



Amanda Kirane, MD, PhD, FACS, FSSO

Associate Professor of Surgery (General Surgery)
Surgery - General Surgery

CLINICAL OFFICE (PRIMARY)

- **General Surgery**

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Bio

BIO

Dr. Kirane is a fellowship-trained, board-certified specialist in complex general surgical oncology. She is an Assistant Professor in the Department of Surgery, Section of Surgical Oncology, at Stanford University School of Medicine. Dr. Kirane serves as Director of Cutaneous Surgical Oncology at the Stanford Cancer Center and her clinical practice focuses on the diagnosis and treatment of melanoma and other skin cancers. She partners closely with patients and families to provide the most effective treatment approach possible. For each patient, she tailors an evidence-based, personalized care plan that is innovative, comprehensive, and compassionate.

Dr. Kirane is Principal Investigator of multiple studies in melanoma and mechanisms of resistance to immunotherapy, with focus on myeloid biology. Her current interests include immune response and novel therapies in melanoma, predictive modeling of patient responses using organoid technology, and translational biomarker development. She has led research into immune therapy for earlier stage melanoma using regionally directed therapy to augment immune response in melanoma and trials in surgical care in melanoma.

The National Institutes of Health, American Society of Clinical Oncology, the Melanoma Research Alliance, and others have funded her research. She has co-authored articles on her discoveries in the Journal of Clinical Investigation, Nature Communications, Nature Genetics, Cancer Research, Journal of Surgical Oncology, Annals of Surgery, Annals of Surgical Oncology, and elsewhere. Topics include intratumoral therapy, biomarker development, macrophage biology in melanoma and immunotherapeutic resistance, and patient-derived organoid modeling. Dr. Kirane has presented updates on the management of melanoma and other cancers to her peers at meetings of the American College of Surgeons, Society of Surgical Oncology, and Society for Immunotherapy in Cancer.

Dr. Kirane has earned awards for her achievements in clinical care, research, and scholarship. The Society for Immunotherapy of Cancer, Society of Surgical Oncology, Memorial Sloan Kettering Cancer Center, and other prestigious organizations have honored her work. She is a fellow of the American College of Surgeons (FACS) and Society of Surgical Oncology (FSSO). She is a member of the Society for Immunotherapy of Cancer, American

Association of Cancer Research, Society for Melanoma Research, Connective Tissue Oncology Society, Association of Academic Surgeons, and Association of Women Surgeons.

She volunteers her time and expertise on behalf of the Melanoma Research Foundation, members of her community in need, STEM programs for girls, and other initiatives. She also is fellowship trained in Physician Wellness and Wellbeing and teaches somatic technique, mindfulness-based stress reduction, meditation, and breathwork.

CLINICAL FOCUS

- General Surgery
- Skin Cancer Surgery
- Melanoma
- Non-Melanoma
- Immunotherapy
- Immunotherapy, Intratumoral Therapy

ACADEMIC APPOINTMENTS

- Associate Professor - University Medical Line, Surgery - General Surgery
- Member, Bio-X
- Member, Stanford Cancer Institute
- Member, Wu Tsai Neurosciences Institute

ADMINISTRATIVE APPOINTMENTS

- Assistant Professor of Immunology, Stanford University, (2024- present)
- John and Marva Warnock Faculty Scholar, School of Medicine, (2023- present)

PROFESSIONAL EDUCATION

- Board Certification: General Surgery, American Board of Surgery (2017)
- PhD, University of California at Davis , Immunology (2024)
- Board Certification: Surgical Oncology, American Board of Surgery (2018)
- Fellowship: Memorial Sloan Kettering Cancer Center Complex Surgical Oncology (2016) NY
- Residency: University of Texas Southwestern Medical Center (2014) TX
- Medical Education: University of Texas Southwestern Medical School Registrar (2006) TX

Research & Scholarship

CLINICAL TRIALS

- Phase III Trial Investigating 1cm vs 2cm Wide Excision Margins in Primary Cutaneous Melanoma, Not Recruiting

Teaching

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Saurabh Sharma, Prabhjeet Singh, Emma Wagner

