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University of California, San Francisco

CURRICULUM VITAE

Name: Matthew Daniel Stachler

Position: Assistant Professor (new appointment)
Pathology
School of Medicine

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EDUCATION

1996 - 2001	The Ohio State University	BS	Chemical Engineering	
2001 - 2007	The Ohio State University	PhD	Molecular Biology	Dr. Jeffrey Bartlett
2001 - 2009	The Ohio State University	MD	Medicine	
2009 - 2013	Harvard Medical School	Clinical Fellow	Pathology	
2009 - 2011	Brigham and Women's Hospital	Resident	Pathology	
2011 - 2012	Brigham and Women's Hospital	Fellow	Molecular Genetic Pathology	
2012 - 2013	Brigham and Women's Hospital	Resident	Pathology (GI path 08/12 - 12/12, GI research 1/13-6/13)	

LICENSES, CERTIFICATION

2013	License, Massachusetts Medical Board

PRINCIPAL POSITIONS HELD

2013 - present	Harvard Medical School	Instructor	Pathology
2013 - present	Brigham and Women's Hospital	Associate Physician	Pathology

OTHER POSITIONS HELD CONCURRENTLY

2014 - 2016	BioSciences Solution Group	Molecular Pathology Consultant

2018 -	Bristol-Myers Squibb	Molecular Pathology, Biomarker, and Immune Oncology Advisory Board

HONORS AND AWARDS

1996	University Scholarship	The Ohio State University (academic achievement)
1996	College of Engineering Honors Program	The Ohio State University
1997	Nacht Scholarship	Shonac Corporation (academic achievement)
2002	Medical School year 1 honors	The Ohio State University
2002	Hendrix Medical Fellowship	The Ohio State University (academic achievement)
2003	University Fellowship	The Ohio State University (top graduate student award)
2004	Predoctoral Fellowship	American Heart Association
2005	Target Definition and Vector Design for Molecular Medicine Travel Award	Cold Spring Harbor (research abstract award)
2007	Medical Alumni Society Travel Award	The Ohio State University (research abstract award)
2007	Interprofessional Council Career Development Award	The Ohio State University College of Medicine (research award)
2007	The Edward J. Ray travel Award for Scholarship and Service	The Ohio State University College of Medicine
2008	MD/PhD Leadership and Academic Achievement Scholarship	The Ohio State University College of Medicine (Achievements in academics, leadership, and service)
2016	Loan Repayment Program Award	National Institute of Health (Awarded to highly qualified health professionals performing clinical research)
2017	Pathology of Mouse Models for human Disease Scholarship	The Jackson Laboratory
2018	Loan Repayment Program Award	National Institute of Health (Awarded to highly qualified health professionals performing clinical research)

KEYWORDS/AREAS OF INTEREST

Molecular Pathology, cancer, pre-cancer, Barrett's esophagus, esophageal cancer, gastric cancer, genomics, tumor microenvironment

CLINICAL ACTIVITIES

CLINICAL ACTIVITIES SUMMARY

Since 2013 I have served as an attending pathologist on the Molecular Pathology service at Brigham and Women's Hospital in the Center for Advanced Molecular Diagnostics. Responsibilities include the signout and interpretation of a wide variety of molecular assays including FISH, PCR, rt-PCR, single gene sequencing, and massively parallel sequencing (IE next generation sequencing). Through both my clinical and research work, I have developed particular expertise in NGS based sequencing in both the pre-analytical, sequencing, and analysis/interpretation aspects. Additionally, I have taught several courses on Molecular Pathology and have been responsible for teaching residents and fellows while on service. I also have written a text book chapter concerning these topics.

