontiers in immunology*
  Rodrigues, K. B., Eggenhuizen, P. J., Bacchetta, R., Good, Z.
  2025; 16: 1675114
- **CSF1R+ myeloid-monocytic cells drive CAR-T cell resistance in aggressive B cell lymphoma.** *Cancer cell*
  Stahl, D., Gödel, P., Balke-Want, H., Gholamipoorfard, R., Segbers, P., Tetenborg, L., Koker, M., Dörr, J., Gregor, L., Bachurski, D., Rose, F., Simon, A. G., Good, et al
  2025
- **Effects of an initial anti-CD19 CAR T-cell therapy on subsequent anti-CD22 CAR T-cell manufacturing and clinical outcomes in patients with r/r LBCL.** *Cancer discovery*
  Su, Y. J., Kramer, A. M., Hamilton, M. P., Agarwal, N., Srinagesh, H. K., Baird, J. H., Sahaf, B., Kuo, A., Ehlinger, Z. J., Desai, M. H., Rietberg, S. P., Tunuguntla, R., Patel, et al
  2025
- **Conditional normalizing flows for the design of T cell therapies**
  Kadaba, S. E., Alexander, E. K., Tsui, K. C., Roth, T. L., Good, Z.
  2025: FM4LS: 43
- **Patient-level prediction from single-cell data using attention-based multiple instance learning with regulatory priors**
  Tsui, K. C., Rodrigues, K. B., Zhan, X., Chen, Y., Mo, K. C., Mackall, C. L., Miklos, D. B., Gevaert, O., Good, Z.
  2025: AI4D3: 16
- **Risk of Second Tumors and T-Cell Lymphoma after CAR T-Cell Therapy.** *The New England journal of medicine*
  Hamilton, M. P., Sugio, T., Noordenbos, T., Shi, S., Bulterys, P. L., Liu, C. L., Kang, X., Olsen, M. N., Good, Z., Dahiya, S., Frank, M. J., Sahaf, B., Mackall, et al
  2024; 390 (22): 2047-2060

- **Engineered CD47 protects T cells for enhanced antitumour immunity.** *Nature*
  Yamada-Hunter, S. A., Theruvath, J., McIntosh, B. J., Freitas, K. A., Lin, F., Radosevich, M. T., Leruste, A., Dhingra, S., Martinez-Velez, N., Xu, P., Huang, J., Delaidelli, A., Desai, et al
  2024

- **CAR19 monitoring by peripheral blood immunophenotyping reveals histology-specific expansion and toxicity.** *Blood advances*
  Hamilton, M. P., Craig, E., Gentille Sanchez, C., Mina, A., Tamaresis, J., Kirmani, N., Ehlinger, Z., Syal, S., Good, Z., Sworder, B., Schroers-Martin, J., Lu, Y., Muffly, et al
  2024

- **Lessons for the Next Generation of Scientists from the Second Annual Arthur and Sandra Irving Cancer Immunology Symposium.** *Cancer immunology research*
  Alvarez-Breckenridge, C., Anderson, K. G., Correia, A. L., Demehri, S., Dinh, H. Q., Dixon, K. O., Dunn, G. P., Evgin, L., Goc, J., Good, Z., Hacohen, N., Han, P., Hanč, et al
  2023: OF1-OF7

- **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

- **Advancing T cell-based cancer therapy with single-cell technologies.** *Nature medicine*
  Bucktrout, S. L., Banovich, N. E., Butterfield, L. H., Cimen-Bozkus, C., Giles, J. R., Good, Z., Goodman, D., Jonsson, V. D., Lareau, C., Marson, A., Maurer, D. M., Munson, P. V., Stubbington, et al
  2022; 28 (9): 1761-1764

- **Identification of cell types in multiplexed in situ images by combining protein expression and spatial information using CELESTA.** *Nature methods*
  Zhang, W., Li, I., Reticker-Flynn, N. E., Good, Z., Chang, S., Samusik, N., Saumyaa, S., Li, Y., Zhou, X., Liang, R., Kong, C. S., Le, Q., Gentles, et al
  2022

