



## Raja Narayan, MD MPH

- Affiliate, Dean's Office Operations - Dean Other
- Resident in Surgery - General Surgery

### CLINICAL OFFICES

- **General Surgery**

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### Bio

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#### BIO

A Bay Area native, Dr. Raja Narayan attended James Logan High School in Union City before going on to Berkeley to obtain his BS in Chemical Biology. He earned his MPH in Biostatistics from Yale before his MD at the University of California, Irvine. Dr. Narayan joined the Stanford General Surgery residency program in 2015.

Prior to joining Stanford, Dr. Narayan collaborated with the online education platform, Khan Academy, where he developed a library of Physiology videos for the MCAT as well as clinical videos for the NCLEX. While at Yale, Dr. Narayan led a multi-disciplinary team of engineers, pathologists, and surgeons to design, construct, test, and patent a device that preserves intestinal tissue better than the standard of care used to preserve harvested tissue for small bowel transplantation. This work earned him grants from the Yale Center for Engineering, Innovation, and Design as well as the Excellence in Medicine and Physician of Tomorrow awards by the American Medical Association.

Between 2017-2019, Dr. Narayan spent a research sabbatical with the Hepatopancreatobiliary Surgery service at the Memorial Sloan Kettering Cancer Center studying targets for pancreatic cancer vaccines, genomic correlates of liver tumor biology, and regional differences in biliary tree cancer arising in patients from around the world. Since returning to Stanford in June 2019, Dr. Narayan now leads a team studying the use of artificial intelligence to define donor liver histopathology to predict the risk for early graft failure after transplantation.

After completion of his residency training, Dr. Narayan plans to pursue a fellowship in Complex General Surgical Oncology.

#### CLINICAL FOCUS

- Residency
- General Surgery
- Hepatobiliary and Pancreatic Surgery
- Surgical Oncology

## HONORS AND AWARDS

- Best Clinical Research Oral Presentation, Stanford University Department of Surgery (2020)
- Postgraduate Fellowship Award, #Ipha Omega #Ipha Honor Society (2020)
- Young Investigator Award, American Transplant Congress (2020)
- Best Clinical Research Oral Presentation, Stanford University Department of Surgery (2019)
- Presidential Plenary Finalist, Americas Hepato-Pancreato-Biliary Association (2018)
- Excellence in Medicine Award, American Medical Association (2014)
- Global Health Case Competition 1st Place, Yale Global Health Leadership Initiative (2014)
- Physicians of Tomorrow Award, American Medical Association (2014)
- Gold Scholar Award, New England Journal of Medicine (2012)

## BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Editorial Board Member, Translational Gastroenterology and Hepatology (2020 - present)
- Program Evaluation Committee Member, Stanford University General Surgery Residency Training Program (2019 - present)
- Resident Editorial Board Member, Journal of Gastrointestinal Surgery (2019 - present)
- Institutional Review Board Member, Yale University School of Medicine (2013 - 2014)

## PROFESSIONAL EDUCATION

- Postdoctoral Fellowship, Memorial Sloan Kettering Cancer Center , Hepatopancreatobiliary Surgery (2019)
- MD, University of California, Irvine , Medicine (2015)
- MPH, Yale School of Public Health , Applied Biostatistics and Epidemiology (2014)
- BS, University of California, Berkeley , Chemical Biology (2009)

## PATENTS

- Marc L Melcher, Linfeng Yang, Raja R Narayan, Simon B Chen, Natasha Abadilla. "United States Patent 62/926453 Portable Device to Quantify Liver Steatosis in a biopsy Using a Computer Imaging Platform", Leland Stanford Junior University, Oct 26, 2019
- John P. Geibel, Joseph Zinter, Manuel Rodriguez-Davalos, Roger Patron-Lozano, Spencer Backus, Andrew Crouch, Brian Loeb, Raja Narayan, Kristi Oki, Natalie Pancer,. "United States Patent 14/674,678 Perfusion systems and methods of perfusing at least a portion of a small intestine", Yale University, Mar 10, 2016

## PERSONAL INTERESTS

Surgical Oncology, Hepatopancreatobiliary (HPB) Surgery, Hepatic Artery Infusion Chemotherapy, Tumor Genome, Cancer Immunotherapy, Artificial Intelligence, Gastric Cancer, Cancer Outcomes