CLINICAL SERVICES

2013 - present	Molecular Genetic Pathology Attending, Center for Advanced Molecular Diagnostics, Brigham and Women's Hospital	25% effort

PROFESSIONAL ACTIVITIES

MEMBERSHIPS

2004 - 2007	American Society of Gene and Cell Therapy
2009 - 2014	College of American Pathologists
2009 - present	Massachusetts Medical Society
2010 - present	United States and Canadian Academy of Pathology
2012 - present	Association of Molecular Pathology
2013 - 2013	American Society of Investigative Pathology
2015 - present	American Association of Cancer Research

SERVICE TO PROFESSIONAL ORGANIZATIONS

2018 - 2018	Frontline Genomics (Next Generation Sequencing: Addressing Challenges around Clinical Translation)	Invited expert, Advisory Panel

SERVICE TO PROFESSIONAL PUBLICATIONS

2015 - present	Gut (Reviewer)
2015 - present	PlosOne (Reviewer)
2015 - present	Clinical Cancer Research (Reviewer)
2017 - present	American Journal of Pathology (Reviewer)

2017 - present	PLOS Genetics (Reviewer)
2017 - present	Modern Pathology (Reviewer)
2018 - present	Annuals of NY Academy of Science (Reviewer)
2018 - present	Cell (Reviewer)
2018 - present	Molecular Cancer Research (Reviewer)
2018 - present	BMC Medical Genomics (Reviewer)
2018 - present	Molecular Diagnostics (Reviewer)
2018 - present	Science (Reviewer)
2018 - present	Cellular and Molecular Gastroenterology and Hepatology (Reviewer)
2018 - present	Laboratory Investigation (Reviewer)

INVITED PRESENTATIONS - INTERNATIONAL

2017	European Congress of Pathology Annual Meeting	Invited Speaker (Podium)
2017	Department of Pathology Bern Switzerland Grand Rounds	Invited Speaker (Podium)

INVITED PRESENTATIONS - NATIONAL

2005	Cold Spring Harbor: Target Definition & Vector Design for Molecular Medicine	Selected abstract (Podium)
2007	American Society of Gene Therapy Annual Meeting	Selected Abstract (Podium)
2007	American Society of Gene Therapy Annual Meeting	Selected Abstract (Podium)
2013	American Society for Investigative Pathology	Selected Abstract (Podium)
2016	Fred Hutchinson Cancer Center, Seattle WA: Gastrointestinal Oncology Research Seminar	Invited Speaker (Podium)
2016	Bridging the Gap Between Cancer Mechanisms and Population Science Meeting	Invited Speaker (Podium)
2017	National Institute of Health, Bethesda MD: Barrett's Esophagus Translational Research Network (BETRNet)	Invited Speaker (Podium)
2018	Department of Pathology, University of Michigan Medical School, Ann Arbor MI: Resident Teaching Conference	Invited Speaker (Podium)
2018	Think Tank on Advancing Gastroesophageal Cancer Research	Invited Speaker (Podium)

INVITED PRESENTATIONS - REGIONAL AND OTHER INVITED PRESENTATIONS

2013	Brigham and Women's Hospital Department of Pathology, Joint Molecular Diagnostics Conference	Invited Speaker (Podium)
2014	BROAD Institute of MIT and Harvard Joint Cancer Program Meeting	Invited Speaker (Podium)
2014	Brigham and Women's Hospital Department of Pathology, Pathology Research Conference	Invited Speaker (Podium)
2015	Dana Farber Cancer Institute, Dana Farber Center for Cancer Genome Discovery and PROFILE meeting	Invited Speaker (Podium)
2016	Dana Farber Cancer Institute, DFCI 5th Annual symposium on the Genomic Approaches toward Precision Medicine	Invited Speaker (Podium)
2016	Mass General Hospital Department of Gastroenterology, Research Seminar	Invited Speaker (Podium)
2016	Brigham and Women's Hospital Department of Pathology, Pathology Research Celebration	Invited Speaker (Podium)
2018	Dana Farber Cancer Institute Center for Cancer Genome Discovery Conference	Invited Speaker (Podium)
2018	Mass General Hospital Department of Pathology, CID conference	Invited Speaker (Podium)
2018	BROAD Institute of MIT and Harvard Joint Cancer Program Meeting	Invited Speaker (Podium)

