Stanford



Joshua Gruber

Associate Professor of Medicine (Oncolocy)

Medicine - Oncology

CLINICAL OFFICE (PRIMARY)

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  Stanford, CA 94305
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ACADEMIC CONTACT INFORMATION

- **Office Phone**
  Tel 650-736-7776

Bio

BIO

Dr. Joshua Gruber is an Associate Professor of Medicine in the division of Oncology at Stanford University Medical Center. He received his Bachelors of Arts, Summa Cum Laude, in biochemistry and physics from the University of Pennsylvania in 2001. He then graduated from the Medical Scientist Training Program at the University of Pennsylvania where he performed doctoral studies in cancer biology and biochemistry. He completed internship and residency in Internal Medicine at Stanford, then was a Clinical Fellowship in Medical Oncology and also a Postdoctoral Fellow in Genetics at Stanford, working in the laboratory of Michael Snyder on integrative genomics of hereditary breast cancer. He is currently has a clinical focus on treating patients with metastatic breast cancer and triple-negative breast cancer and conducts clinical trials on novel therapeutics for these diseases. His laboratory research interests include the molecular biology of breast cancer initiation, the intersection of tumor immunology with cancer growth pathways and the development of molecular tools to interrogate neoplastic tissues.

CLINICAL FOCUS

- Medical Oncology

ACADEMIC APPOINTMENTS

- Associate Prof-Univ Med Line, Medicine - Oncology
- Member, Bio-X

HONORS AND AWARDS

- Post-doctoral Research Fellowship, Susan G. Komen (2017)
- Young Investigator Award, ASCO & Conquer Cancer Foundation (2017)
- Jane Coffin Childs Postdoctoral Fellowship, Jane Coffin Childs Memorial Fund (2016-2018)
- SCI Fellowship Award, Stanford Cancer Institute (2016)
- Barry M. Goldwater Science Scholarship, Barry Goldwater Scholarship and Excellence in Education Foundation (2000-2001)
- Dean’s Scholar, University of Pennsylvania (2000)
- Young International Chemistry Writer of the Year, Pharmacia, Inc. (1999)

- Roy and Diana Vagelos Science Scholar, University of Pennsylvania (1998-2001)

PROFESSIONAL EDUCATION

- Fellowship: Stanford University Hematology and Oncology Fellowship (2016) CA
- Residency: Stanford University Internal Medicine Residency (2013) CA
- Board Certification: Medical Oncology, American Board of Internal Medicine (2017)
- Medical Education: Perelman School of Medicine University of Pennsylvania (2011) PA
- Board Certification, Internal Medicine , 2016
- Fellowship, Stanford University , Medical Oncology (2013)
- Board Certification: Internal Medicine, American Board of Internal Medicine (2015)
- Residency, Stanford University , Internal Medicine (2012)

LINKS

- Gruber Laboratory: https://gruberlabstanford.org

Teaching

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Yan Zhao

Publications

PUBLICATIONS

- **Endotrophin is a circulating fibroinflammatory biomarker associated with treatment response in human metastatic ER+ breast cancer.** *Clinical cancer research : an official journal of the American Association for Cancer Research*
  Santos, B., Bu, D., Virostek, M., Johnson, E., Lewis, C., Vumma, L., Sahoo, S., Peng, Y., Zhang, N., An, Z., McArthur, H., Scherer, P. E., Gruber, et al
  2026

- **Stress triggers global histone synthesis in the liver.** *bioRxiv : the preprint server for biology*
  Rajkumar, S., Vumma, L., Naidoo, J., Zhu, M., Durdana, I., Chandrasekar, S. V., Golder, C., Goar, H., Kicinski, W. K., Gamuyao, R., Wei, Y., Zhu, H., Patel, et al
  2026

- **Results of phase 1 first-in-human clinical trial of HMBD-002, an IgG4 monoclonal antibody targeting VISTA, in advanced solid tumors**
  Rodon, J., Gruber, J. J., Telli, M. L., Hendifar, A., Kim, J. W., Bhardwaj, S., Sharma, P., Thakkar, D., Boyd-Kirkup, J., Kennedy, E.
  AMER ASSOC CANCER RESEARCH.2026

