Zinaida Good, Ph.D.

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OBJECTIVE: To Accelerate Advances in Cancer Immunotherapy with Data-Driven Methods

*I am a cross-trained scientist with expertise in computational biology, immunology, and oncology. My long-term goal is to understand and enhance engineered cellular immunotherapies for patients with cancer, autoimmune conditions, and allogeneic grafts. I build advanced algorithms for high-dimensional single-cell data and imaging platforms to identify promising design strategies for next-generation therapies. I bring 15 years of full-time research experience across cellular and molecular assays, mouse models, and computational pipelines. My work includes <u>4 first-author papers</u> (**Nature Medicine 2018 & 2022, Nature Biotechnology 2019, Trends in Immunology 2019**), <u>12 co-authored papers</u> (including **Nature 2019 & 2022, Science 2021, Nature Methods 2016 & 2022**), and <u>2 patent applications</u>. My academic potential has been recognized by prestigious postdoctoral fellowships (**Parker Institute for Cancer Immunotherapy 2018, Stanford Cancer Institute 2020**), a career development award (**Parker Institute for Cancer Immunotherapy 2023**), and I have been named an **Arthur and Sandra Irving Cancer Immunology Fellow** in **2022**. As an <u>instructor</u> at the Stanford Cancer Institute (SCI) and the Stanford Department of Biomedical Data Science (DBDS), I am preparing to launch an independent research program at the interface between computational biology and cancer immunotherapy.*

EDUCATION

<u>**Ph.D.**</u>	Major: **Computational & Systems Immunology** **Stanford University, Stanford, CA, USA**	09/2013 – 04/2018

- One of the inaugural students in the CSI track of the Immunology Ph.D. program; GPA: 4.0.

<u>**M.S.**</u>	Major: **Microbiology & Immunology** **University of British Columbia, Vancouver, BC, Canada**	09/2008 – 05/2012

- Defended M.S. thesis with the "Outstanding" status; GPA: 4.0.

<u>**B.S.**</u>	Major: **Microbiology & Immunology** **University of British Columbia, Vancouver, BC, Canada**	09/2003 – 05/2008

- One of the top 15% students in the program; completed Science Co-op Program; GPA: 3.5.

SELECTED WORK EXPERIENCE

<u>**Instructor**</u>	**Drs. Crystal L. Mackall & Sylvia K. Plevritis Labs, SCI / DBDS** **Stanford University, Stanford, CA, USA**	01/2023 – Present

- **Project 1:** Perform reverse fate mapping analyses of CD19 and CD19/22-targeted CAR T cell clonotypes to identify single-cell features of CAR T cells with optimal homing, expansion, and persistence properties in adult patients with leukemia and lymphoma.
- **Project 2:** Perform lineage tracing with scRNA-seq and scTCR-seq data across pre-manufacture apheresis, infusion products, and post-infusion cerebrospinal fluid (CSF) samples in pediatric patients treated with GD2-CAR T cells for diffuse midline glioma (DMG).
- **Outcome:** (1) Through lineage tracing, defined gene expression programs and cell states with optimal CAR T cell homing, expansion, and persistence in pre-manufacture apheresis and infusion CD19-CAR and CD19/22-CAR products (<u>Good</u> *et al. In Preparation*). (2) Generated a draft single-cell GD2-CAR T cell atlas for DMG (Ramakrishna and <u>Good</u> *et al. In Preparation*).

<u>**Postdoctoral Fellow**</u>	**Drs. Crystal L. Mackall & Sylvia K. Plevritis Labs, SCI / DBDS** **Stanford University, Stanford, CA, USA**	04/2018 – 01/2023

- **Project 1:** Leverage multi-omics single-cell data (flow cytometry, CyTOF, scRNA-seq, CITE-seq, scTCR-seq) to define correlates of clinical response in patients with large B cell lymphoma (LBCL) receiving chimeric antigen receptor (CAR) T cells.
- **Project 2:** Integrate scRNA-seq, CITE-seq, and high-dimensional imaging (CODEX) patient data modalities to gain insights into metastasis in head and neck squamous cell carcinoma (HNSCC).
- **Outcome:** (1) Built single-cell data analysis pipelines for the Stanford Center for Cancer Cell Therapy and established that circulating CAR T_{Reg} cells are associated with disease progression, less severe neurotoxicity, and diminished CAR T cell expansion in LBCL (<u>Good</u> *et al. Nature Medicine*, 2022). (2) Built a single-cell atlas of HNSCC and identified cellular niches whose gene modules are associated with survival (Zhang and <u>Good</u> *et al. In Preparation*). See publications for other projects.

<u>**Ph.D. Candidate**</u>	**Drs. Garry P. Nolan & Sean C. Bendall Labs, M&I / Pathology** **Stanford University, Stanford, CA, USA**	09/2013 – 03/2018

- **Project 1:** Define a template for human T cell differentiation across time and divisions *ex vivo* as a continuous single-cell trajectory.
- **Project 2:** Examine B-lineage childhood acute lymphoblastic leukemia in the context of corrupted normal B lymphopoiesis.
- **Outcome:** (1) Developed a mass cytometry method for tracking cell proliferative history and constructed a system to map and steer human T cell differentiation *ex vivo* (<u>Good</u> *et al. Nature Biotechnology*, 2019). (2) Built a computational tool for single-cell developmental classification that enabled deconstructing 'broken' B cell development to identify a cell subpopulation predictive of clinical outcome in acute lymphoblastic leukemia (<u>Good</u> *et al. Nature Medicine*, 2018).