Doctoral Dissertation Reader (NonAC)

Kai Chang, Marcos Labrado

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Immunology (Phd Program)
- Oncology (Fellowship Program)

Publications

PUBLICATIONS

- **Disruption of fibroblast MYD88 signaling promotes antitumor immunity in pancreatic ductal adenocarcinoma.** *Cell reports*
Korah, M., Reveron-Thornton, R. F., Fallah, M., Xie, P. Y., Gonçalves, A., Guo, C., Agolia, J. P., Delitto, A. E., Flojo, R. A., Reddy, B., Yip, K. A., Lu, J. M., Tomasso, et al
2025; 44 (10): 116347
- **Antibody-Free Immunopeptide Nanoconjugates for Brain-Targeted Drug Delivery in Glioblastoma Multiforme.** *Bioconjugate chemistry*
Sharma, S., Lee, D., Maity, S., Singh, P., Chadokiya, J., Mohaghegh, N., Hassani, A., Kim, H., Gangarade, A., Ljubimova, J. Y., Kirane, A., Holler, E.
2025
- **Predictive Biomarkers for Immune Checkpoint Inhibitor Therapy in Advanced Melanomas.** *Surgical oncology clinics of North America*
Wagner, E., Larijani, B., Kirane, A. R.
2025; 34 (3): 437-451
- **Antibody-Free Immunopeptide Nano-Conjugates for Brain-Targeted Drug Delivery in Glioblastoma Multiforme.** *bioRxiv : the preprint server for biology*
Sharma, S., Lee, D., Maity, S., Singh, P., Chadokiya, J., Mohaghegh, N., Hassani, A., Kim, H., Gangarade, A., Ljubimova, J. Y., Kirane, A., Holler, E.
2025
- **Outcomes of minimally invasive and open prophylactic gastrectomy for hereditary diffuse gastric cancer** *SURGICAL ONCOLOGY INSIGHT*
Daniel, S. K., Foster, D. S., Ahmad, M., Forrester, J. D., Lee, B., Delitto, D., Kirane, A. R., Visser, B. C., Dua, M. M., Norton, J. A., Poultsides, G. A.
2025; 2 (1)
- **Surgical Considerations in Tumor-Infiltrating Lymphocyte Therapy: Challenges and Opportunities.** *Transplantation and cellular therapy*
Kirane, A., Lee, D., Ariyan, C.
2025; 31 (3S): S591-S598
- **Biochemical, Radiographic, or Pathologic Response to Neoadjuvant Chemotherapy in Resected Pancreatic Cancer: Which is Best?** *Annals of surgery*
Ahmad, M. U., Javadi, C. S., Chang, J. D., Forgó, E., Delitto, D. J., Dua, M. M., Fisher, G. A., Heestand, G. M., Chang, D. T., Pollom, E., Vitzthum, L. K., Kirane, A., Lee, et al
2024
- **Are Palliative Interventions Worth the Risk in Advanced Gastric Cancer? A Systematic Review.** *Journal of clinical medicine*
Gingrich, A. A., Flojo, R. B., Walsh, A., Olson, J., Hanson, D., Bateni, S. B., Gholami, S., Kirane, A. R.
2024; 13 (19)
- **Association between warfarin and survival in invasive melanoma: a population-based cohort study** *SURGICAL ONCOLOGY INSIGHT*
Bateni, S. B., Walsh, A. N., Xu, A., Gingrich, A. A., Maverakis, E., Kirane, A. R.
2024; 1 (3)
- **From Genotype to Phenotype: Raman Spectroscopy and Machine Learning for Label-Free Single-Cell Analysis.** *ACS nano*
Zhang, Y., Chang, K., Ogunlade, B., Herndon, L., Tadesse, L. F., Kirane, A. R., Dionne, J. A.
2024
- **Review of Role of Surgery with Electroporation in Melanoma: Chemotherapy, Immunotherapy, and Gene Delivery.** *Journal of clinical medicine*
Ahmad, M. U., Walsh, A., Kirane, A.
2024; 13 (13)