- **Etirinotecan Pegol (NKTR-102) in Patients With Active Brain Metastases From Lung or Breast Cancer.** *Cancer reports (Hoboken, N.J.)*
  Nagpal, S., Nguyen, K. S., Bertrand, S., Cunanan, K. M., Padda, S. K., Pagtama, J. Y., Tisch, A. H., Coffey, G., Thomas, R. P., Sledge, G. W., Gruber, J., Telli, M. L., Pegram, et al
  2025; 8 (9): e70330

- **A Four Amino Acid Intracellular Motif of VISTA Blocks Growth Receptor Signaling in Cancer Cells to Induce Tumor Suppression.** *Cancer research*
  Zhao, Y., Andoh, T., Charles, F., Reddy, P., Paul, K., Goar, H., Durdana, I., Golder, C. J., Hardy, A. N., Juntilla, M. M., Yang, S. R., Lin, C. Y., Sagiv-Barfi, et al
  2025

- **Short-chain fatty acid metabolites propionate and butyrate are unique epigenetic regulatory elements linking diet, metabolism and gene expression.** *Nature metabolism*
  Nshanian, M., Gruber, J. J., Geller, B. S., Chleilat, F., Lancaster, S. M., White, S. M., Alexandrova, L., Camarillo, J. M., Kelleher, N. L., Zhao, Y., Snyder, M. P.

2025

- **VISTA-induced tumor suppression by a four amino acid intracellular motif.** *bioRxiv : the preprint server for biology*
  Zhao, Y., Andoh, T., Charles, F., Reddy, P., Paul, K., Goar, H., Durdana, I., Golder, C., Hardy, A., Juntilla, M. M., Yang, S. R., Lin, C. Y., Sagiv-Barfi, et al
  2025

- **Genome-wide Cas9-mediated screening of essential non-coding regulatory elements via libraries of paired single-guide RNAs.** *Nature biomedical engineering*
  Li, Y., Tan, M., Akkari-Henic, A., Zhang, L., Kip, M., Sun, S., Sepers, J. J., Xu, N., Ariyurek, Y., Kloet, S. L., Davis, R. P., Mikkers, H., Gruber, et al
  2024

- **AI is a viable alternative to high throughput screening: a 318-target study** *SCIENTIFIC REPORTS*
  Wallach, I., Bernard, D., Nguyen, K., Ho, G., Morrison, A., Stecula, A., Rosnik, A., O'Sullivan, A., Davtyan, A., Samudio, B., Thomas, B., Worley, B., Butler, et al
  2024; 14 (1): 7526

- **Serine starvation silences estrogen receptor signaling through histone hypoacetylation.** *Proceedings of the National Academy of Sciences of the United States of America*
  Li, A. M., He, B., Karagiannis, D., Li, Y., Jiang, H., Srinivasan, P., Ramirez, Y., Zhou, M. N., Curtis, C., Gruber, J. J., Lu, C., Rankin, E. B., Ye, et al
  2023; 120 (38): e2302489120

- **A phase 1 first-in-human clinical trial of HMBD-002, an IgG4 monoclonal antibody targeting VISTA, in advanced solid tumors**
  Ahnert, J., Gruber, J., Telli, M. L., Mita, M. M., Mita, A. C., Kim, J. W., Villalona-Calero, M., Patel, M., Yadav, S. S., Sharma, P., Haber, T., Lauren, J., Seet, et al
  LIPPINCOTT WILLIAMS & WILKINS.2023

- **Acetyl-Click Screening Platform Identifies Small-Molecule Inhibitors of Histone Acetyltransferase 1 (HAT1).** *Journal of medicinal chemistry*
  Gaddameedi, J. D., Chou, T., Geller, B. S., Rangarajan, A., Swaminathan, T. A., Dixon, D., Long, K., Golder, C. J., Vuong, V. A., Banuelos, S., Greenhouse, R., Snyder, M. P., Lipchik, et al
  2023