SELECTED WORK EXPERIENCE *(Continued)*

Research Associate **Discovery Oncology, Research & Early Development**   06/2011 – 07/2013
Genentech, Inc., South San Francisco, CA, USA   (intern to 01/2012, contractor to 01/2013)
- **Project:** Identify potential strategies to target tumor re-initiating cells (TRICs) in colorectal cancer by characterizing tumor cells resistant to chemotherapy in orthotropic and subcutaneous xenograft mouse models.
- **Outcome:** Co-developed a faithful mouse model for generating TRICs by administering best-in-class chemotherapy regimen to immunocompromised mice bearing orthotopic primary colon tumor fragments; performed phenotypic and functional analyses of TRICs; identified targets that proceeded into development as potential therapeutic leads.

M.S. Student   **Dr. Michael R. Gold Lab, Microbiology & Immunology**   08/2008 – 06/2011
University of British Columbia, Vancouver, BC, Canada
- **Project:** To define the mechanisms of immune memory, characterize mRNA processing bodies (P-bodies) in T and B lymphocytes and determine if P-bodies play a role in immune memory by storing pre-synthesized effector mRNAs.
- **Outcome:** Designed a protocol for dual analysis of proteins and/or mRNAs in lymphocytes by flow cytometry and confocal microscopy; successfully completed the project and found that there are distinct subsets of P-bodies in T and B lymphocytes, and that P-bodies in effector and memory, but not naïve, $CD8^+$ T cells contain IFN-γ mRNA.

Intern   **Process Virology, Process Research & Development**   05/2007 – 12/2007
Genentech, Inc., South San Francisco, CA, USA
- **Project:** Establish the mechanism of virus removal during late-stage purification of therapeutic antibodies in order to facilitate clinical trials of novel therapeutic antibodies in Europe.
- **Outcome:** Identified the forces responsible for clearance of 3 model viruses by anion-exchange chromatography and found that electrostatic interactions are primarily responsible for the removal of non-enveloped viruses, whereas non-electrostatic forces contribute to the clearance of the model enveloped virus.

Intern   **Dr. Aly Karsan Lab, Medical Biophysics**   01/2006 – 08/2006
British Columbia Cancer Research Center, Vancouver, BC, Canada
- **Project:** To identify novel drug targets in tumor angiogenesis and sepsis, investigate the roles of heterotrimeric G proteins in Toll-like receptor 4 (TLR4) signaling pathway of human endothelial cells.
- **Outcome:** Gathered experimental data supporting the roles of two novel cytoplasmic proteins in TLR4 signaling pathway of human endothelial cells, wrote a scientific report.

Lab Assistant   **Dr. Erin C. Gaynor Lab, Microbiology & Immunology**   04/2005 – 06/2005
University of British Columbia, Vancouver, BC, Canada
- Assisted with the analysis of various treatment options on biofilm formation by the bacterium *Campylobacter jejuni*.
- Prepared antibiotics, media plates, and buffers; autoclaved biohazard waste, glassware, and solutions; cleaned laboratory devises.

SELECTED AWARDS

Parker Inst. for Cancer Immunotherapy Bridge Fellow 2023	**1st place, DARPA Shredder Challenge 2011**
Arthur & Sandra Irving Cancer Immunology Fellow 2022	(member of the team "All Your Shreds Are Belong to Us")
NK & Irene Cheung Family Scholar, Keystone Symposia 2022	4th place, ImmunoVancouver speed poster competition 2011
Stanford Cancer Institute Fellow 2020	2nd prize, UBC Life Sciences Institute poster comp. 2009
ASH Abstract Achievement Award 2019	**UBC Graduate Entrance Scholarship 2008**
Keystone Symposia Scholarship 2019	Delegate to *WithinSight* National Leadership Conf. 2007
Parker Institute for Cancer Immunotherapy Scholar 2018	Ontario Scholar 2003
Stanford Biosciences Travel Grant 2016, 2017, 2018	1st place, local Sir Isaac Newton Physics contest 2003
CYTO Image Analysis Challenge Finalist 2017	2nd place, local Sir Isaac Newton Math contest 2003
ISAC Student Travel Award for CYTO 2016, 2017	Multiple ski racing awards (MVP, 1st-3rd places) 2002 – 2003
CYTO Exceptional Student Award Finalist 2016	2nd place, Ural Regional Math contest 2001
Featured Wikipedia Editor 2012, 2013	3rd place, Ural Regional English contest 2001

PATENTS

- PCT/US2019/13115, USSN 62/615,917: **Good Z**, Nolan GP, Bendall SC, Weber EW, and Mackall CL. "Compositions and methods of expansions of T cell populations". International patent application published under WO 2019/140137 A1 (2019): *patent pending*.
- USSN 62/371,093: Davis KL, **Good Z**, Nolan GP, Samusik N, and Tibshirani R. "Developmentally dependent predictor of relapse in acute lymphoblastic leukemia". Filed to the United States Patent and Trademark Office (2016): *patent pending*.