GOVERNMENT AND OTHER PROFESSIONAL SERVICE

2014 - 2016	BioSciences Solution Group	Consultant
2017 - 2017	Netherlands Doelmatigheids Onderzoek (ZonMW)	Invited Grant Reviewer
2018 - 2018	The Health Research Board, Ireland	Invited Grant Reviewer
2018 - present	Bristol-Myers Squibb, Molecular Pathology, Biomarker, and Immune Oncology	Advisory Board

UNIVERSITY AND PUBLIC SERVICE

SERVICE ACTIVITIES SUMMARY

My service while an early faculty member (Instructor) at Brigham and Women's hospital has primarily focused on teaching and clinical work. As someone in a mentored research position, my primary responsibility was toward developing my research career and on clinical service. Other service activities were held to a minimum to protect research time. As a new faculty member, I anticipate multiple new opportunities for University and departmental service at UCSF. For community service, my activities have focused on outreach in the Barrett's

esophagus and esophageal adenocarcinoma community where I have worked with a couple of community groups.

COMMUNITY AND PUBLIC SERVICE

2007 - 2009	Ohio State Science Fair Competition	Judge
2016 - present	Esophageal Cancer Awareness Association	Member
2017 - present	Esophageal Cancer Action Network	Member

TEACHING AND MENTORING

TEACHING SUMMARY

I feel that teaching has to be a priority when working at an academic institution. To this end, I have tried to be involved in teaching of both medical and graduate students, residents, and fellows during my residency and through my Instructor appointment at Harvard Medical School (HMS). I have been actively involved in teaching both major HMS Pathology courses and have given Molecular Pathology lectures in several graduate school courses at HMS. In addition, I have had the opportunity to work with several more junior trainees in our Department in both a clinical and research setting.

FORMAL TEACHING

	Academic Yr	Course No. & Title	Teaching Contribution	School	Class Size
	2005 - 2005	Ohio State University College of Medicine, Integrated Biomedical Sciences Graduate Program 805, Research Techniques and Resources	2x 3hr sessions per week for 12 weeks	Grad	
	2010 - 2016	Harvard-MIT, HMS Health Sciences and Technology 030, Human Pathology	Variable, up to 15 x 2 hr sessions per semester		
	2012 - 2012	HMS, Immunology, Microbiology, and Pathology (IMP) 754.0	Approximately 6 x 2 hr sessions	Medicine	
	2012 - 2012	Brigham and Women's Hospital, Dept of Pathology resident lecture series	1 hr lecture	Medicine	

	Academic Yr	Course No. & Title	Teaching Contribution	School	Class Size
	2015 - 2018	HMS, The Epidemiology and Molecular Pathology of Cancer	1hr Lecture		
	2015 - 2017	HMS, HBMT 200 lab	1.5hr lab/lecture	Medicine	
	2016 - 2018	Brigham and Women's Hospital, Dept of Pathology resident lecture series	1 hr lecture	Medicine	
	2016 - 2016	HMS, Foundations in Pathology	1.5hr lecture, 1.5hr lab		
	2017 - 2018	Harvard School of Public Health, Health Data Science (BST) 238	2 hr lecure	Grad	

INFORMAL TEACHING

2005 - 2006 Brigham and Women's Hospital Center for Advanced Molecular Diagnostics resident teaching as fellow. Daily review and signout of cases.

2013 - 2018 Brigham and Women's Hospital Center for Advanced Molecular Diagnostics resident and fellow teaching as attending. Daily review and signout of cases, instruction in molecular pathology. 8 weeks of service per year.

MENTORING SUMMARY

As a junior faculty member, most mentoring opportunities have occurred in a research setting. This has included one laboratory technician (not listed below since he was not a student at the time) who I worked closely with that is now in medical school as well as several other residents, post-docs, and visiting researchers. Often the person I am working with has considerable background in one aspect of our research, but I will work with them to develop the needed expertise in the the other different aspects. For example, Dr. Bao is a computational biologist with a strong understanding of programming and statistics. However, when he joined the lab he lacked some of the biological understanding needed to determine the most appropriate studies. I have worked with him to develop this knowledge base by having small teaching sessions based on questions being asked in our studies. On the other end of the spectrum, Dr. Simmons and Akarca both have considerable clinical experience in Pathology and I have worked with them to further develop the research skills as well as on how to navigate being a junior pathologist interested in research. Both have had abstracts accepted to major academic conferences.