## INTERNET LINKS

- Khan Academy YouTube Videos: <https://www.youtube.com/user/rajarnarayan>
- Twitter: <https://twitter.com/rajarnarayan>
- LinkedIn: <https://www.linkedin.com/in/rajarnarayan/>

## Publications

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### PUBLICATIONS

- **Addition of adjuvant hepatic artery infusion to systemic chemotherapy following resection of colorectal liver metastases is associated with reduced liver-related mortality.** *Journal of surgical oncology*  
Srouji, R., Narayan, R., Boerner, T., Buisman, F., Seier, K., Gonen, M., Balachandran, V. P., Drebin, J., Jarnagin, W. R., Kingham, T. P., Wei, A., Kemeny, N. E., D'Angelica, et al

2020

- **Recurrence After Liver Resection of Colorectal Liver Metastases: Repeat Resection or Ablation Followed by Hepatic Arterial Infusion Pump Chemotherapy.** *Annals of surgical oncology*  
Buisman, F. E., Filipe, W. F., Kemeny, N. E., Narayan, R. R., Srouji, R. M., Balachandran, V. P., Boerner, T., Drebin, J. A., Jarnagin, W. R., Kingham, T. P., Wei, A. C., Grtinhagen, D. J., Verhoef, et al  
2020
- **Disease-free interval and tumor functional status can be used to select patients for resection/ablation of liver metastases from adrenocortical carcinoma: insights from a multi-institutional study.** *HPB : the official journal of the International Hepato Pancreato Biliary Association*  
Ayabe, R. I., Narayan, R. R., Ruff, S. M., Wach, M. M., Lo, W., Nierop, P. M., Steinberg, S. M., Ripley, R. T., Davis, J. L., Koerkamp, B. G., D'Angelica, M. I., Kingham, T. P., Jarnagin, et al  
2020; 22 (1): 169–75
- **NuSeT: A deep learning tool for reliably separating and analyzing crowded cells** *PLoS Computational Biology*  
Yang, L., et al  
2020
- **Extrahepatic recurrence rates in patients receiving adjuvant hepatic artery infusion and systemic chemotherapy after complete resection of colorectal liver metastases.** *Journal of surgical oncology*  
Srouji, R. M., Narayan, R. R., Boerner, T., Buisman, F. E., Seier, K., Gonen, M., Balachandran, V. P., Drebin, J. A., Jarnagin, W. R., Kingham, T. P., Wei, A., Kemeny, N. E., D'Angelica, et al  
2020
- **ASO Author Reflections: Perioperative Genomic Profiles and Prognosis of Peripheral and Perihepatic Circulating Tumor DNA in Patients with Colorectal Liver Metastases** *ANNALS OF SURGICAL ONCOLOGY*  
Narayan, R. R., Kingham, T.  
2019; 26: S583–S584
- **Quantification of Donor Liver Steatosis Using an Unsupervised Artificial Intelligence Platform**  
Narayan, R., Abadilla, N., Yang, L., Hsu, C., Jensen, C., Chen, S. B., Higgins, J. P., Melcher, M. L.  
ELSEVIER SCIENCE INC.2019: E151
- **10-Year Experience of Kasai Hepatoportoenterostomy in Biliary Atresia: High-Dose Adjuvant Steroids Improve Outcomes**  
Taylor, J., Abadilla, N., Narayan, R., Pickering, J. M., Bruzoni, M.  
ELSEVIER SCIENCE INC.2019: E164
- **Peripheral Circulating Tumor DNA Detection Predicts Poor Outcomes After Liver Resection for Metastatic Colorectal Cancer**  
Narayan, R. R., Goldman, D. A., Gonen, M., Reichel, J., Huberman, K. H., Raj, S., Viale, A., Kemeny, N. E., Allen, P. J., Balachandran, V. P., D'Angelica, M. I., DeMatteo, R. P., Drebin, et al  
SPRINGER.2019: 1824–32
- **ASO Author Reflections: Perioperative Genomic Profiles and Prognosis of Peripheral and Perihepatic Circulating Tumor DNA in Patients with Colorectal Liver Metastases.** *Annals of surgical oncology*  
Narayan, R. R., Kingham, T. P.  
2019
- **Predicting Pathology From Imaging in Children Undergoing Resection of Congenital Lung Lesions**  
Narayan, R. R., Abadilla, N., Greenberg, D. R., Sylvester, K. G., Hintz, S. R., Barth, R. A., Bruzoni, M.  
ACADEMIC PRESS INC ELSEVIER SCIENCE.2019: 68–73
- **Regional differences in gallbladder cancer pathogenesis: Insights from a multi-institutional comparison of tumor mutations** *CANCER*  
Narayan, R. R., Creasy, J. M., Goldman, D. A., Gonen, M., Kandath, C., Kundra, R., Solit, D. B., Askan, G., Klimstra, D. S., Basturk, O., Allen, P. J., Balachandran, V. P., D'Angelica, et al  
2019; 125 (4): 575–85
- **Lost in translation: Informed consent in the medical mission setting**  
Sceats, L. A., Morris, A. M., Narayan, R. R., Mezynski, A., Woo, R. K., Yang, G. P.  
MOSBY-ELSEVIER.2019: 438–43
- **Peripheral Circulating Tumor DNA Detection Predicts Poor Outcomes After Liver Resection for Metastatic Colorectal Cancer.** *Annals of surgical oncology*

