Stanford

Jeanne Shen

Associate Professor of Pathology

CLINICAL OFFICE (PRIMARY)

- **Surgical Pathology**
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ACADEMIC CONTACT INFORMATION

- **Alternate Contact**
  Damaris Palma - Administrative Associate
  Email dpalma@stanford.edu

Bio

CLINICAL FOCUS

- Anatomic and Clinical Pathology
- Gastrointestinal and Hepatic Pathology
- Pancreatobiliary Pathology
- Artificial Intelligence
- Digital and Computational Pathology

ACADEMIC APPOINTMENTS

- Associate Professor - University Medical Line, Pathology
- Member, Bio-X
- Member, Stanford Cancer Institute

HONORS AND AWARDS

- Biodesign Faculty Fellowship, Stanford Byers Center for Biodesign (2019)
- Cancer Innovation Award, Stanford Cancer Institute (2019)
- Pathology in Precision Health Research Award, Stanford University Department of Pathology (2017)
- Best Abstract Award Runner-up, Rodger C. Haggitt GI Pathology Society (2013)
- Joseph J. and Ernesta G. Mira Scholarship, Washington University, School of Medicine (2009)
- George F. Gill Scholarship, Washington University, School of Medicine (2009)
- E.A. Marquard Memorial Student Scholarship, Washington University, School of Medicine (2008)
- Dr. Larry T. Chiang Scholarship, Washington University, School of Medicine (2006)
- President’s Scholar Award, Stanford University (2001)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- NCCN Clinical Practice Guidelines in Oncology, Ampullary Adenocarcinoma Panel Member, National Comprehensive Cancer Network (NCCN) (2021 - present)
- Associate Director (Pathology), Center for Artificial Intelligence in Medical Imaging (AIMI), Stanford University (2020 - present)
- ECOG-ACRIN Laboratory Science & Pathology Review Committee Member, Eastern Cooperative Oncology Group-American College of Radiology Imaging Network (ECOG-ACRIN) (2020 - present)
- NCCN Clinical Practice Guidelines in Oncology, Pancreatic Adenocarcinoma Panel Member, National Comprehensive Cancer Network (NCCN) (2020 - present)
- Abstract Review Committee Member, Gastrointestinal Pathology, United States and Canadian Academy of Pathology (USCAP) (2017 - present)
- Member, Executive Committee, Center for Artificial Intelligence in Medical Imaging (AIMI), Stanford University (2017 - present)
- Member, College of American Pathologists (2012 - present)
- Member, United States and Canadian Academy of Pathology (USCAP) (2011 - present)

PROFESSIONAL EDUCATION

- Medical Education: Washington University in St Louis School of Medicine (2010) MO
- Fellowship, Brigham and Women's Hospital, Harvard Medical School , Gastrointestinal and Hepatopancreatobiliary Pathology (2015)
- Board Certification: Anatomic and Clinical Pathology, American Board of Pathology (2014)
- Residency, Brigham and Women's Hospital, Harvard Medical School , Anatomic and Clinical Pathology (2014)
- MD, Washington University in St. Louis , Doctor of Medicine (2010)
- BS, Stanford University , Biological Sciences (2005)

LINKS

- Shen Lab website: http://med.stanford.edu/shen-lab.html

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Gastrointestinal and pancreatobiliary pathology, with major emphasis on GI and pancreatic neoplasia, inflammatory bowel disease, biodesign innovation, and the application of machine learning to digital pathology.

Teaching

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Rathinaraja Jeyaraj, Barathi Subramanian, Xiuzhe Wu

Publications

PUBLICATIONS

- **A deep learning-based automated pipeline for colorectal cancer detection in contrast-enhanced CT images.** *Computerized medical imaging and graphics : the official journal of the Computerized Medical Imaging Society*
  Qiu, C., Miller, S., Subramanian, B., Ryu, A., Zhang, H., Fisher, G. A., Shah, N. H., Mongan, J., Langlotz, C., Poullos, P., Shen, J.
  2026; 128: 102717
- **NucEval: A Robust Evaluation Framework for Nuclear Instance Segmentation** *ArXiv*
  Mahbod, A., Woitek, R., Shen, J.
  2026

