

BIOGRAPHICAL SKETCH

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NAME: Delitto, Daniel

eRA COMMONS USER NAME (credential, e.g., agency login): DANDELITTO

POSITION TITLE: Assistant Professor of Surgery

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Washington University in St. Louis	B.S.	06/2007	Biomedical Engineering
University of Pittsburgh School of Medicine	M.D.	06/2011	Medicine
University of Florida College of Medicine	Ph.D.	06/2016	Immunology
University of Florida College of Medicine	Residency	06/2019	General Surgery
Johns Hopkins University School of Medicine	Fellowship	07/2021	Complex General Surgical Oncology

A. Personal Statement

I have a broad educational background that includes an engineering degree, a medical degree and ten years of postgraduate training. I was fortunate enough to have extraordinary surgical mentors who understood the importance of dedicated scientific training. To this end, my immunology training was led by Drs. Shannon Wallet and Lyle Moldawer, two world-renowned scientists who are heavily invested in the educational process. From their efforts, I was given the opportunity to pursue a PhD during my academic years of surgical residency. Following this, in fellowship at Johns Hopkins University, I completed a postdoctoral fellowship in the laboratory of Dr. Elizabeth Jaffee, an extraordinary scientific educator at the forefront of immunotherapy for pancreatic ductal adenocarcinoma (PDAC). It was under Dr. Jaffee's guidance that I developed the first iteration of PancVax Gel, with unprecedented efficacy. My growing scientific expertise was complemented by unparalleled surgical training from Drs. John Cameron, Christopher Wolfgang, Jin He and many others in the group considered to be among the highest volume pancreatic surgeons in the world. *The end result of such extensive and diverse training is a unique appreciation for the evolving relationship between scientific insights and multidisciplinary clinical care.*

As an assistant professor in the department of surgery at Stanford University, my research program focuses on the interface between fibrosis, wound healing and immunity in solid tumors. I have the privilege of close mentorship from Dr. Michael Longaker, a world expert in fibrosis. Thus, as a complex general surgical oncologist with 80% protected research time in the academically rich environment of Stanford University, I cannot imagine a better situation to advance the way we care for surgical patients by elucidating fundamental processes behind postoperative fibrosis. **I am extremely optimistic about this proposal, as it is based on an extremely strong foundation of data and addresses a major cause of surgical morbidity.**

Ongoing projects I would like to highlight include:

Damon Runyon Cancer Research Foundation Clinical Investigator Award

Delitto (PI)

07/01/2022 – 06/30/2025

Pathogen sensing in fibroblasts restrains antitumor immunity in pancreatic cancer

Foster DS*, Januszyk M*, **Delitto D***, Yost KE, Griffin M, Guo J, Guardino N, Delitto AE, Chinta M, Burcham AR, Nguyen AT, Bauer-Rowe KE, Titan AL, Salhotra A, Jones RE, da Silva O, Lindsay HG, Berry CE, Chen K, Henn D, Mascharak S, Talbott HE, Kim A, Nosrati F, Sivaraj D, Ransom RC, Matthews M, Khan A, Wagh D, Collier J, Gurtner GC, Wan DC, Wapnir IL, Chang HY, Norton JA, Longaker MT. Multiomic analysis reveals conservation of cancer associated fibroblast phenotypes across species and tissue of origin. *Cancer Cell*. 2022; 14;40(11):1392-1406.e7. PubMed PMID 36270275.