FUNDING

Active Research Support

PICI Bridge Fellow   Good (PI)   02/01/2023 – 01/31/2026
Parker Institute for Cancer Immunotherapy
Defining a Therapeutic CAR T Cell in Patients with Cancer
This career development award aims to establish reverse fate mapping, an approach to trace engineered T cells based on endogenous T cell receptor sequence as a 'barcode' in patients with cancer.
Total award amount (including indirect costs): $650,000
Role: PI

Completed Research Support

CCSB Pilot Project   Good (PI)   08/01/2020 – 07/31/2021
Stanford Center for Cancer Systems Biology (NIH/NCI U54-CA209971)
Interrogating the Effects of CAR T Cells on the Tumor Microenvironment
This pilot project grant aimed to build a tumor microenvironment interactome between CD19-targeted CAR T cells and other cell types in patients with large B cell lymphoma.
Total award amount (including indirect costs): $78,497
Role: PI

SCI Fellow   Good (PI)   07/01/2020 – 06/30/2021
Stanford Cancer Institute
This postdoctoral fellowship aimed to support my training and prepare me to obtain a career development award in order to transition to independence.
Total award amount (including indirect costs): $75,000
Role: PI

PICI Scholar   Good (PI)   04/22/2018 – 05/31/2020
Parker Institute for Cancer Immunotherapy
Directing T Lymphocyte Fate Specification Choices in Cancer Immunotherapy Applications
This postdoctoral fellowship aimed to establish a framework for constructing single-cell trajectories in the context of expansion of primary or engineered human T lymphocytes for adoptive cell transfer therapies.
Total award amount (including indirect costs): $146,501
Role: PI

5T32AI007290   Jones (PI)   10/01/2013 – 03/31/2018
NIH/NIAID
Ph.D. Program in Immunology at Stanford University
This institutional research training grant supported Immunology Ph.D. trainees at Stanford University.
Total award amount (including indirect costs): $102,726
Role: Stanford Immunology Ph.D. Student

Pending Research Support

1K99CA279901   Good (PI)   09/01/2023 – 08/31/2028
NIH/NCI
Learning Features of Optimal CAR T Cells for LBCL from Patient Data
This Pathway to Independence (K99/R00) career development award aims to finalize my mentored training and enable me to establish an independent academic research program focused on cancer immunotherapy.
Total award amount (including indirect costs): $1,089,792
Role: PI

FUNDING *(Continued)*

In-Kind Research Support

PICI and 10x Genomics Pilot Project   Good, Ramakrishna (PI)   07/06/2022 – 07/05/2023
Parker Institute for Cancer Immunotherapy and 10x Genomics, Inc.
Clinical Dynamics of GD2-Targeted CAR T cell Response in Childhood DMG
This pilot project from the collaboration between PICI and 10x Genomics aims to identify drivers of GD2-CAR T cell success or failure in pediatric diffuse midline glioma (DMG) using lineage tracing and spatial transcriptomics.
Total award amount (including indirect costs): In-kind reagents and technical support
Role: PI

MANUSCRIPTS & PUBLICATIONS

Original Research Articles

- **Good Z***, Hamilton MP*, Spiegel JY, Kurra S, Desai M, Wu F, Yang E, Ozawa MG, Frank MJ, Baird JH, Muffly L, Claire GK, Craig J, Kong KA, Wagh D, Coller J, Tibshirani R, Plevritis SK, Sahaf B, Miklos DB[§], Mackall CL[§]. *Reverse fate mapping of CAR T cells in patients with B cell malignancies*. **In Preparation**.

- Zhang W*, **Good Z***, Yu A, Espin Perez A, Saumyaa S, Chang S, Goltsev Y, Samusik N, Black S, Vazquez G, Mayer A, Gentles A, Nolan GP, Sunwoo JB, Plevritis SK. *A single-cell atlas of head and neck squamous cell carcinoma*. **In Preparation**.

- Ramakrishna S*, **Good Z***, Desai M, Zamler D, Mancusi R, Mahdi J, Majzner RG, Schultz L, Richards RM, Kamens J, Barsan V, Campen C, Partap S, Ehlinger Z, Reynolds W, Chen Y, Hamilton MP, Geraghty A, Moon J, Baggott C, Kunicki M, Fujimoto M, Li A, Jariwala S, Mavroukakis S, Egeler E, Jacobs A, Erickson C, Yamabe-Kwong K, Prabhu S, Davis K, Feldman SA, Sahaf B, Mackall CL[§], Monje M[§]. *Immune signatures associated with GD2 CAR T cell activity in H3K27M+ diffuse midline glioma patients*. **In Preparation**.

- **Good Z***, Spiegel JY*, Sahaf B, Malipatlolla MB, Ehlinger ZJ, Kurra S, Desai MH, Reynolds WD, Wong Lin A, Vandris P, Wu F, Prabhu S, Hamilton MP, Tamaresis JS, Hanson PJ, Patel S, Feldman SA, Frank MJ, Baird JH, Muffly L, Claire GK, Craig J, Kong KA, Wagh D, Coller J, Bendall SC, Tibshirani RJ, Plevritis SK, Miklos DB[§], Mackall CL[§]. (2022). *Post-infusion CAR T$_{Reg}$ cells identify patients resistant to CD19-CAR therapy*. **Nature Medicine**, 28(9): 1860-1871. PMID: 36097223.
  - *News & Views article by:* Saini N and Neelapu SS (2022). *CAR Treg cells: prime suspects in therapeutic resistance.* **Nature Medicine**, 28(9): 1755-1756. PMID: 36109644.
  - *Covered by:* Chen A (2022). *CAR-T therapy doesn't work in all cancer cases. Scientists are starting to figure out why.* **STAT News**, https://www.statnews.com/2022/10/04/why-car-t-therapy-doesnt-work-in-all-cases.