- **Evaluating Vision and Pathology Foundation Models for Computational Pathology: A Comprehensive Benchmark Study.** *Research square*
  Gevaert, O., Bareja, R., Carrillo-Perez, F., Zheng, Y., Pizurica, M., Nandi, T., Shen, J., Madduri, R.
  2025
- **Digital Pathology Predicts Immunotherapy Response and Maps Spatial Biomarkers in Gastric Cancer** *Research Square*
  Noh, M., Lee, J. H., Kim, T., Lee, S. H., Cha, S., Choi, Y. W., Choi, J. H., Choi, Y. D., Kim, S., Choi, J. I., Lee, D., Park, H., Lee, et al
  2025
- **Artificial intelligence-based tile preprocessing for more effective whole-slide image tissue segmentation** *Asian Society of Digital Pathology (ASDP) Annual Congress*
  Jeyaraj, R., Subramanian, B., Noh, S., Peterson, M. N., Guo, T., Fisher, G. A., Montine, T. J., Shen, J.
  2025
- **A novel training sample collection framework for improving the performance of multi tissue-type classification in histopathology** *Asian Society of Digital Pathology (ASDP) Annual Congress*
  Subramanian, B., Jeyaraj, R., Noh, S., Peterson, M. N., Guo, T., Fisher, G. A., Montine, T. J., Shen, J.
  2025
- **STARC-9: A Large-scale Dataset for Multi-Class Tissue Classification for CRC Histopathology.** *Advances in neural information processing systems*
  Subramanian, B., Jeyaraj, R., Peterson, M. N., Guo, T., Shah, N., Langlotz, C., Ng, A. Y., Shen, J.
  2025; 38
- **A pathologist-AI collaboration framework for enhancing diagnostic accuracies and efficiencies.** *Nature biomedical engineering*
  Huang, Z., Yang, E., Shen, J., Gratzinger, D., Eyerer, F., Liang, B., Nirschl, J., Bingham, D., Dussaq, A. M., Kunder, C., Rojansky, R., Gilbert, A., Chang-Graham, et al
  2024
- **Immune phenotype profiling based on anatomic origin of melanoma and impact on clinical outcomes of immune checkpoint inhibitor treatment**
  Hwang, S., Ryu, H., Kim, Y., Cho, S., Oum, C., Puche, A., Lee, J., Kim, K., Chung, K., Shin, S., Ock, C., Jung, M., Shen, et al
  LIPPINCOTT WILLIAMS & WILKINS.2024
- **Inflamed immune phenotype predicts favorable clinical outcomes of immune checkpoint inhibitor therapy across multiple cancer types.** *Journal for immunotherapy of cancer*
  Shen, J., Choi, Y. L., Lee, T., Kim, H., Chae, Y. K., Dulken, B. W., Bogdan, S., Huang, M., Fisher, G. A., Park, S., Lee, S. H., Hwang, J. E., Chung, et al
  2024; 12 (2)
- **Computational pathology in 2030: a Delphi study forecasting the role of AI in pathology within the next decade.** *EBioMedicine*
  Berbís, M. A., McClintock, D. S., Bychkov, A., Van der Laak, J., Pantanowitz, L., Lennerz, J. K., Cheng, J. Y., Delahunt, B., Egevad, L., Eloy, C., Farris, A. B., Fraggetta, F., García Del Moral, et al
  2023; 88: 104427
- **Stomach** *Mills and Sternberg's Diagnostic Surgical Pathology, 7th Edition*
  Longacre, T., Shen, J.
  Wolters Kluwer.2022; 7: 1576-1624
- **Deep learning predicts postsurgical recurrence of hepatocellular carcinoma from digital histopathologic images.** *Scientific reports*
  Yamashita, R. n., Long, J. n., Saleem, A. n., Rubin, D. L., Shen, J. n.
  2021; 11 (1): 2047
- **Learning domain-agnostic visual representation for computational pathology using medically-irrelevant style transfer augmentation** *IEEE Transactions on Medical Imaging*
  Yamashita, R., Long, J., Banda, S., Shen*, J., Rubin*, D. L., (*equal contribution)
  2021: 3945-3954
- **Deep learning for the prediction of microsatellite instability in colorectal cancer: a diagnostic study** *The Lancet Oncology*
  Yamashita, R., Long, J., Longacre, T., Peng, L., Berrry, G. J., Martin, B., Higgins, J. P., Rubin, D. L., Shen, J.
  2021; 22 (1): 132-141