- **Mitochondrial uncoupling induces epigenome remodeling and promotes differentiation in neuroblastoma.** *Cancer research*
  Jiang, H., Greathouse, R. L., Tiche, S. J., Zhao, M., He, B., Li, Y., Li, A. M., Forgo, B., Yip, M., Li, A., Shih, M., Banuelos, S., Zhou, et al
  2022

- **A phase II study of talazoparib monotherapy in patients with wild-type BRCA1 and BRCA2 with a mutation in other homologous recombination genes.** *Nature cancer*
  Gruber, J. J., Afghahi, A., Timms, K., DeWees, A., Gross, W., Aushev, V. N., Wu, H., Balcioglu, M., Sethi, H., Scott, D., Foran, J., McMillan, A., Ford, et al
  2022

- **Deciphering the Warburg effect: Redox is the key to tumor differentiation**
  Jiang Haowen, Greathouse, R. L., He, B., Li, Y., Li, A. M., Forgo, B., Banuelos, S., Gruber, J., Shimada, H., Chiu, B., Ye, J.
  AMER ASSOC CANCER RESEARCH.2022

- **Serine starvation silences estrogen receptor signaling through histone hypoacetylation**
  Li, A. M., Li, Y., He, B., Jiang, H., Lu, C., Gruber, J. J., Rankin, E. B., Ye, J.
  AMER ASSOC CANCER RESEARCH.2022

- **Rationally targeted anti-VISTA antibody that blockades the C-C' loop region can reverse VISTA immune suppression and remodel the immune microenvironment to potently inhibit tumor growth in an Fc independent manner.** *Journal for immunotherapy of cancer*
  Thakkar, D., Paliwal, S., Dharmadhikari, B., Guan, S., Liu, L., Kar, S., Tulsian, N. K., Gruber, J. J., DiMascio, L., Paszkiewicz, K. H., Ingram, P. J., D Boyd-Kirkup, J.
  2022; 10 (2)

- **Chromatin accessibility associates with protein-RNA correlation in human cancer.** *Nature communications*
  Sanghi, A., Gruber, J. J., Metwally, A., Jiang, L., Reynolds, W., Sunwoo, J., Orloff, L., Chang, H. Y., Kasowski, M., Snyder, M. P.
  2021; 12 (1): 5732

- **A phase II clinical trial of talazoparib monotherapy for PALB2 mutation-associated advanced breast cancer.**
  Gruber, J., Gross, W., McMillan, A., Ford, J. M., Telli, M. L.

LIPPINCOTT WILLIAMS & WILKINS.2021

- **Genomic analysis from the talazoparib beyond BRCA clinical trial: Homologous recombination (HR) deficiency scores, loss-of-heterozygosity and mutations in non-BRCA1/2 mutant tumors with other HR mutations**
  Gruber, J. J., Afghahi, A., Hatton, A., Gross, W., Foran, J., McMillan, A., Ford, J. M., Telli, M. L.
  AMER ASSOC CANCER RESEARCH.2021

- **Developing metabolic intervention strategies to reprogram neuroblastoma epigenome and overcome tumor resistance to differentiation therapy**
  Jiang, H., Li, Y., Yip, M., Gruber, J., Li, A., Ye, J.
  AMER ASSOC CANCER RESEARCH.2020

- **Deciphering Warburg effect: hypoxia inhibits tumor cell differentiation through reducing acetyl-CoA generation and chromatin accessibility**
  Ye, J., Li, Y., Gruber, J. J., Litzenburger, U. M., Zhou, Y., Miao, Y. R., LaGory, E. L., Li, A. M., Hu, Z., Hart, L. S., Maris, J. M., Chang, H. Y., Giaccia, et al
  AMER ASSOC CANCER RESEARCH.2020