- Majzner RG*, Ramakrishna S*, Yeom KW, Patel S, Chinnasamy H, Schultz LM, Richards RM, Barsan V, Mancusi R, Geraghty AC, **Good Z**, Mochizuki A, Gillespie SM, Martin A, Toland S, Mahdi J, Reschke A, Chau I, Nie E, Chau AJ, Rotiroti MC, Mount CW, Baggott C, Mavroukakis S, Egeler E, Moon J, Erickson C, Green S, Kunicki M, Fujimoto M, Ehlinger Z, Reynolds W, Kurra S, Warren KE, Prabhu S, Vogel H, Rasmussen L, Cornell TT, Partap S, Fisher PG, Campen CJ, Filbin M, Grant G, Sahaf B, Davis KL, Feldman SA, Mackall CL[§], Monje M[§]. (2022). *GD2-CAR T cell therapy for H3K27M-mutated diffuse midline gliomas*. **Nature**, 603(7903): 934-941. PMID: 35130560.

- Zhang W, Li I, Reticker-Flynn NE, **Good Z**, Chang S, Samusik N, Saumyaa S, Li Y, Zhou X, Liang R, Kong CS, Le QT, Gentles AJ, Sunwoo JB, Nolan GP, Engleman EG, Plevritis SK. (2022). *Identification of cell types in multiplexed in situ images by combining protein expression and spatial location using CELESTA reveals spatial biology*. **Nature Methods**, 19(6): 759-769. PMID: 35654951.

- Weber EW, Lynn RC, Parker KR, Lattin J, Anbunathan H, Sotillo E, **Good Z**, Malipatlolla M, Xu P, Vandris P, Majzner RG, Chen L-C, Wandless TJ, Chang HY, Satpathy AT, Mackall CL. (2021). *Transient rest restores functionality in exhausted CAR-T cells through epigenetic remodeling*. **Science**, 2;372(6537): eaba1786. PMID: 33795428.

- Simonetta F, Alam IS, Lohmeyer JK, Sahaf B, **Good Z**, Chen W, Xiao Z, Hirai T, Scheller L, Engels P, Vermesh O, Robinson E, Haywood T, Sathirachinda A, Baker J, Malipotlalla MB, Schultz LM, Spiegel JY, Lee JT, Miklos DB, Mackall CL, Gambhir SS, Negrin RS. (2020). *Molecular imaging of chimeric antigen receptor T cells by ICOS-immunoPET*. **Clinical Cancer Research**, 27(4): 1058-68. PMID: 33087332.

- **Good Z**, Borges L, Vivanco Gonzalez N, Sahaf B, Samusik N, Tibshirani R, Nolan GP[§], Bendall SC[§]. (2019). *Proliferative tracing with single-cell mass cytometry optimizes generation of stem cell memory-like T cells*. **Nature Biotechnology**, 37(3): 259-66. PMID: 30742126.
  - Selected as one of the best Q1 2019 papers by the Parker Institute for Cancer Immunotherapy.

- Lynn RC, Weber EW, Sotillo E, Gennert D, Xu P, **Good Z**, Anbunathan H, Lattin J, Jones R, Tieu V, Granja J, DeBourcy C, Xu P, Majzner R, Satpathy AT, Quake SR, Chang H, Mackall CL. (2019). *c-Jun overexpression in CAR T cells induces exhaustion resistance*. **Nature**, 576(7786): 293-300. PMID: 31802004.

- Fahy GM, Brooke RT, Watson JP, **Good Z**, Vasanawala SS, Maecker H, Leipold M, Lin DTS, Kobor MS, Horvath S. (2019). *Reversal of epigenetic aging and immunosenescent trends in humans*. **Aging Cell**, 18(6): e13028. PMID: 31496122.
  - One of the top cited papers in *Aging Cell* (#3 of 1,842); in the top 5% of all research outputs scored by Altmetric (859).

MANUSCRIPTS & PUBLICATIONS *(Continued)*

- **Good Z***, Sarno J*, Jager A, Samusik N, Aghaeepour N, Simonds EF, While L, Lacayo NJ, Fantl WJ, Fazio G, Gaipa G, Biondi A, Tibshirani R, Bendall SC, Nolan GP§, Davis KL§. (2018). *Single-cell developmental classification of B cell precursor acute lymphoblastic leukemia at diagnosis reveals predictors of relapse*. **Nature Medicine**, 24(4): 474-83. PMID: 29505032.
    - News & Views article by Martín-Subero JI (2018). *Predicting leukemia relapse*. **Nature Medicine**, 24(4): 385-7.
- Samusik N, **Good Z**, Spitzer MH, Davis KL, Nolan GP. (2016). *Automated mapping of phenotype space with single-cell data*. **Nature Methods**, 13(6): 493-6. PMID: 27183440.
- Enquist IB, **Good Z**, Jubb AM, Fuh G, Wang X, Junttila MR, Jackson EL, Leong KG. (2014). *Lymph node-independent liver metastasis in a model of metastatic colorectal cancer*. **Nature Communications**, 5: 3530. PMID: 24667486.
- Franci C, Zhou J, Jiang Z, Modrasan Z, **Good Z**, Jackson EL, Kouros-Mehr H. (2013). *Biomarkers of residual disease, disseminated tumor cells, and metastases in the MTV-PyMT breast cancer model*. **PLoS ONE**, 8(3): e58183. PMID: 23520493.
- Dauphinee SM, Voelcker V, **Tebaykina Z**, Wong F, Karsan A. (2011). *Heterotrimeric Gi/Go proteins modulate endothelial TLR signaling independent of the MyD88-dependent pathway*. **American Journal of Physiology - Heart and Circulatory Physiology**, 301(6): H2246-53. PMID: 21949112.
- Strauss DM, Lute S, **Tebaykina Z**, Frey DD, Ho C, Blank GS, Brorson K, Chen Q, Yang B. (2009). *Understanding the mechanism of virus removal by Q sepharose fast flow chromatography during the purification of CHO-cell derived biotherapeutics*. **Biotechnology & Bioengineering**, 104(2): 371-80. PMID: 19575414.