*Co-first authors

B. Positions, Scientific Appointments, and Honors

Positions and Scientific Appointments

2023 – Present Associate Editor, Surgical Oncology Section, *Frontiers in Oncology*
2023 – Present Warnock Faculty Scholar, Stanford University Department of Surgery
2023 – Present Associate Chair of Academic Affairs, Stanford University Department of Surgery
2021 – Present Member, Association for Academic Surgery (AAS)
2021 – Present Member, Society for Surgery of the Alimentary Tract (SSAT)
2021 – Present Member, Society for Immunotherapy of Cancer (SITC)
2021 – Present Assistant Professor of Surgery, Stanford University, Stanford, CA
2020 – 2021 T32 CA126607 (Lei Zheng), Research in Surgical Oncology, Johns Hopkins University
2019 – Present Member, Society of American Gastrointestinal and Endoscopic Surgeons (SAGES)
2019 – 2021 Fellow, Complex General Surgical Oncology, Johns Hopkins University, Baltimore, MD
2013 – 2016 Graduate Student, University of Florida, Gainesville, FL
2013 – 2015 T32 CA106493 (Kevin Behrns), Research in Surgical Oncology, University of Florida
2011 – 2019 Resident, General Surgery, University of Florida, Gainesville, FL
2014 – Present Member, American Association for Cancer Research
2014 – Present Member, American Association of Immunologists

Board Certification and Licensure

Surgery (American Board of Surgery; #065015), Active 9/23/2019 – Present
Complex General Surgical Oncology (American Board of Surgery; #000385), Active 02/14/2022 – Present
California Medical License (A 173758), Active 7/15/2021 – Present

Honors

2023 Outstanding Teaching Service Award, Selected by Stanford University Chief Residents.
2022 Outstanding Teaching Service Award, Selected by Stanford University Chief Residents.
2020 Charles M. Balch M.D. Endowed International Fellowship in Surgical Oncology
2019 Outstanding Teaching Resident Award in General Surgery, University of Florida
2018 Outstanding Resident Educator Award, University of Florida Society of Teaching Scholars
2018 Gold Humanism Honor Society, Elected Resident, University of Florida
2016 Council of Academic Chairs Scholarship, University of Florida
2016 Advancement to Candidacy Award, University of Florida
2015 Ardelle B. McGray Pancreatic Cancer Research Fund Award, University of Florida
2014 Research Fellowship Award, Frederick A. Collier Surgical Society, University of Michigan
2014 1st Place, Annual Copeland Resident Paper Competition, American College of Surgeons
2012 Ray Bierstedt Memorial Award for Outstanding Surgical Intern, University of Florida
2008 American Society of Hematology Trainee Research

C. Contributions to Science

1. My early investigations aimed to develop an experimental model of the human pancreatic cancer microenvironment. To accomplish this, patient specimens were taken directly from the operating room and

cultured for primary pancreatic stellate cells to investigate human tumor-associated stromal biology. Additionally, tumors were implanted in immunocompromised mice to reliably establish patient-derived xenografts. We were one of the first groups to definitively demonstrate that these xenografts retained the morphology of the original tumor by recruiting murine stroma as a support network for replicating human cancer cells. From this model, we were able to directly purify and culture primary pancreatic cancer cells for further experimentation. Thus, using these models, we showed that it is entirely feasible to culture both the cancer cell and fibroblast component of human PDAC, as well as facilitate personalized experimentation in a viable patient-derived xenograft model.

- a. Han S*, **Delitto D***, Zhang D, Sorenson HL, Sarosi GA, Thomas RM, Behrns KE, Wallet SM, Trevino JG, Hughes SJ. Primary outgrowth cultures are a reliable source of human pancreatic stellate cells. *Lab Invest.* 2015;95(11):1331-40. PubMed PMID: 26322418.
*Co-first authors
- b. **Delitto D**, Pham K, Vlada AC, Sarosi GA, Thomas RM, Behrns KE, Liu C, Hughes SJ, Wallet SM, Trevino JG. Patient-Derived Xenograft Models for Pancreatic Adenocarcinoma Demonstrate Retention of Tumor Morphology through Incorporation of Murine Stromal Elements. *Am J Pathol.* 2015;185(5):1297-303. PubMed PMID: 25770474.
- c. Pham K*, **Delitto D***, Knowlton AE, Hartlage ER, Madhavan R, Gonzalo DH, Thomas RM, Behrns KE, George TJ, Hughes SJ, Wallet SM, Liu C, Trevino JG. Isolation of Pancreatic Cancer Cells from a Patient-Derived Xenograft Model Allows for Practical Expansion and Preserved Heterogeneity in Culture. *Am J Pathol.* 2016;186(6):1537-46. PubMed PMID: 27102771.
*Co-first authors
- d. **Delitto D**, Zhang D, Han S, Black BS, Knowlton AE, Vlada AC, Sarosi GA, Behrns KE, Thomas RM, Lu X, Liu C, George TJ, Hughes SJ, Wallet SM, Trevino JG. Nicotine Reduces Survival via Augmentation of Paracrine HGF-MET Signaling in the Pancreatic Cancer Microenvironment. *Clin Cancer Res.* 2016;22(7):1787-99. PubMed PMID: 26667487.