- Narayan, R. R., Goldman, D. A., Gonen, M., Reichel, J., Huberman, K. H., Raj, S., Viale, A., Kemeny, N. E., Allen, P. J., Balachandran, V. P., D'Angelica, M. I., DeMatteo, R. P., Drebin, et al  
2019
- **Prediction of Recurrence Patterns from Hepatic Parenchymal Disease After Resection of Colorectal Liver Metastases.** *Annals of surgical oncology*  
Narayan, R. R., Harris, J. W., Chou, J. F., Gonen, M., Bao, F., Shia, J., Allen, P. J., Balachandran, V. P., Drebin, J. A., Jarnagin, W. R., Kemeny, N. E., Kingham, T. P., D'Angelica, et al  
2019
  - **Role of Hepatic Artery Infusion Chemotherapy in Treatment of Initially Unresectable Colorectal Liver Metastases: A Review.** *JAMA surgery*  
Datta, J., Narayan, R. R., Kemeny, N. E., D'Angelica, M. I.  
2019
  - **Predicting Pathology From Imaging in Children Undergoing Resection of Congenital Lung Lesions.** *The Journal of surgical research*  
Narayan, R. R., Abadilla, N., Greenberg, D. R., Sylvester, K. G., Hintz, S. R., Barth, R. A., Bruzoni, M.  
2018; 236: 68–73
  - **Pancreaticoduodenectomy with right gastric vessels preservation: impact on intraoperative and postoperative outcomes.** *ANZ journal of surgery*  
Gagniere, J., Le Roy, B., Veziant, J., Pereira, B., Narayan, R. R., Pezet, D., Buc, E., Dupre, A.  
2018
  - **Regional differences in gallbladder cancer pathogenesis: Insights from a multi-institutional comparison of tumor mutations.** *Cancer*  
Narayan, R. R., Creasy, J. M., Goldman, D. A., Gonen, M., Kandoth, C., Kundra, R., Solit, D. B., Askan, G., Klimstra, D. S., Basturk, O., Allen, P. J., Balachandran, V. P., D'Angelica, et al  
2018
  - **Lost in translation: Informed consent in the medical mission setting.** *Surgery*  
Sceats, L. A., Morris, A. M., Narayan, R. R., Mezynski, A., Woo, R. K., Yang, G. P.  
2018
  - **Robotic-Assisted Lobectomies in the National Cancer Database** *JOURNAL OF THE AMERICAN COLLEGE OF SURGEONS*  
Arnold, B. N., Thomas, D. C., Narayan, R., Blasberg, J. D., Detterbeck, F. C., Boffa, D. J., Kim, A. W.  
2018; 226 (6): 1052–62
  - **Predicting Pathology from Imaging in Children Undergoing Resection of Congenital Pulmonary Malformations**  
Narayan, R. R., Abadilla, N., Greenberg, D. R., Bruzoni, M.  
ELSEVIER SCIENCE INC.2017: S154