Commentaries & Reviews

- Bucktrout SL, Banovich NE, Butterfield LH, Cimen-Bozkus C, Giles JR, **Good Z**, Goodman D, Jonsson V, Laraeu C, Marson A, Maurer DM, Munson PV, Stubbington M, Taylor S, Cutchin A. (2022). *Advancing T cell-based cancer therapy with single cell technologies*. **Nature Medicine**, 28(9): 1761-1764. PMID: 36127419.
- **Good Z**, Glanville G, Gee MH, Davis MM, Khatri P. (2019). *Computational and systems immunology: a students' perspective*. **Trends in Immunology**, 40(8): 665-8. PMID: 31288986.

Theses

- **Good Z**. (2018). *Lymphocyte differentiation trajectories in human health and cancer*. **Stanford University Libraries Digital Repository**, winter 2018 collection: Ph.D. thesis in Immunology.
- **Tebaykina Z**. (2012). *Characterization of processing bodies in T and B lymphocytes*. **cIRcle Library at the University of British Columbia**, spring 2012 collection: M.S. thesis in Microbiology and Immunology.

*Co-first author; §co-senior author.

CERTIFICATES

- VFPVCB4LA5GM: **Machine Learning**. Taught by Andrew Ng from Stanford University on *Coursera* (2016).
- Laboratory Safety: General Safety, Injury Prevention, Emergency Preparedness, Biosafety, Bloodborne Pathogens, Laser Safety, Chemical Safety, Compressed Gas Safety, Radionuclide Safety, Animal Husbandry (2005 – 2023).
- Patient Data: Protecting Patient Privacy, HIPAA Privacy for Researchers (2013 – 2023).
- Animal Work: Animal Husbandry, Laboratory Animal Care and Use (2005 – 2013).
- Other: Harassment Prevention, Respectful Workplace, Ergonomics, Stewardship/Compliance for Principal Investigators, COVID-19 Hygiene Best Practices (2007 – 2023).

CONSULTING

- **Boom Capital Ventures** (Woodside, CA): cell and protein therapies, screening platforms, health tech (01/2017 – Present; informal).
- **Mubadala Ventures** (San Francisco, CA): cell therapy, cancer diagnostics (02/2020 – 09/2022).
- **Alpha Sights** (New York, NY): immunology & oncology (07/2018 – 01/2022).
- **GLG** (New York, NY): cancer immunotherapy, single-cell sequencing technologies, mass cytometry (05/2020 – 12/2020).
- **Atheneum Partners** (Berlin, Germany): immunology (02/2021 – 08/2021)

SELECTED VOLUNTEER EXPERIENCE

Collective Co-Leader	Computational Health Collective, Engineered Cell Collective	02/2017 – Present
Wikipedia Editor	Wikipedia Community	01/2007 – Present
Community Co-Leader	Bay Area Computational Immunology Community	08/2016 – 04/2018
Classroom Performer	UBC Living Lab Theater Troupe	01/2009 – 05/2010
Rollerblading Performer	2010 Vancouver Winter Olympic Games Opening Ceremony	08/2009 – 02/2010
Organizing Member	UBC World AIDS Day	09/2008 – 12/2009
Graduation Coordinator	UBC Microbiology & Immunology Student Association	03/2007 – 05/2008
Sustainability Club Member	Genentech Green Genes Club	05/2007 – 12/2007
Wellness Peer Educator	UBC Wellness Center	08/2004 – 05/2006

TEACHING

Advocate   **Pediatric COVID-19 Vaccine Trial**   03/2021 – 07/2022
                      Stanford University, Stanford, CA, USA
- Enrolled both children into a Phase I trial of the COVID-19 Pfizer vaccine at the Stanford site. The kids were the first and second to receive the vaccine in their age groups; helped educate the parent community about the trial, the novel coronavirus, and COVID-19; recruited volunteers for Phase I-III trials at Stanford.
- Spoke frequently on local and national news about the importance of vaccinating children against COVID-19.

Invited Educator   **COVID-19 Workshop Series**   (9 – 12) 02/2021
                              Children's Center of the Stanford Community, Stanford, CA, USA
- Taught a series of 4 online workshops to the childcare center teachers and staff on COVID-19, as well as SARS-CoV-2 biology, transmission, treatment, and vaccines; covered best practices and shared advice on minimizing risk to the community.

Leader-in-Residence **Reunion Weekend 2020: Invited Alumna**   10/02/2020
                        Pickering College, Newmarket, ON, Canada
- Took on the role of Leader-in-Residence, a program that brings out exceptional alumni who share their experiences, insights and advice to current students at the annual reunion event and throughout the year.
- Gave an interview with the 102.7 CHOP FM student-ran radio station.

Invited Speaker   **STEM Day Guest Speaker: Immunotherapy**   04/10/2019
                             Lynbrook High School, San Jose, CA, USA
- Gave a talk on cancer immunotherapy to a room of high school students from all years; focused on high-level concepts presented as fun videos and animations; emphasized the importance of math and programming as key skills in current biomedical research.
- Hosted a group of interested students for lunch at Stanford University and shared advice of getting involved in research.
- Continued to mentor one of the students through summer advising on a single-cell analysis and machine learning projects.