- **Single cell analysis of melanoma reveals a prognostic myeloid cell signature associated with survival and response to immunotherapy in advanced melanoma**
Ahmad, M., Heo, L., Nair, R., Sharma, S., Kirane, A.
AMER ASSOC IMMUNOLOGISTS.2024
- **Natural history of undifferentiated pleomorphic sarcoma: Experience from the US Sarcoma Collaborative** *JOURNAL OF SURGICAL ONCOLOGY*
Makris, E. A., Tran, T. B., Delitto, D. J., Lee, B., Ethun, C. G., Grignol, V., Howard, J., Bedi, M., Gamblin, T., Tseng, J., Roggin, K. K., Chouliaras, K., Votanopoulos, et al
2024
- **Clinical and Translational Opportunities of Nanocarriers Containing RNAi for the Management of Triple-Negative Breast Cancer** *ADVANCED THERAPEUTICS*
Sharma, S., Pradhan, R., Lee, D., Sharma, M., Nasab, S., Hejmady, S., Chander, S., Mohaghegh, N., Maity, S., Khan, S., Khademhosseini, A., Kirane, A.
2024
- **Toward the Development of Functional Biomarker Assays: Analysis of Neoadjuvant Intralesional Oncolytic Virus Response in High-Risk Stage II Melanoma**
Kirane, A., Lee, D., Ahmad, M., Sharma, S., Serasanambati, M., Lowe, M., Applebee, C., Safrygina, E., Swetter, S., Reddy, S., Warner, A., Funchain, P., Wang, et al
SPRINGER.2024: S33-S34
- **Macrophage function over phenotype determines sensitization to immunotherapy**
Lee, D., Sharma, S., Serasanambati, M., Ahmad, M., Larjani, B., Kirane, A.
SPRINGER.2024: S214
- **Single cell pharmacogenomic pipeline identifies novel opportunities in uterine leiomyosarcoma**
Daniel, S. K., Foster, D., Nosrati, F., Korah, M., Fallah, M., Sun, B. J., Loftus, T., Hu, D., Dua, M., Visser, B., Poultides, G., Kirane, A., Longaker, et al
SPRINGER.2024: S42
- **Advancing precision cancer immunotherapy drug development, administration, and response prediction with AI-enabled Raman spectroscopy.** *Frontiers in immunology*
Chadokiya, J., Chang, K., Sharma, S., Hu, J., Lill, J. R., Dionne, J., Kirane, A.
2024; 15: 1520860
- **Phenylthiazolidin-4-one piperazine Conjugates: Design, Synthesis, anticancer and antimicrobial studies** *RESULTS IN CHEMISTRY*
Singh, D., Patel, R., Aggarwal, A., Das, A., Sharma, S., Behera, B., Panigrahy, R., Kirane, A. R., Kharkwal, H., Kumar, P., Bokolia, N., Sankaranarayanan, M., Chander, et al
2024; 7
- **Design, Synthesis, Anticancer and Antimicrobial Studies of 2-Phenylthiazolidin-4-one Glycinamide Conjugates** *CHEMISTRYSELECT*
Singh, D., Aggarwal, A., Patel, R., Das, A., Sharma, S., Behera, B., Panigrahy, R., Maity, S., Kirane, A. R., Kharkwal, H., Sankaranarayanan, M., Wadhwa, P., Khan, et al
2023; 8 (42)
- **Detection of Circulating Tumor DNA Predicts Recurrence in Soft Tissue Sarcomas**
Sun, B. J., Li, A., Alobuia, W., Hur, D., Daniel, S. K., Kirane, A. R., Poultides, G., Lee, B.
SPRINGER.2023: S16
- **The Impact of Mesenchymal Transition and Macrophage Phenotype in Immunotherapy-Resistant Melanoma**
Ahmad, M., Han, B., Ju, A., Sun, B. J., Maverakis, E., Kirane, A. R.
SPRINGER.2023: S236
- **Multiregional Sequencing Analysis Reveals Extensive Genetic Heterogeneity in Gastric Tumors from Latinos.** *Cancer Research Communications*
Toal, T., Polanco-Echeverry, M. M., Sahasrabudhe, R., Lott, P., Suarez-Olaya, J. J., Guevara-Tique, A. A., et al
2022; 2 (11): 1496
- **Intralesional Interleukin-2 Augmentation Therapy in Treatment-Refractory Melanoma.** *Dermatologic therapy*