- **Deep learning assistance for the histopathologic diagnosis of Helicobacter pylori** *Intelligence-Based Medicine*
  Zhou, S., Marklund, H., Blaha, O., Desai, M., Martin, B., Bingham, D., Berry, G. J., Gomulia, E., Ng, A. Y., Shen, J.
  2020
- **Impact of a deep learning assistant on the histopathologic classification of liver cancer.** *NPJ digital medicine*
  Kiani, A. n., Uyumazturk, B. n., Rajpurkar, P. n., Wang, A. n., Gao, R. n., Jones, E. n., Yu, Y. n., Langlotz, C. P., Ball, R. L., Montine, T. J., Martin, B. A., Berry, G. J., Ozawa, et al
  2020; 3: 23
- **How does AI perform compared to human expert panels in medical Delphi studies? A pilot study through the lens of pathology** *Journal of Pathology Informatics*
  Pantanowitz, J., Manko, C. D., Majewski, J., Berbís, M. A., Farris, A. B., Karsan , A., Bychkov, A., Luna, A., Williams, B., Delahunt, B., Eloy, C., McClintock, D. S., Hollemans, et al
  2026; 21
- **ResGAT: A Residual Graph Attention Network for Cancer Subtype Classification in Whole Slide Images** *Medical Imaging with Deep Learning (MIDL 2026)*
  Lin, Z., Tong, H., Hu, Y., Gui, X. S., Shen, J., Lee, B., Zhang, L., Moyer, D., Zhou, M., Zhou, X. M., Votanopoulos, K.
  2026
- **Polyclonal origins of human premalignant colorectal lesions.** *Nature*
  Van Egeren, D., Schenck, R. O., Khan, A., Horning, A. M., Mo, S., Weiß, C. L., Esplin, E. D., Becker, W. R., Wu, S., Hanson, C., Barapour, N., Jiang, L., Contrepois, et al
  2025
- **Colorectal cancer relies on an immunosuppressive cellular topography and genomic adaptations for establishing brain metastases.** *bioRxiv : the preprint server for biology*
  Sathe, A., Zhang, M., Bai, X., Kang, J. I., Meka, R., Sun, H., Grimes, S. M., Khan, A., Liu, M., Luksik, A. S., Lim, M., Petrisch, C. K., Jackson, et al
  2025
- **STARC-9: A Large-scale Dataset for Multi-Class Tissue Classification for CRC Histopathology.** *ArXiv*
  Subramanian, B., Jeyaraj, R., Peterson, M. N., Guo, T., Shah, N., Langlotz, C., Ng, A. Y., Shen, J.
  2025
- **Deep learning-powered H&E whole-slide image analysis of endothelial cells to characterize tumor vascular environment and correlate treatment outcome to immunotherapy**
  Lee, S., Oh, J., Hwang, S., Shen, J., Park, S., Kim, H., Chae, Y., Lee, S., Choi, Y., Chung, J., Shin, J., Song, H., Valero Puche, et al
  LIPPINCOTT WILLIAMS & WILKINS.2025: 2578
- **Evaluating Vision and Pathology Foundation Models for Computational Pathology: A Comprehensive Benchmark Study.** *medRxiv : the preprint server for health sciences*
  Bareja, R., Carrillo-Perez, F., Zheng, Y., Pizurica, M., Nandi, T. N., Shen, J., Madduri, R., Gevaert, O.
  2025
- **A spatial transcriptomic signature of 26 genes resolved at single-cell resolution characterizes high-risk gastric cancer precursors.** *NPJ precision oncology*
  Huang, R. J., Wichmann, I. A., Su, A., Sathe, A., Shum, M. V., Grimes, S. M., Meka, R., Almeda, A., Bai, X., Shen, J., Nguyen, Q., Luo, I., Han, et al
  2025; 9 (1): 52
- **Distinct gene signatures define the epithelial cell features of mucinous appendiceal neoplasms and pseudomyxoma metastases.** *Frontiers in genetics*
  Ayala, C., Sathe, A., Bai, X., Grimes, S. M., Shen, J., Poultsides, G. A., Lee, B., Ji, H. P.
  2025; 16: 1536982
- **STARC-9: A large-scale dataset for multi-class tissue classification for colorectal cancer histopathology** *The 38th Annual Conference on Neural Information Processing Systems (NeurIPS 2025)*
  Subramanian, B., Jeyaraj, R., Peterson, M. N., Guo, T., Shah, N., Langlotz, C. P., Ng, A. Y., Shen, J.
  2025; 38
- **Understanding Data Influence in Reinforcement Finetuning** *The 38th Annual Conference on Neural Information Processing Systems (NeurIPS 2025)*