Visiting Scientist   **Cellular Engineering Workshop: Immunotherapy**   09/23/2017
                                Teacher Institute, Exploratorium, San Francisco, CA, USA
- Taught a workshop on engineered T cell immunotherapies to a class of middle and high school biology teachers from the San Francisco Bay Area; provided participants with props, teaching materials, and tips for educating and inspiring their students about activating natural immune defenses against cancer, as well as the importance of math and computer science in modern-day biology.

Student Advisor   **Computational & Systems Immunology Ph.D. Program**   01/2015 – 09/2017
                             Stanford University, Stanford, CA, USA
- Advised Immunology Ph.D. students about the Computational & Systems Immunology (CSI) track and relevant courses; held quarterly advising meetings with all 1st year students; organized 3 informational panels about the CSI track for entering students; discussed continuous curriculum development for the CSI track with program leadership.

Teaching Assistant   **IMMUNOL 310: Computational Immunology Seminar Series**   01/2015 – 08/2016
                         Stanford University, Stanford, CA, USA
- Solicited student nominations, invited speakers, and created a course website (*immunol310.stanford.edu*) for the series in summers of 2015 and 2016; co-organized the seminars with Drs. Nikesh Kotecha and Purvesh Khatri; organized student dinners with each speaker following the seminar; was "100% effective" according to the teaching evaluation by the course participants.

Invited Speaker   **Canadian Undergraduate Computer Science Conference**   (22 – 25) 06/2016
                             British Columbia Institute of Technology, Burnaby, BC, Canada
- Gave a full seminar on my career advice to computationally minded undergraduate students from multiple Canadian universities (details on *cucsc.ca*); participated in "Women in Computer Science" panel; offered personal advice to several students.

Teaching Assistant   **MICB 302: Immunology**   09/2010 – 12/2010
                         University of British Columbia, Vancouver, BC, Canada
- Helped students understand the immune system by answering questions, holding office hours, and teaching a course tutorial; presented at review sessions and graded exams; received 2 nominations for a teaching award.

Invited Mentor   **Beyond B.S. Conference**   03/2010 & 03/2011
                            University of British Columbia, Vancouver, BC, Canada
- Shared advice with undergraduate students on considering options following graduation and how to acquire useful skills.

MENTORING

I have served as an informal mentor to the following trainees and staff:

Name	Timeframe	Their position *then*	Their location *then*	Their position *now*	Their location *now*	My position *then*
Kelvin C. Mo	03/2023 – Present	BA Student	UC Berk.	BA Student	UC Berk.	Instructor
Anne M. Kramer, MD, PhD	09/2022 – Present	Postdoc	Stanford	Postdoc	Stanford	Instructor
Yiyun Chen, PhD	06/2022 – Present	Postdoc	Stanford	Postdoc	Stanford	Instructor
Christine Y. Yeh, MS	03/2022 – Present	MD/PhD Student	Stanford	MD/PhD Student	Stanford	Instructor
Mark P. Hamilton, MD, PhD	06/2021 – 08/2022	Clinical Fellow	Stanford	Clinical Fellow	Stanford	Postdoc
Aarushi Mehrotra	04/2019 – 07/2019	High School Student	Lynbrook	BS Student	MIT	Postdoc
Anthony Culos	06/2016 – 08/2016	BS Student	UBC	PhD Student	Columbia	PhD Student
Nora Vivanco Gonzalez, BS	07/2014 – 08/2016	LSRP Level 1	Stanford	Postdoc	Stanford	PhD Student
Kate Choi, BS	02/2010 – 06/2011	MS Student	UBC	Res. Tech. Level 3	UBC	MS Student

Columbia, Columbia University
LSRP, Life Sciences Research Professional
Lynbrook, Lynbrook High School
MIT, Massachusetts Institute of Technology
Postdoc, Postdoctoral Fellow
Stanford, Stanford University
UBC, University of British Columbia
UC Berk., University of California, Berkeley

SELECTED PRESENTATIONS

Invited Talks

Mass Cytometry User Group Meeting Bay Area	2 Tower Place, South San Francisco, CA	May 11, 2023
Precision Oncology News by Genome Web	Webinar Sponsored by 10x Genomics	Oct 11, 2022
36th Society for Immunotherapy of Cancer Annual Meeting	WEWCC & Marriott Marquis, Washington, DC	Nov 11-14, 2021

- *Invited talk:* **Good Z**, Spiegel JY, Sahaf B, Malipatlolla MB, Kurra S, Reynolds W, Hamilton MP, Hanson PJ, Patel S, Feldman SA, Ehlinger Z, Wong Lin A, Vandris P, Wu F, Tamaresis JS, Prabhu S, Frank MJ, Baird JH, Muffly L, Claire GK, Craig J, Kong KA, Wagh D, Coller J, Bendall SC, Tibshirani R, Plevritis SK, Miklos DB, and Mackall CL. Clonal post-infusion CD57$^+$ CAR T cells define durable remission in CD19-CAR therapy. *Oral presentation in Concurrent Session 209: Single Cell Approaches to Advancing Understanding of Immunotherapy Resistance.*