PREDOCTORAL STUDENTS SUPERVISED OR MENTORED

Dates	Name	Program or School	Mentor Type	Role	Current Position

Dates	Name	Program or School	Mentor Type	Role	Current Position
2005 - 2006			Project Mentor	Mentored undergraduate student research project	

POSTDOCTORAL FELLOWS AND RESIDENTS MENTORED

Dates	Name	Fellow	Mentor Role	Faculty Role	Current Position
2015 - 2016	Damian Simmons	Pathology Resident	Project Mentor	First authored abstract and platform presentation	Instructor, HMS
2017 - 2018	Chunyang Bao	Computational Biology fellow	Project Mentor,Co-Mentor/Clinical Mentor	Ad hoc mentoring and supervision	ongoing postdoc

VISITING FACULTY MENTORED

2018 - 2019 Fahire Goknur Akarca, MD Gazi University, Turkey

RESEARCH AND CREATIVE ACTIVITIES

RESEARCH AND CREATIVE ACTIVITIES SUMMARY

To date, my work has focused on the genomic drivers of pre-neoplastic progression, specifically on Barrett's esophagus and developing the model systems and resources to expand the studies beyond genomic analysis. Additionally, I have focused on developing an expertise in the analysis and interpretation of massively parallel ("next-gen") based sequencing analysis that has been instrumental in both my clinical work as a Molecular Pathologist and in my research.

My initial work fundamentally changed the understanding of the genomic progression of Barrett's esophagus (Stachler, Nature Genetics, 2015). I was able to show that the majority of Barrett's esophagus progresses through acquisition of an early TP53 mutation followed by the accumulation of aneuploidy and often associated with genomic doubling. This went against the prevailing dogma of the time but has now been supported by additional studies. These results were the foundation for my K08 and Prevent Cancer Foundation grants. I was then able to expand my results and show that these alterations can be identified in surveillance biopsies years before the patient progresses to advance disease (Stachler, Gastroenterology 2018). Using the preliminary results from this study, I was able to successfully compete for the highly competitive Doris Duke Charitable Foundation Clinical Scientist Development Award. Current and future studies will continue to primarily focus on Barrett's esophagus and esophageal adenocarcinoma. Studies will be directed toward three complimentary approaches.

First, I will continue to use human samples and "omics" data to investigate several hypotheses concerning Barrett's progression. In the near term, I will be pursuing two major

projects. One focuses on understanding the drivers of the transition from dysplasia into an actual invasive phenotype as well as understanding the significant amount of genomic heterogeneity that can be seen, which I helped described as co-first author in a recent manuscript (Pectasides, Cancer Discover, 2017). My general hypothesis is that in Barrett's esophagus that progresses, an early TP53 mutation in combination with environmental influences allow for the development and tolerance of aneuploidy. This large amount of structural alterations sets the stage for the development of high level amplifications of oncogenes that are common drivers in esophageal adenocarcinoma. Another major genomics project is much more translational/clinical in nature. This project focuses on the development of genomic biomarkers (and clinical assays) for patient risk stratification in patients with non-dysplastic Barrett's esophagus. My studies will focus on using both clinical samples (FFPE biopsies) and testing that is readily suited for clinical translation.

The second area of study will focus on understanding how the microenvironment interacts with the molecular alterations in Barrett's esophagus and how this influences progression. We know that Barrett's esophagus develops in the setting of gastric and biliary reflux, which induces a robust inflammatory response. It is thought that this chronic cycle of cellular damage and inflammation is what drives the initial transformation of the normally squamous distal esophagus to a columnar lining. However, it is unknown if the immune reaction is different in people who progress to advanced disease or how alterations in the epithelial Barrett's cells may interact with this environment.