Tan, H., Wu, X., Wu, S., Zhang, S., Chen, Y., Sun, X., Shen, J., Qi, X.
2025

- **Single-cell spatial mapping reveals alteration of cell type composition and tissue microenvironment during early colorectal cancer formation.** *bioRxiv : the preprint server for biology*
  Guha, T. K., Esplin, E. D., Horning, A. M., Chiu, R., Paul, K., Weimer, A. K., Becker, W. R., Laquindanum, R., Mills, M. A., Glen Esplin, D., Shen, J., Monte, E., White, et al
  2024

- **Multiomic analysis of familial adenomatous polyposis reveals molecular pathways associated with early tumorigenesis.** *Nature cancer*
  Esplin, E. D., Hanson, C., Wu, S., Horning, A. M., Barapour, N., Nevins, S. A., Jiang, L., Contrepois, K., Lee, H., Guha, T. K., Hu, Z., Laquindanum, R., Mills, et al
  2024

- **Global loss of promoter-enhancer connectivity and rebalancing of gene expression during early colorectal cancer carcinogenesis.** *Nature cancer*
  Zhu, Y., Lee, H., White, S., Weimer, A. K., Monte, E., Horning, A., Nevins, S. A., Esplin, E. D., Paul, K., Krieger, G., Shipony, Z., Chiu, R., Laquindanum, et al
  2024

- **Pathologist Workload Assessment in Gastrointestinal Subspecialty: A Pilot comparative study in an academic setting**
  Razzano, D., Wang, C., Shen, J., Chada, A.
  OXFORD UNIV PRESS INC.2024: S51

- **Prediction of immunotherapy response using mutations to cancer protein assemblies.** *Science advances*
  Kong, J., Zhao, X., Singhal, A., Park, S., Bachelder, R., Shen, J., Zhang, H., Moon, J., Ahn, C., Ock, C. Y., Carter, H., Ideker, T.
  2024; 10 (38): eado9746

- **Prediction of immunochemotherapy response for diffuse large B-cell lymphoma using artificial intelligence digital pathology.** *The journal of pathology. Clinical research*
  Lee, J. H., Song, G. Y., Lee, J., Kang, S. R., Moon, K. M., Choi, Y. D., Shen, J., Noh, M. G., Yang, D. H.
  2024; 10 (3): e12370

- **Spatially Segregated Macrophage Populations Predict Distinct Outcomes In Colon Cancer.** *Cancer discovery*
  Matusiak, M., Hickey, J. W., van IJzendoorn, D. G., Lu, G., Kidzinski, L., Zhu, S., Colburg, D. R., Luca, B., Phillips, D. J., Brubaker, S. W., Charville, G. W., Shen, J., Loh, et al
  2024

- **Generation of synthetic whole-slide image tiles of tumours from RNA-sequencing data via cascaded diffusion models.** *Nature biomedical engineering*
  Carrillo-Perez, F., Pizurica, M., Zheng, Y., Nandi, T. N., Madduri, R., Shen, J., Gevaert, O.
  2024

- **National Comprehensive Cancer Network, NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines), Pancreatic Adenocarcinoma. Version 1.2024** *National Comprehensive Cancer Network*
  Tempero, M. A., Malafa, M. P., Benson III, A. B., Cardin, D. B., Chiorean, E. G., Christensen, J. A., Chung, V., Czito, B., Chiaro, M. D., Dillhoff, M., Donahue, T. R., Dotan, E., Fountzilas, et al
  2024