Immunai	Virtual	Nov 3, 2021
Parker Institute for Cancer Immunotherapy	Virtual	Apr 23, 2021
Foresight Institute Vision Weekend	The Internet Archive, San Francisco, CA	Nov 2-3, 2019
Parker Institute for Cancer Immunotherapy	PICI Central Office, San Francisco, CA	Sep 6, 2019
Google Accelerated Science	Google, Mountain View, CA	Aug 15, 2019
Arsenal Bio	Arsenal Bio, South San Francisco, CA	Jul 11, 2019
1st Stanford Immunology Alumni Reunion	Stanford University, Stanford, CA	Jun 25, 2018
Parker Institute for Cancer Immunotherapy	PICI Central Office, San Francisco, CA	Feb 9, 2018
UBC Microbiology & Immunology Seminar (full seminar)	University of British Columbia, Van., Canada	Jun 24, 2016

Oral Presentations

American Association for Cancer Research Annual Meeting	Orange County Conv. Center, Orlando, FL	Apr 14-19, 2023

- *Conference abstract:* **Good Z**, Hamilton MP, Spiegel JY, Kurra S, Desai MH, Prabhu S, Chiou SH, Yeh CY, Chen Y, Yang E, Ozawa MG, Wu F, Frank MJ, Muffly L, Claire GK, Craig J, Iglesias MI, Bharadwaj S, Kong KA, Wagh D, Coller J, Davis MM, Plevritis SK, Sahaf B, Miklos DB, and Mackall CL. Lineage tracing of CAR T cells in patients with B cell malignancies. *Oral presentation in Minisymposium on Clinical Research Excluding Trials.*

Keystone Symposium on Emerging Cellular Therapies	Keystone Resort, Keystone, CO	Apr 27-30, 2022

- *Conference abstract:* **Good Z**, Hamilton MP, Sahaf B, Spiegel JY, Kurra S, Desai MH, Wu F, Yang E, Ozawa MG, Frank MJ, Baird JH, Muffly L, Claire GK, Craig J, Kong KA, Wagh D, Coller J, Tibshirani R, Plevritis SK, Miklos DB, and Mackall CL. Reverse fate mapping of CD19-CAR T cells in patients with lymphoma. *Oral presentation in T cell Exhaustion Session.*

American Association for Cancer Research Annual Meeting	Ernest N. Morial Conv. Ctr., New Orleans, LA	Apr 8-13, 2022

- *Conference abstract:* **Good Z**, Hamilton MP, Sahaf B, Spiegel JY, Kurra S, Desai M, Wu F, Yang E, Ozawa MG, Frank MJ, Baird JH, Muffly L, Claire GK, Craig J, Kong KA, Wagh D, Coller J, Tibshirani R, Plevritis SK, Miklos DB, and Mackall CL. Reverse fate mapping of CD19-CAR T cells in patients with lymphoma. *Oral presentation in Minisymposium on Adoptive Cell Therapy.*

SELECTED PRESENTATIONS *(Continued)*

7th Annual Stanford Cancer Systems Biology Symposium	Virtual	Mar 26, 2021
Stanford Center for Cancer Cell Therapy Scientific Retreat	Virtual	Oct 14, 2020
61st American Society of Hematology Annual Meeting	Orange County Conv. Center, Orlando, FL	Dec 7-10, 2019

- *Conference abstract:* **Good Z**, Spiegel JY, Sahaf B, Malipatlolla MB, Frank MJ, Baird JH, Muffly L, Claire GK, Craig J, Kong KA, Bendall SC, Miklos DB, and Mackall CL. Identification of two CAR T cell populations associated with complete response or progressive disease in adult lymphoma patients treated with axi-cel. *Oral presentation in Session 704: Immunotherapies II.*

Cell Therapies and Immunotherapy Conference	Courtyard by Marriott, San Francisco, CA	Oct 20-22, 2019

- *Conference abstract:* **Good Z**, Spiegel JY, Sahaf B, Malipatlolla MB, Frank MJ, Baird JH, Muffly L, Claire GK, Craig J, Kong KA, Bendall SC, Miklos DB, and Mackall CL. CAR T cell populations associated with complete response or progressive disease in adult lymphoma patients treated with axi-cel. *Oral presentation on Main Podium.*

Parker Institute for Cancer Immunotherapy Retreat	Meadowood Napa Valley, St Helena, CA	Apr 29, 2019
Parker Institute for Cancer Immunotherapy Retreat	Four Seasons Resort Oahu, Kapolei, HI	Apr 25, 2018
Computational & Systems Immunology Ph.D. Thesis Defense	Stanford University, Stanford, CA	Mar 6, 2018
Keystone Symposium on Emerging Cellular Therapies	Keystone Conference Center, Keystone, CO	Feb 11-15, 2018

- *Conference abstract:* **Good Z**, Vivanco Gonzalez N, Samusik N, Sahaf B, Borges L, Tibshirani R, Nolan GP, and Bendall SC. Guiding T-lymphocyte differentiation in cancer immunotherapy applications. *Oral presentation in Workshop 2: Cell Engineering.*

Topics and Techniques in Cancer Immunotherapy	Stanford University, Stanford, CA	Oct 9, 2017
ITI Institute and CyTOF Working Group (full seminar)	Stanford University, Stanford, CA	Aug 8, 2017
32nd Congress of the Int. Society for the Adv. of Cytometry	Hynes Convention Center, Boston, MA	Jun 10-14, 2017