2. In addition to the contributions described above, with a team of collaborators, I leveraged these experimental models to further describe the intense muscle wasting that accompanies PDAC. Through a combination of investigations involving human rectus muscle specimens from volunteers undergoing pancreaticoduodenectomy, patient-derived xenograft models, and genetically modified mouse models, we showed that cancer cachexia could indeed be recapitulated on a molecular and phenotypic level. These initial experiments stimulated further mechanistic work that is currently the focus of multiple successful publications and grants.

- a. **Delitto D**, Judge SM, George TJ, Sarosi GA, Thomas RM, Behrns KE, Hughes SJ, Judge AR, Trevino JG. A Clinically Applicable Muscular Index Predicts Long-term Survival in Resectable Pancreatic Cancer. *Surgery.* 2017;161(4):930-938. PubMed PMID: 27932030.
- b. Go KL, **Delitto D**, Judge SM, Gerber MH, George TJ, Behrns KE, Hughes SJ, Judge AR, Trevino JG. Orthotopic Patient-Derived Pancreatic Cancer Xenografts Engraft into the Pancreatic Parenchyma, Metastasize and Induce Muscle Wasting to Recapitulate the Human Disease. *Pancreas.* 2017;46(6):813-819. PubMed PMID: 28609371.
- c. **Delitto D**, Judge SM, Delitto AE, Nosacka RL, Rocha FG, DiVita BB, Gerber MH, George TJ, Behrns KE, Hughes SJ, Wallet SM, Judge AR, Trevino JG. Human pancreatic cancer xenografts recapitulate key aspects of cancer cachexia. *Oncotarget.* 2017;8(1):1177-1189. PubMed PMID: 27901481.
- d. Nosacka RL, Delitto AE, **Delitto D**, Patel R, Judge SM, Trevino JG, Judge AR. Distinct Cachexia Profiles in Response to Human Pancreatic Tumours in Mouse Limb and Respiratory Muscle. *J Cachexia Sarcopenia Muscle.* 2020;11(3):820-837. PubMed PMID: 32039571.

3. I have also held an interest in clinical outcomes research both on the local and national level. Through a collaboration with both the department of surgery and biostatistics, we have validated the minimally invasive approach to pancreaticoduodenectomy for cancer as both viable and cost effective. In addition, we have reaffirmed on the local level the importance of standardization in surgical care for pancreatic cancer. Finally, I have delved into the national cancer data base for prognostic information involving rectal cancer. We demonstrated that the postoperative pathologic stage, as opposed to pretherapy clinical stage,

determines the ultimate prognosis in patients downstaged by neoadjuvant radiation. These data may be critical for prognostic conversations with a large proportion of patients.