- Le, S. T., Ji-Xu, A., Liakos, W., Toussi, A. M., Cheng, M. Y., Ma, C., Wang, E. A., Wilken, R., Boddu, S., Downing, L., Kao, J., Davis, J. R., Monjazeb, et al
2022: e15853
- **Proprotein convertase subtilisin/kexin type 9 is a psoriasis-susceptibility locus that is negatively related to IL36G.** *JCI insight*
Merleev, A., Ji-Xu, A., Toussi, A., Tsoi, L. C., Le, S. T., Luxardi, G., Xing, X., Wasikowski, R., Liakos, W., Brügggen, M. C., Elder, J. T., Adamopoulos, I. E., Izumiya, et al
2022; 7 (16)
 - **Biogeographic and disease-specific alterations in epidermal lipid composition and single cell analysis of acral keratinocytes.** *JCI insight*
Merleev, A. A., Le, S. T., Alexanian, C., Toussi, A., Xie, Y., Marusina, A. I., Watkins, S. M., Patel, F., Billi, A. C., Wiedemann, J., Izumiya, Y., Kumar, A., Uppala, et al
2022
 - **PDXNet portal: patient-derived Xenograft model, data, workflow and tool discovery.** *NAR cancer*
Koc, S., Lloyd, M. W., Grover, J. W., Xiao, N., Seepo, S., Subramanian, S. L., Ray, M., Frech, C., DiGiovanna, J., Webster, P., Neuhauser, S., Srivastava, A., Woo, et al
2022; 4 (2): zcac014
 - **The Role of AXL Tyrosine Kinase in the Melanoma Immune Microenvironment**
Sun, B., Ahmad, M., Gingrich, A. A., Walsh, A., Nielsen, R., Maverakis, E., Kirane, A. R.
SPRINGER.2022: 465
 - **Neoadjuvant Intralesional Therapy for High Risk Stage II Melanoma**
Lowe, M. C., Ahmad, M., Sun, B., Gholami, S., Maverakis, E., Kirane, A. R.
SPRINGER.2022: 534
 - **Author Correction: Comprehensive characterization of 536 patient-derived xenograft models prioritizes candidates for targeted treatment.** *Nature communications*
Sun, H., Cao, S., Mashl, R. J., Mo, C. K., Zaccaria, S., Wendl, M. C., Davies, S. R., Bailey, M. H., Primeau, T. M., Hoog, J., Mudd, J. L., Dean, D. A., Patidar, et al
2022; 13 (1): 294
 - **Chemotherapy After Diagnosis of Malignant Bowel Obstruction is Associated with Superior Survival for Medicare Patients with Advanced Malignancy.** *Annals of surgical oncology*
Bateni, S. B., Gingrich, A. A., Kirane, A. R., Sauder, C. A., Gholami, S., Bold, R. J., Meyers, F. J., Canter, R. J.
2021; 28 (12): 7555-7563
 - **Comprehensive characterization of 536 patient-derived xenograft models prioritizes candidates for targeted treatment.** *Nature communications*
Sun, H., Cao, S., Mashl, R. J., Mo, C. K., Zaccaria, S., Wendl, M. C., Davies, S. R., Bailey, M. H., Primeau, T. M., Hoog, J., Mudd, J. L., Dean, D. A., Patidar, et al
2021; 12 (1): 5086
 - **Conservation of copy number profiles during engraftment and passaging of patient-derived cancer xenografts.** *Nature genetics*
Woo, X. Y., Giordano, J., Srivastava, A., Zhao, Z. M., Lloyd, M. W., de Bruijn, R., Suh, Y. S., Patidar, R., Chen, L., Scherer, S., Bailey, M. H., Yang, C. H., Cortes-Sanchez, et al
2021; 53 (1): 86-99
 - **Novel Targets in Melanoma: Intralesional and Combination Therapy to Manipulate the Immune Response.** *Surgical oncology clinics of North America*
Gingrich, A. A., Kirane, A. R.
2020; 29 (3): 467-483
 - **Elderly Age Is Associated With More Conservative Treatment of Invasive Melanoma.** *Anticancer research*
Bateni, S. B., Johns, A. J., Gingrich, A. A., Gholami, S., Bold, R. J., Canter, R. J., Kirane, A. R.
2020; 40 (5): 2895-2903
 - **The Role of Palliative Surgery for Malignant Bowel Obstruction and Perforation in Advanced Microsatellite Instability-High Colorectal Carcinoma in the Era of Immunotherapy: Case Report.** *Frontiers in oncology*
Judge, S. J., Ji, J., Liu, J., Kaur, M., Kim, E., Gong, J., Tam, K. W., Kirane, A. R., Gholami, S., Canter, R. J., Bold, R. J., Gangi, A., Fakhri, et al