- *Conference abstract:* **Good Z**, Sarno J, Jager A, Samusik N, Aghaeepour N, Simonds EF, While L, Lacayo NJ, Fantl WJ, Gaipa G, Biondi A, Tibshirani R, Bendall SC, Nolan GP, and Davis KL. Single-cell developmental classification of B cell precursor acute lymphoblastic leukemia at diagnosis reveals predictors of relapse. *Oral presentation in Parallel 3 Session: Biomarkers.*

Mass Cytometry Summit	Museum of Science, Boston, MA	Jun 9, 2017
Stanford Immunology Retreat	Asilomar Conference Center, Asilomar, CA	Sep 9-11, 2016
31st Congress of the Int. Society for the Adv. of Cytometry	Wash. State Conv. Center, Seattle, WA	Jun 11-15, 2016

- *Conference abstract:* **Good Z**, Vivanco Gonzalez N, Samusik N, Borges L, Tibshirani R, Nolan GP, and Bendall SC. Dynamics of T-lymphocyte differentiation revealed by tracing single-cell proliferative history. *Oral presentation in Parallel 16 Session: Mass Cytometry.*

American Association for Cancer Research Annual Meeting	Ernest N. Morial Conv. Center, New Orl., LA	Apr 16-20, 2016

- *Conference abstract:* **Good Z**, Sarno J, Jager A, Samusik N, Fantl WJ, Aghaeepour N, Tibshirani R, Bendall SC, Gaipa G, Biondi A, Nolan GP, and Davis KL. Relapse in BCP-ALL predicted by activated signaling in pro-BII to pre-BI developmental transition. *Oral presentation in AACR Minisymposium: Tumor Immunology.*

Intervene Immune 2nd TRIIM Clinical Trial Mini-Symposium	Stanford University, Stanford, CA	Mar 18, 2016
Baxter Lab Retreat (speed talk and poster)	Quadrus Conference Center, Palo Alto, CA	Jan 20, 2016
Intervene Immune 1st TRIIM Clinical Trial Mini-Symposium	Stanford University, Stanford, CA	Oct 1, 2015
Stanford Immunology Retreat (speed talk and poster)	Asilomar Conference Center, Asilomar, CA	Sep 11-13, 2015
Genentech Discovery Oncology Department Meeting	Genentech, South San Francisco, CA	Apr 18, 2013
Microbiology & Immunology M.S. Thesis Defense	University of British Columbia, Van., Canada	Apr 16, 2012
Genentech Colorectal Cancer Working Group Meeting	Genentech, South San Francisco, CA	Nov 25, 2011
ImmunoVancouver 2011 Conference (speed talk and poster)	University of British Columbia, Van., Canada	Jun 7, 2011
24th Canadian Society for Immunology Meeting (talk and poster)	Chateau Lake Louise, Lake Louise, Canada	Apr 8-11, 2011

- *Conference abstract:* **Good Z**, Choi K, Osborne LC, Abraham N, and Gold MR. The role of mRNA processing bodies in memory CD8+ T cells. *Oral presentation & poster in Immune Response, Memory, and Vaccine Design Workshop.*

UBC Life Sci. Institute Grad. Student Assoc. Research Day	University of British Columbia, Van., Canada	Mar 11, 2011
Genentech Late-Stage Purification Department Meeting	Genentech, South San Francisco, CA	Nov 15, 2007

Poster Presentations

Comprehensive Cancer Research Training Program	Stanford University, Stanford, CA	Sep 8-10, 2022
Keystone Symposium on Emerging Cellular Therapies	Fairmont Banff Springs, Banff, AB, Canada	Feb 8-12, 2020

- *Conference abstract:* **Good Z**, Spiegel JY, Sahaf B, Malipatlolla MB, Frank MJ, Baird JH, Muffly L, Claire GK, Craig J, Kong KA, Bendall SC, Miklos DB, and Mackall CL. CAR T cell populations associated with complete response or progressive disease in adult lymphoma patients treated with axi-cel. *Poster presentation in Poster Session I.*

SELECTED PRESENTATIONS *(Continued)*

Department of Biomedical Data Science Retreat	Stanford University, Stanford, CA	Sep 27, 2019
Big Data in Precision Health Conference	Stanford University, Stanford, CA	May 23-24, 2018
6th Center for Cancer Systems Biology Symposium	Stanford University, Stanford, CA	May 11, 2018
5th Center for Cancer Systems Biology Symposium	Stanford University, Stanford, CA	May 5, 2017
Baxter Lab Retreat	Quadrus Conference Center, Palo Alto, CA	Jan 31, 2017
Big Data in Biomedicine Conference	Stanford University, Stanford, CA	May 25-26, 2016
Stanford Pathology Department Retreat	Stanford University, Stanford, CA	Apr 23, 2016
Stanford Cancer Institute Symposium	Stanford University, Stanford, CA	Feb 23, 2016
Stanford Pathology Department Retreat	Stanford University, Stanford, CA	May 2, 2015
4th Center for Cancer Systems Biology Symposium	Stanford University, Stanford, CA	Oct 22, 2015
International Society for Stem Cell Research Meeting	Stockholmsmässan, Stockholm, Sweden	Jun 24-27, 2015

- *Conference abstract:* **Good Z**, Vivanco Gonzalez N, Borges L, Nolan GP, and Bendall SC. A multiplex single-cell assay to track proliferative history in differentiating cell systems. *Poster in Poster Presentation III*.

UBC Life Sci. Institute Grad. Student Assoc. Research Day	University of British Columbia, Van., Canada	Mar 13, 2009
Genentech Summer Intern Poster Day	Genentech, South San Francisco, CA	Aug 9, 2007