The third major focus of my research is to build both in vitro and in vivo model systems that can be used to functionally validate molecular findings and to better help understand other (immune) interactions involved in the progression process. In vitro modeling focuses on using primary human Barrett's epithelial cells grown in organoid and organotypic conditions. These cells can be easily genetically manipulated and passaged, allowing us to test the functional impacts of different mutations or other genomic alterations. In addition, it is our longer-term goal to co-culture the epithelial cells with different immune and stromal cells that make up the Barrett's microenvironment. This will allow us to directly test how specific cell to cell interactions influence progression. In vivo modeling focuses on using an inflammatory mouse model of Barrett's esophagus originally developed in Dr. Timothy Wang's laboratory at Columbia University. We have brought this model system into the lab and have begun adding additional genomic alterations to the cells thought to be responsible for the columnar metaplasia seen in the model system. I will use these model systems to explore how genomic alterations influence the development of aneuploidy, dysplasia, and invasive cancer. Additional environmental insults (such as a mimic of reflux) have also been added to the systems to determine how this interacts with different genomic events. Future studies will begin to manipulate the related microenvironment to test how non-neoplastic cells influence progression.

RESEARCH AWARDS - CURRENT

1. K08 1K08DK109209	PI	75 % effort	Stachler (PI)
NIDDK		04/01/2016	03/31/2021
Characterization of the Early Genomic Doubling as a Novel Path to Esophageal Adenocarcinoma		$ 146,500 direct/yr 1	$ 762,500 total

The first part of this project looks to carefully explore the molecular differences between the earliest invasive cancers (intramucosal) and the most neighboring high grade dysplasia in order to define what are the drivers that push a preneoplastic lesion into an invasive one. The second part of this study will begin to develop several model systems in order to functionally validate the identified molecular alterations and begin to analyze how these alterations interact with environmental insults.

As PI, I am responsible for the majority of the grant including performing the genomic analysis and developing the necessary model systems.

2. PI | 0 % effort | Stachler (PI)

Prevent Cancer Foundation | 01/01/2017 | 12/31/2018

Genomic features associated with cancer development in Barrett's biopsies | $ 50,000 direct/yr 1 | $ 100,000 total

Using advanced techniques in massively parallel sequencing of FFPE tissue and cutting edge computational algorithms, this grant aims to identify genomic alterations in clinical biopsies of non-dysplastic Barrett's biopsies from patient's with follow up/outcome data.

Due to the 75% effort allocated to my K08 grant and my clinical effort, I was allowed to subsume the effort for this grant into the percent effort of my K08 grant (approved by K08 program officer). As PI, I was responsible for grading and preparing samples, genomic analysis, and biological interpretation.

3. Clinical Scientist Development Award | PI | 0 % effort | Stachler (PI)

Doris Duke Charitable Foundation | 07/01/2018 | 06/30/2021

Genomic Determinants and Biomarkers of Barrett’s Esophagus Progression | $ 150,000 direct/yr 1 | $ 450,000 total

This grant proposes to use targeted massively parallel sequencing to develop genomic biomarkers for risk stratification for progression in patients with non-dysplastic Barrett’s esophagus. It is the goal to use these findings to develop a molecular assay to help with predicting risk of progression in patients with Barrett's esophagus.

Due to the 75% effort allocated to my K08 grant and my clinical effort, I was allowed to subsume the effort for this grant into the percent effort of my K08 grant (approved by K08 program officer). As PI, I was responsible for selecting, reviewing, and preparing samples, genomic analysis, and biological interpretation.

RESEARCH AWARDS - PAST

1. BRI Microgrant | PI | 0 % effort | Stachler (PI)

Brigham and Women's Hospital Biomedical Research Institute | 01/01/2013 | 12/31/2013

Molecular Characterization of the Barrett’s esophagus cell line CP-B | $ 1,000 direct/yr 1 | $ 1,000 total

The goal of this project is to perform a robust genomic characterization of a non-neoplastic cell line derived from human Barrett’s Esophagus epithelium to be used to develop a model for neoplastic progression from Barrett’s esophagus to esophageal adenocarcinoma.