- **Deep learning-based phenotyping reclassifies combined hepatocellular-cholangiocarcinoma.** *Nature communications*
  Calderaro, J., Ghaffari Laleh, N., Zeng, Q., Maille, P., Favre, L., Pujals, A., Klein, C., Bazille, C., Heij, L. R., Uguen, A., Luedde, T., Di Tommaso, L., Beaufrère, et al
  2023; 14 (1): 8290

- **A spatially mapped gene expression signature for intestinal stem-like cells identifies high-risk precursors of gastric cancer.** *bioRxiv : the preprint server for biology*
  Huang, R. J., Wichmann, I. A., Su, A., Sathe, A., Shum, M. V., Grimes, S. M., Meka, R., Almeda, A., Bai, X., Shen, J., Nguyen, Q., Amieva, M. R., Hwang, et al
  2023

- **Synthetic whole-slide image tile generation with gene expression profile-infused deep generative models.** *Cell reports methods*
  Carrillo-Perez, F., Pizurica, M., Ozawa, M. G., Vogel, H., West, R. B., Kong, C. S., Herrera, L. J., Shen, J., Gevaert, O.

2023; 3 (8): 100534

- **Ampullary Adenocarcinoma, Version 1.2023** *JOURNAL OF THE NATIONAL COMPREHENSIVE CANCER NETWORK*
  Chiorean, E., Del Chiaro, M., Tempero, M. A., Malafa, M. P., Benson, A. B., Cardin, D. B., Christensen, J. A., Chung, V., Czito, B., Dillhoff, M., Donahue, T. R., Dotan, E., Fountzilas, et al
  2023; 21 (7): 753-782
- **Predicting lymph node metastasis from primary tumor histology and clinicopathologic factors in colorectal cancer using deep learning.** *Communications medicine*
  Krogue, J. D., Azizi, S., Tan, F., Flament-Auvigne, I., Brown, T., Plass, M., Reihs, R., Müller, H., Zatloukal, K., Richeson, P., Corrado, G. S., Peng, L. H., Mermel, et al
  2023; 3 (1): 59
- **The polyclonal path to malignant transformation in familial adenomatous polyposis**
  Schenck, R. O., Khan, A., Horning, A., Esplin, E. D., Monte, E., Wu, S., Hanson, C., Bararpour, N., Neves, S., Jiang, L., Contrepois, K., Lee, H., Guha, et al
  AMER ASSOC CANCER RESEARCH.2023
- **Xanthogranulomatous inflammation requiring small bowel anastomosis revision: A case report.** *World journal of gastrointestinal surgery*
  Wang, W., Korah, M., Bessoff, K. E., Shen, J., Forrester, J. D.
  2023; 15 (3): 488-494
- **Small bowel adenocarcinoma in neoterminal ileum in setting of stricturing Crohn's disease: A case report and review of literature.** *World journal of clinical cases*
  Karthikeyan, S., Shen, J., Keyashian, K., Gubatan, J.
  2023; 11 (9): 2021-2028
- **PlexusNet: A Neural Network Architectural Concept for Medical Image Classification** *Computers in Biology and Medicine*
  Eminaga, O., Abbas, M., Shen, J., Laurie, M., Brooks, J. D., Liao, J., Rubin, D. L.
  2023: 106594
- **A spatial map of human macrophage niches reveals context-dependent macrophage functions in colon and breast cancer.** *Research square*
  Matusiak, M., Hickey, J. W., Luca, B., Lu, G., Kidziński, L., Zhu, S., Colburg, D. R., Phillips, D. J., Brubaker, S. W., Charville, G. W., Shen, J., Nolan, G. P., Newman, et al
  2023
- **Development and Validation of a Machine Learning Model for Detection and Classification of Tertiary Lymphoid Structures in Gastrointestinal Cancers.** *JAMA network open*
  Li, Z., Jiang, Y., Li, B., Han, Z., Shen, J., Xia, Y., Li, R.
  2023; 6 (1): e2252553
- **Relationship between tumor microenvironment (TME)-based histomic TGFβ signature (TGFBs), stromal fibroblast recruitment, and exclusion of immune cells as immunotherapy resistance mechanisms** *Journal of Clinical Oncology*
  Park, G., Park, J., Shen, J., Choi, Y., Lee, T., Kim, H., Chae, Y., Lee, S., Park, S., Chung, J., Oum, C., Ma, M., Seo, et al
  2023; 41 (16)
- **RNA-to-image multi-cancer synthesis using cascaded diffusion models** *bioRxiv*
  Carrillo-Perez, F., Pizurica, M., Zheng, Y., Shen, J., Gevaert, O.
  2023
- **RNA-to-image multi-cancer synthesis using cascaded diffusion models** *bioRxiv*
  Carrillo-Perez, F., Pizurica, M., Zheng, Y., Shen, J., Gevaert, O.
  2023
- **Subcutaneous Sweet Syndrome Successfully Treated With Ustekinumab in a Patient With Ulcerative Colitis.** *ACG case reports journal*
  Hu, K. A., Shen, J., Rieger, K., Wei, M. T., Gubatan, J.
  2022; 9 (11): e00881
- **Nestin as a diagnostic and prognostic marker for combined hepatocellular-cholangiocarcinoma.** *Journal of hepatology*
  Calderaro, J., Di Tommaso, L., Maille, P., Beaufrere, A., Nguyen, C. T., Heij, L., Gnemmi, V., Graham, R. P., Charlotte, F., Chartier, S., Wendum, D., Vij, M., Allende, et al