2020; 10: 581

- **Association of MRI T2 Signal Intensity With Desmoid Tumor Progression During Active Observation: A Retrospective Cohort Study.** *Annals of surgery*
Cassidy, M. R., Lefkowitz, R. A., Long, N., Qin, L. X., Kirane, A., Sbaity, E., Hameed, M., Coit, D. G., Brennan, M. F., Singer, S., Crago, A. M.
2020; 271 (4): 748-755
- **Advances in Modeling the Immune Microenvironment of Colorectal Cancer.** *Frontiers in immunology*
Yoon, P. S., Del Piccolo, N., Shirure, V. S., Peng, Y., Kirane, A., Canter, R. J., Fields, R. C., George, S. C., Gholami, S.
2020; 11: 614300
- **Morbidity, mortality and temporal trends in the surgical management of retroperitoneal sarcoma: An ACS-NSQIP follow up analysis.** *Journal of surgical oncology*
Judge, S. J., Lata-Arias, K., Yanagisawa, M., Darrow, M. A., Monjazeb, A. M., Kirane, A. R., Bold, R. J., Canter, R. J., Canter, D. J.
2019; 120 (4): 753-760
- **Clinical Outcomes and Costs Following Unplanned Excisions of Soft Tissue Sarcomas in the Elderly.** *The Journal of surgical research*
Bateni, S. B., Gingrich, A. A., Jeon, S. Y., Hoch, J. S., Thorpe, S. W., Kirane, A. R., Bold, R. J., Canter, R. J.
2019; 239: 125-135
- **Extremity soft tissue sarcoma in the elderly: Are we overtreating or undertreating this potentially vulnerable patient population?** *Journal of surgical oncology*
Gingrich, A. A., Bateni, S. B., Monjazeb, A. M., Thorpe, S. W., Kirane, A. R., Bold, R. J., Canter, R. J.
2019; 119 (8): 1087-1098
- **Role of Radiation Therapy in Adult Extraskeletal Ewing's Sarcoma Patients Treated with Chemotherapy and Surgery.** *Sarcoma*
Saiz, A. M., Gingrich, A. A., Canter, R. J., Kirane, A. R., Monjazeb, A. M., Randall, R. L., Thorpe, S. W.
2019; 2019: 5413527
- **Tumor Symbiosis: Gastrointestinal Stromal Tumor as a Host for Primary Peritoneal Mesothelioma.** *Journal of gastrointestinal surgery : official journal of the Society for Surgery of the Alimentary Tract*
de la Torre, J., Banerjee, S., Baumgartner, J., Lin, G. Y., Burgoyne, A. M., Kirane, A., Sicklick, J.
2019; 23 (4): 879-881
- **Cyclooxygenase-2 Inhibition Potentiates the Efficacy of Vascular Endothelial Growth Factor Blockade and Promotes an Immune Stimulatory Microenvironment in Preclinical Models of Pancreatic Cancer.** *Molecular cancer research : MCR*
Zhang, Y., Kirane, A., Huang, H., Sorrelle, N. B., Burrows, F. J., Dellinger, M. T., Brekken, R. A.
2019; 17 (2): 348-355
- **Serum C-reactive Protein and Neutrophil/Lymphocyte Ratio After Neoadjuvant Radiotherapy in Soft Tissue Sarcoma.** *Anticancer research*
Yanagisawa, M., Gingrich, A. A., Judge, S., Li, C. S., Wang, N., Thorpe, S. W., Kirane, A. R., Bold, R. J., Monjazeb, A. M., Canter, R. J.
2018; 38 (3): 1491-1497
- **T Cells Dominate the Local Immune Response Induced by Intralesional IL-2 in Combination with Imiquimod and Retinoid for In-Transit Metastatic Melanoma.** *The Journal of investigative dermatology*
Ogawa, H. n., Luxardi, G. n., Kirane, A. n., Kulkarni, R. n., Monjazeb, A. M., Cheng, M. Y., Ma, C. n., Maverakis, E. n.
2018; 138 (6): 1442-45
- **Size and Location are the Most Important Risk Factors for Malignant Behavior in Resected Solitary Fibrous Tumors.** *Annals of surgical oncology*
Gholami, S., Cassidy, M. R., Kirane, A., Kuk, D., Zanchelli, B., Antonescu, C. R., Singer, S., Brennan, M.
2017; 24 (13): 3865-3871
- **Neoadjuvant Radiotherapy is Associated with R0 Resection and Improved Survival for Patients with Extremity Soft Tissue Sarcoma Undergoing Surgery: A National Cancer Database Analysis.** *Annals of surgical oncology*
Gingrich, A. A., Bateni, S. B., Monjazeb, A. M., Darrow, M. A., Thorpe, S. W., Kirane, A. R., Bold, R. J., Canter, R. J.
2017; 24 (11): 3252-3263
- **The modified frailty index to predict morbidity and mortality for retroperitoneal sarcoma resections.** *The Journal of surgical research*
Park, J. S., Bateni, S. B., Bold, R. J., Kirane, A. R., Canter, D. J., Canter, R. J.
2017; 217: 191-197