- **GD2-CAR T cell therapy for H3K27M-mutated diffuse midline gliomas.** *Nature*
  Majzner, R. G., Ramakrishna, S., Yeom, K. W., Patel, S., Chinnasamy, H., Schultz, L. M., Richards, R. M., Jiang, L., Barsan, V., Mancusi, R., Geraghty, A. C., Good, Z., Mochizuki, et al
  2022

- **SINGLE CELL RNA SEQUENCING FROM THE CSF OF SUBJECTS WITH H3K27M+DIPG/DMG TREATED WITH GD2 CAR T-CELLULAR THERAPY**
  Mochizuki, A., Ramakrishna, S., Good, Z., Patel, S., Chinnasamy, H., Yeom, K., Schultz, L., Richards, R., Campen, C., Reschke, A., Mahdi, J., Toland, A., Baggot, et al
  OXFORD UNIV PRESS INC.2021: 39

- **Transient rest restores functionality in exhausted CAR-T cells through epigenetic remodeling.** *Science (New York, N.Y.)*
  Weber, E. W., Parker, K. R., Sotillo, E., Lynn, R. C., Anbunathan, H., Lattin, J., Good, Z., Belk, J. A., Daniel, B., Klysz, D., Malipatlolla, M., Xu, P., Bashti, et al
  2021; 372 (6537)

- **Molecular Imaging of Chimeric Antigen Receptor T Cells by ICOS-ImmunoPET.** *Clinical cancer research : an official journal of the American Association for Cancer Research*
  Simonetta, F., Alam, I. S., Lohmeyer, J. K., Sahaf, B., Good, Z., Chen, W., Xiao, Z., Hirai, T., Scheller, L., Engels, P., Vermesh, O., Robinson, E., Haywood, et al
  2020

- **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

- **Computational and Systems Immunology: A Student's Perspective.** *Trends in immunology*
  Good, Z., Glanville, J., Gee, M. H., Davis, M. M., Khatri, P.
  2019

- **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

- **c-Jun overexpression in CAR T cells induces exhaustion resistance.** *Nature*
  Lynn, R. C., Weber, E. W., Sotillo, E. n., Gennert, D. n., Xu, P. n., Good, Z. n., Anbunathan, H. n., Lattin, J. n., Jones, R. n., Tieu, V. n., Nagaraja, S. n., Granja, J. n., de Bourcy, et al
  2019

- **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

- **Automated mapping of phenotype space with single-cell data** *NATURE METHODS*
  Samusik, N., Good, Z., Spitzer, M. H., Davis, K. L., Nolan, G. P.
  2016; 13 (6): 493-?

- **Lymph node-independent liver metastasis in a model of metastatic colorectal cancer** *NATURE COMMUNICATIONS*
  Enquist, I. B., Good, Z., Jubb, A. M., Fuh, G., Wang, X., Junttila, M. R., Jackson, E. L., Leong, K. G.
  2014; 5

- **Biomarkers of Residual Disease, Disseminated Tumor Cells, and Metastases in the MMTV-PyMT Breast Cancer Model** *PLOS ONE*
  Franci, C., Zhou, J., Jiang, Z., Modrusan, Z., Good, Z., Jackson, E., Kouros-Mehr, H.
  2013; 8 (3)

- **Heterotrimeric G(i)/G(o) proteins modulate endothelial TLR signaling independent of the MyD88-dependent pathway** *AMERICAN JOURNAL OF PHYSIOLOGY-HEART AND CIRCULATORY PHYSIOLOGY*
  Dauphinee, S. M., Voelcker, V., Tebaykina, Z., Wong, F., Karsan, A.
  2011; 301 (6): H2246-H2253

- **Understanding the Mechanism of Virus Removal by Q Sepharose Fast Flow Chromatography During the Purification of CHO-Cell Derived Biotherapeutics** *BIOTECHNOLOGY AND BIOENGINEERING*
  Strauss, D. M., Lute, S., Tebaykina, Z., Frey, D. D., Ho, C., Blank, G. S., Brorson, K., Chen, Q., Yang, B.
  2009; 104 (2): 371-380