2022

- **Rapid Deployment of Whole Slide Imaging for Primary Diagnosis in Surgical Pathology at Stanford Medicine.** *Archives of pathology & laboratory medicine*
  Rojansky, R., Jhun, I., Dussaq, A. M., Chirieleison, S. M., Nirschl, J. J., Born, D., Fralick, J., Hetherington, W., Kerr, A. M., Lavezo, J., Lawrence, D. B., Lummus, S., Macasaet, et al
  2022
- **The inflamed immune phenotype (IIP): A clinically actionable artificial intelligence (AI)-based biomarker predictive of immune checkpoint inhibitor (ICI) outcomes across > 16 primary tumor types**
  Shen, J., Choi, Y., Lee, T., Kim, H., Chae, Y., Dulken, B., Bogdan, S., Huang, M., Fisher, G. A., Park, S., Lee, S., Hwang, J., Chung, et al
  LIPPINCOTT WILLIAMS & WILKINS.2022
- **AI-enabled in silico immunohistochemical characterization for Alzheimer's disease.** *Cell reports methods*
  He, B., Bukhari, S., Fox, E., Abid, A., Shen, J., Kawas, C., Corrada, M., Montine, T., Zou, J.
  2022; 2 (4): 100191
- **MITI minimum information guidelines for highly multiplexed tissue images.** *Nature methods*
  Schapiro, D., Yapp, C., Sokolov, A., Reynolds, S. M., Chen, Y., Sudar, D., Xie, Y., Muhlich, J., Arias-Camison, R., Arena, S., Taylor, A. J., Nikolov, M., Tyler, et al
  2022; 19 (3): 262-267
- **Ampullary Adenocarcinoma, Version 1.2022** *NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®)*
  Tempero, M. A., Malafa, M. P., Behrman, S. W., Chiorean, G. E., Al-Hawary, M., Benson, A. B., Cardin, D. B., Chung, V., Czito, B., Del Chiaro, M., Dillhoff, M., Donahue, T. R., Dotan, et al
  2022
- **Synthetic whole-slide image tile generation with gene expression profiles infused deep generative models** *bioRxiv*
  Carrillo-Perez, F., Pizurica, M., Ozawa, M. G., Vogel, H., West, R. B., Kong, C. S., Herrera, L. J., Shen, J., Gevaert, O.
  2022
- **Deep Learning-Based Sparse Whole-Slide Image Analysis for the Diagnosis of Gastric Intestinal Metaplasia** *arXiv*
  Braatz, J., Rajpurkar, P., Zhang, S., Ng, A. Y., Shen, J.
  2022
- **A spatial map of human macrophage niches links tissue location with function in colon and breast cancer** *bioRxiv*
  Matusiak, M., Hickey, J., Luca, B., Lu, G., Kidziński, L., Szu, S., Colburg, D. R., Phillips, D., Charville, G., Shen, J., Nolan, G. P., Newman, A., West, et al
  2022
- **Global loss of fine-scale chromatin architecture and rebalancing of gene expression during early colorectal cancer development** *bioRxiv*
  Zhu, Y., Lee, H., Weimer, A. K., Horning, A., Nevins, S. A., Esplin, E. D., Paul, K., Krieger, G., Shipony, Z., Mills, M., Laquindanum, R., Ladabaum, U., Chiu, et al
  2022
- **Single-cell analyses define a continuum of cell state and composition changes in the malignant transformation of polyps to colorectal cancer** *Nature Genetics*
  Becker, W. R., Nevins, S. A., Chen, D. C., Chiu, R., Horning, A., Laquindanum, R., Mills, M., Chaib, H., Ladabaum, U., Longacre, T., Shen, J., Esplin, E. D., Kundaje, et al
  2022; 54: 985-995
- **Distinct cell states define the developmental trajectories of mucinous appendiceal neoplasms towards pseudomyxoma metastases** *bioRxiv*
  Ayala, C., Sathe, A., Bai, X., Grimes, S. M., Shen, J., Poultsides, G. A., Lee, B., Ji, H. P.
  2022
- **Pancreatic Adenocarcinoma, Version 2.2021** *JOURNAL OF THE NATIONAL COMPREHENSIVE CANCER NETWORK*
  Tempero, M. A., Malafa, M. P., Al-Hawary, M., Behrman, S. W., Benson, A. B., Cardin, D. B., Chiorean, E., Chung, V., Czito, B., Del Chiaro, M., Dillhoff, M., Donahue, T. R., Dotan, et al
  2021; 19 (4): 439-457
- **Learning domain-agnostic visual representation for computational pathology using medically-irrelevant style transfer augmentation** *Arxiv*
  Yamashita, R., Long, J., Banda, S., Shen, J., Rubin, D. L.