- **The importance of surgical margins in retroperitoneal sarcoma.** *Journal of surgical oncology*
Kirane, A., Crago, A. M.
2016; 113 (3): 270-6
- **Warfarin Blocks Gas6-Mediated Axl Activation Required for Pancreatic Cancer Epithelial Plasticity and Metastasis.** *Cancer research*
Kirane, A., Ludwig, K. F., Sorrelle, N., Haaland, G., Sandal, T., Ranaweera, R., Toombs, J. E., Wang, M., Dineen, S. P., Micklem, D., Dellinger, M. T., Lorens, J. B., Brekken, et al
2015; 75 (18): 3699-705
- **Apricoxib, a novel inhibitor of COX-2, markedly improves standard therapy response in molecularly defined models of pancreatic cancer.** *Clinical cancer research : an official journal of the American Association for Cancer Research*
Kirane, A., Toombs, J. E., Ostapoff, K., Carbon, J. G., Zaknoen, S., Braunfeld, J., Schwarz, R. E., Burrows, F. J., Brekken, R. A.
2012; 18 (18): 5031-42
- **Epithelial-mesenchymal transition increases tumor sensitivity to COX-2 inhibition by apricoxib.** *Carcinogenesis*
Kirane, A., Toombs, J. E., Larsen, J. E., Ostapoff, K. T., Meshaw, K. R., Zaknoen, S., Brekken, R. A., Burrows, F. J.
2012; 33 (9): 1639-46
- **Intraduodenal sarcoma recurrence of retroperitoneal origin: an unusual cause for a duodenal obstruction.** *World journal of surgical oncology*
Bao, J. J., Mansour, J. C., Timmerman, R. D., Kirane, A., Ewing, G. E., Schwarz, R. E.
2012; 10: 59
- **Smac mimetic-derived augmentation of chemotherapeutic response in experimental pancreatic cancer.** *BMC cancer*
Awasthi, N., Kirane, A., Schwarz, M. A., Toombs, J. E., Brekken, R. A., Schwarz, R. E.
2011; 11: 15