- a. **Delitto D**, Luckhurst CM, Black BS, Beck JL, George TJ, Sarosi GA, Thomas RM, Trevino JG, Behrns KE, Hughes SJ. Oncologic Outcomes Following Selective Application of Laparoscopic Pancreaticoduodenectomy for Periapillary Malignancies. *J Gastrointest Surg.* 2016;20(7):1343-9. PubMed PMID 27142633.
 - b. **Delitto D**, Black BS, Cunningham HB, Sliesoraitis S, Lu X, Liu C, Sarosi GA, Thomas RM, Trevino JG, Hughes SJ, George TJ, Behrns KE. Standardization of Surgical Care in a High-Volume Center Improves Survival in Resected Pancreatic Head Cancer. *Am J Surg.* 2016;212(2):195-201. PubMed PMID: 27260793.
 - c. Gerber MH, **Delitto D**, Crippen CJ, George TJ, Behrns KE, Trevino JG, Cioffi JL, Hughes SJ. Analysis of the Cost Effectiveness of Laparoscopic Pancreatoduodenectomy. *J Gastrointest Surg.* 2017;21(9):1404-1410. PubMed PMID: 28567575.
 - d. **Delitto D**, George TJ, Loftus TJ, Qui P, Chang GJ, Allegra CJ, Hall WA, Hughes SJ, Tan SA, Shaw CM, Iqbal A. Prognostic Value of Clinical vs Pathologic Stage in Rectal Cancer Patients Receiving Neoadjuvant Therapy. *J Natl Cancer Inst.* 2018;110(5):460-466. PubMed PMID: 29165692.
4. While I do have a genuine interest in the previous investigations, **my true passion lies at the interface between fibrosis and immunity in cancer**. My doctoral degree leveraged the experimental models developed in section 1 to delineate the contribution of different fibroblast populations to local immune suppression. We demonstrated that cancer-associated fibroblasts (CAFs) are activated by ligands analogous to damage-associated molecular patterns (DAMPs) secreted by PDAC cells. These DAMPs act in a MyD88-dependent manner to stimulate a fibroblast-specific inflammatory response. However, the CAF responds to these damage-associated signals by creating a local environment of adaptive immune suppression. These actions contribute to immune escape and ultimately cancer progression. Our current aim is to suppress this fibroblast innate immune response, ultimately enhancing current immunotherapeutic modalities in pancreatic cancer.
- a. **Delitto D**, Black BS, Sorenson HL, Knowlton AE, Thomas RM, Sarosi GA, Moldawer LL, Behrns KE, Liu C, George TJ, Trevino JG, Wallet SM, Hughes SJ. The Inflammatory Milieu within the Pancreatic Cancer Microenvironment Correlates with Clinicopathologic Parameters, Chemoresistance and Survival. *BMC Cancer.* 2015;15(1):783. PubMed PMID: 26498838.
 - b. Foster DS*, Januszyk M*, **Delitto D***, Yost KE, Griffin M, Guo J, Guardino N, Delitto AE, Chinta M, Burcham AR, Nguyen AT, Bauer-Rowe KE, Titan AL, Salhotra A, Jones RE, da Silva O, Lindsay HG, Berry CE, Chen K, Henn D, Mascharak S, Talbott HE, Kim A, Nosrati F, Sivaraj D, Ransom RC, Matthews M, Khan A, Wagh D, Collier J, Gurtner GC, Wan DC, Wapnir IL, Chang HY, Norton JA, Longaker MT. Multiomic analysis reveals conservation of cancer associated fibroblast phenotypes across species and tissue of origin. *Cancer Cell.* 2022; 14;40(11):1392-1406. PubMed PMID: 36270275.
*Co-first authors
 - c. **Delitto D**, Delitto AE, DiVita BB, Pham K, Han S, Hartlage ER, Newby BN, Gerber MH, Behrns KE, Moldawer LL, Thomas RM, George TJ, Brusko TM, Mathews CE, Liu C, Trevino JG, Hughes SJ, Wallet SM. Human Pancreatic Cancer Cells Induce a MyD88-Dependent Stromal Response that Promotes a Tumor-Tolerant Immune Microenvironment. *Cancer Res.* 2017;77(3):672-683. PubMed PMID: 27864347.
 - d. **Delitto D**[#], Zabransky DJ, Chen F, Thompson ED, Zimmerman JW, Armstrong TD, Leatherman JM, Suri R, Lopez-Vidal TY, Huff AL, Lyman MR, Guinn SR, Baretti M, Kagohara LT, Ho WJ, Azad NS, Burns WR, He J, Wolfgang CL, Burkhart RA, Zheng L, Yarchoan M, Zaidi N, Jaffee EM. Implantation of a Neoantigen-Targeted Hydrogel Vaccine Prevents Recurrence of Pancreatic Adenocarcinoma after Incomplete Resection. *Oncoimmunology.* 2021;10(1):e2001159-1-11. PubMed PMID: 34777919.
[#]Corresponding author

Complete List of Published Work:

<https://pubmed.ncbi.nlm.nih.gov/?term=delitto+d&sort=date>