- **Acetate supplementation restores chromatin accessibility and promotes tumor cell differentiation under hypoxia.** *Cell death & disease*
  Li, Y. n., Gruber, J. J., Litzenburger, U. M., Zhou, Y. n., Miao, Y. R., LaGory, E. L., Li, A. M., Hu, Z. n., Yip, M. n., Hart, L. S., Maris, J. M., Chang, H. Y., Giaccia, et al
  2020; 11 (2): 102

- **Matrix stiffness induces a tumorigenic phenotype in mammary epithelium through changes in chromatin accessibility.** *Nature biomedical engineering*
  Stowers, R. S., Shcherbina, A., Israeli, J., Gruber, J. J., Chang, J., Nam, S., Rabiee, A., Teruel, M. N., Snyder, M. P., Kundaje, A., Chaudhuri, O.
  2019

- **HAT1 Coordinates Histone Production and Acetylation via H4 Promoter Binding.** *Molecular cell*
  Gruber, J. J., Geller, B., Lipchik, A. M., Chen, J., Salahudeen, A. A., Ram, A. N., Ford, J. M., Kuo, C. J., Snyder, M. P.
  2019

- **Talazoparib beyond BRCA: A phase II trial of talazoparib monotherapy in BRCA1 and BRCA2 wild-type patients with advanced HER2-negative breast cancer or other solid tumors with a mutation in homologous recombination (HR) pathway genes.**
  Gruber, J., Afghahi, A., Hatton, A., Scott, D., McMillan, A., Ford, J. M., Telli, M. L.
  AMER SOC CLINICAL ONCOLOGY.2019

- **Association of Tumor Infiltrating Lymphocytes with Homologous Recombination Deficiency and BRCA1/2 Status in Patients with Early Triple-Negative Breast Cancer: A Pooled Analysis.** *Clinical cancer research : an official journal of the American Association for Cancer Research*
  Telli, M. L., Chu, C. n., Badve, S. S., Vinayak, S. n., Silver, D. P., Isakoff, S. J., Kaklamani, V. n., Gradishar, W. n., Stearns, V. n., Connolly, R. M., Ford, J. M., Gruber, J. J., Adams, et al
  2019

- **Chromatin Remodeling in Response to BRCA2-Crisis.** *Cell reports*
  Gruber, J. J., Chen, J. n., Geller, B. n., Jäger, N. n., Lipchik, A. M., Wang, G. n., Kurian, A. W., Ford, J. M., Snyder, M. P.
  2019; 28 (8): 2182–93.e6

- **High-Resolution Bisulfite-Sequencing of Peripheral Blood DNA Methylation in Early-Onset and Familial Risk Breast Cancer Patients.** *Clinical cancer research : an official journal of the American Association for Cancer Research*
  Chen, J. n., Haanpää, M. K., Gruber, J. J., Jäger, N. n., Ford, J. M., Snyder, M. P.
  2019

- **Disruption of mesoderm formation during cardiac differentiation due to developmental exposure to 13-cis-retinoic acid.** *Scientific reports*
  Liu, Q., Van Bortle, K., Zhang, Y., Zhao, M., Zhang, J. Z., Geller, B. S., Gruber, J. J., Jiang, C., Wu, J. C., Snyder, M. P.
  2018; 8 (1): 12960

- **Disruption of mesoderm formation during cardiac differentiation due to developmental exposure to 13-cis-retinoic acid** *SCIENTIFIC REPORTS*
  Liu, Q., Van Bortle, K., Zhang, Y., Zhao, M., Zhang, J. Z., Geller, B. S., Gruber, J. J., Jiang, C., Wu, J. C., Snyder, M. P.
  2018; 8

- **VISTA immune checkpoint deregulation in human triple-negative breast cancer**
  Gruber, J. J., Juntilla, M. M., Yang, S., Geller, B., Jager, N., Lin, C., Lipchik, A. M., Chen, J., Ram, A., Vinayak, S., Telli, M. L., West, R. B., Ford, et al
  AMER ASSOC CANCER RESEARCH.2018