2021

- **Single-cell analyses reveal a continuum of cell state and composition changes in the malignant transformation of polyps to colorectal cancer** *bioRxiv*

  Becker, W. R., Nevins, S. A., Chen, D. C., Chiu, R., Horning, A., Laquindanum, R., Mills, M., Chaib, H., Ladabaum, U., Longacre, T., Shen, J., Esplin, E. D., Kundaje, et al

  2021

- **Multi-omic Analysis of Familial Adenomatous Polyposis Reveals Molecular Pathways and Polyclonal Spreading Associated with Early Tumorigenesis** *19 May 2021, PREPRINT (Version 1) available at Research Square*

  Horning, A. M., Esplin, E. D., Wu, S., Hanson, C., Bararpour, N., Nevins, S. A., Jiang, L., Contrepois, K., Lee, H., Guha, T. K., Hu, Z., Laquindanum, R., Mills, et al

  2021

- **Artificial intelligence-powered spatial analysis of tumor-infiltrating lymphocytes predicts survival after immune checkpoint inhibitor therapy across multiple cancer types.** *Journal of Clinical Oncology*

  Shen, J., Lee, T., Hwang, J., Choi, Y., Lee, S., Kim, H., Chung, J., Bogdan, S., Huang, M., Raclin, T., Fisher, G. A., Pereira, S., Park, et al

  2021; 39

- **Pepsinogens and Gastrin Demonstrate Low Discrimination for Gastric Precancerous Lesions in a Multi-Ethnic United States Cohort.** *Clinical gastroenterology and hepatology : the official clinical practice journal of the American Gastroenterological Association*

  Huang, R. n., Park, S. n., Shen, J. n., Longacre, T. n., Ji, H. n., Hwang, J. H.

  2021

- **Development and Use of Natural Language Processing for Identification of Distant Cancer Recurrence and Sites of Distant Recurrence Using Unstructured Electronic Health Record Data.** *JCO clinical cancer informatics*

  Karimi, Y. H., Blayney, D. W., Kurian, A. W., Shen, J. n., Yamashita, R. n., Rubin, D. n., Banerjee, I. n.

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