- **Outstanding Questions in the Clinical Management of Triple-Negative Breast Cancer.** *Journal of oncology practice*
  Gruber, J. J., Telli, M. L.
  2017; 13 (5): 305-307

- **Association of AHSG with alopecia and mental retardation (APMR) syndrome.** *Human genetics*
  Reza Sailani, M., Jahanbani, F., Nasiri, J., Behnam, M., Salehi, M., Sedghi, M., Hoseinzadeh, M., Takahashi, S., Zia, A., Gruber, J., Lynch, J. L., Lam, D., Winkelmann, et al
  2017; 136 (3): 287-296

- **Differentiated Thyroid Cancer: Focus on Emerging Treatments for Radioactive Iodine-Refractory Patients** *ONCOLOGIST*
  Gruber, J. J., Colevas, A. D.
  2015; 20 (2): 113-126

- **Long-lived microRNA-Argonaute complexes in quiescent cells can be activated to regulate mitogenic responses** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Olejniczak, S. H., La Rocca, G., Gruber, J. J., Thompson, C. B.
  2013; 110 (1): 157-162

- **Ars2 Promotes Proper Replication-Dependent Histone mRNA 3 ' End Formation** *MOLECULAR CELL*
  Gruber, J. J., Olejniczak, S. H., Yong, J., La Rocca, G., Dreyfuss, G., Thompson, C. B.
  2012; 45 (1): 87-98

- **Hypoxia promotes isocitrate dehydrogenase-dependent carboxylation of alpha-ketoglutarate to citrate to support cell growth and viability** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Wise, D. R., Ward, P. S., Shay, J. E., Cross, J. R., Gruber, J. J., Sachdeva, U. M., Platt, J. M., DeMatteo, R. G., Simon, M. C., Thompson, C. B.
  2011; 108 (49): 19611-19616

- **Loss of the Birt-Hogg-Dube tumor suppressor results in apoptotic resistance due to aberrant TGF beta-mediated transcription** *ONCOGENE*
  Cash, T. P., Gruber, J. J., Hartman, T. R., Henske, E. P., Simon, M. C.
  2011; 30 (22): 2534-2546

- **Imatinib resistance associated with BCR-ABL upregulation is dependent on HIF-1 alpha-induced metabolic reprograming** *ONCOGENE*
  Zhao, F., Mancuso, A., Bui, T. V., Tong, X., Gruber, J. J., Swider, C. R., Sanchez, P. V., Lum, J. J., Sayed, N., Melo, J. V., Perl, A. E., Carroll, M., Tuttle, et al
  2010; 29 (20): 2962-2972

- **The glucose-responsive transcription factor ChREBP contributes to glucose-dependent anabolic synthesis and cell proliferation** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Tong, X., Zhao, F., Mancuso, A., Gruber, J. J., Thompson, C. B.
  2009; 106 (51): 21660-21665

- **Ars2 Links the Nuclear Cap-Binding Complex to RNA Interference and Cell Proliferation** *CELL*
  Gruber, J. J., Zatechka, D. S., Sabin, L. R., Yong, J., Lum, J. J., Kong, M., Zong, W., Zhang, Z., Lau, C., Rawlings, J., Cherry, S., Ihle, J. N., Dreyfuss, et al
  2009; 138 (2): 328-339

- **Ars2 Regulates Both miRNA- and siRNA-Dependent Silencing and Suppresses RNA Virus Infection in Drosophila** *CELL*
  Sabin, L. R., Zhou, R., Gruber, J. J., Lukinova, N., Bambina, S., Berman, A., Lau, C., Thompson, C. B., Cherry, S.
  2009; 138 (2): 340-351

- **DR5 knockout mice are compromised in radiation-induced apoptosis** *MOLECULAR AND CELLULAR BIOLOGY*
  Finnberg, N., Gruber, J. J., Fei, P. W., Rudolph, D., Bric, A., Kim, S. H., Burns, T. F., Ajuha, H., Page, R., Wu, G. S., Chen, Y. H., McKenna, W. G., Bernhard, et al
  2005; 25 (5): 2000-2013