Grew CP-B cell line, performed and interpreted genomic analysis

2. Career Development Award	PI	5 % effort	Stachler (PI)
Dana Farber/Harvard Cancer Center Gastrointestinal Cancer SPORE		01/01/2014	12/31/2014
Characterizing the Early Genomic Doubling as a Novel Path to Esophageal Adenocarcinoma		$ 25,000 direct/yr 1	$ 25,000 total
This grant was focused on understanding the role of genomic doubling in esophageal adenocarcinoma development.			
Performed experiments and analysis as well as interpreted results.			
3. KL2TR001100	PI	75 % effort	Stachler (PI)
KL2/Catalyst Medical Research Investigator Training (CMeRIT)		10/01/2015	09/30/2016
Early TP53 mutations and genomic doubling as a novel path for progression of Barrett's esophagus into esophageal adenocarcinoma		$ 90,000 direct/yr 1	$ 181,800 total
The goal of this proposal is to start the in depth molecular analysis of Barrett's esophagus using a recently developed fluorescent in-situ PCR assay as well as begin laser capture microdissection and sequencing of formalin fixed, paraffin embedded esophagectomy samples.			
This grant was award, but was terminated early due to receiving a K08 grant.			

PEER REVIEWED PUBLICATIONS

1. Stachler MD, Bartlett JS. Mosaic vectors comprised of modified AAV1 capsid proteins for efficient vector purification and targeting to vascular endothelial cells. Gene Ther. 2006; 13(11): 926-31.
2. Arnold GS, Sasser AK, Stachler MD, Bartlett JS. Metabolic biotinylation provides a unique platform for the purification and targeting of multiple AAV vector serotypes. Mol Ther. 2006; 14(1): 97-106.
3. Stachler MD, Chen I, Ting AY, and Bartlett JS Site specific modifications of AAV vector particles with biophysical probes and targeting ligands using biotin ligase. Mol Ther. 2008; 16(8): 1467-73.
4. Giardino AA, Ramaiya NH, Shinagare AB, Jagannathan JP, Stachler MD, Raut CP. Case report: Calcifying fibrous tumor presenting as an asymptomatic pelvic mass. Indian J Radiol Imaging. 2011 21(4):306-8.
5. Baker, K., Rath, T., Flak, M.B., Arthur, J.C., Chen, Z., Glickman, J.N., Zlobec, .I, Karamitopoulou, E., Stachler, M.D., Odze, R.D., Lencer, W.I., Jobin, C., Blumberg, R.S. Neonatal Fc Receptor Expression in Dendritic Cells Mediates Protective Immunity against Colorectal Cancer. Immunity 2013; 39(6):1095-107.
6. Kanarek, N., Grivennikov, S., Leshets, M., Lasry, A., Alkalay, I., Horwitz, E., Shaul, Y.D., Stachler, M., Elena Voronov, E., Apte, R.N., Pagano, M., Pikarsky, E., Karin, M., Ghosh, S., and Ben-Neriah, Y. A critical role for IL-1β in DNA damage-induced mucositis. PNAS 2013; 111(6):702-11.
7. Hong, Y.S., Kim, J., Fox, C., Ma, Q., Wong, G.S., Pectasides, E., Peng, S., Stachler, M.D., Thorner, A.R., Van Hummelen, P., Bass., A.J. Src mutation induces acquired lapatinib

resistance in ERBB2-amplified human gastroesophageal adenocarcinoma models. PLOS One 2014; 9(10): e109440.

8. Stachler M, Jia Y, Sharaf N, Wade J, Longtine J, Garcia E, Sholl LM. Filter Paper-based Nucleic Acid Storage in High-throughput Solid Tumor Genotyping. AIMM 2015 23(5): 389-96.

9. Baden, L. R., Liu, J., Li, H., Johnson, J. A., Walsh, S. R., Kleinjan, J. A., Engelso, B. A., Peter, L., Abbink, P., Milner Jr, D. A., Golden, K. L., Viani, K. I., Stachler, M. D., Chen, B. J., Pau, M. G., Weijten, M., Carey, B. R., Miller, C. A., Swann, E. M., Wolff, M., Loblein, H., Seaman, M. S., Dolin, R., Barouch, D. H. Induction of HIV-1- specific mucosal immune responses following intramuscular recombinant adenovirus serotype 26 HIV-1 vaccination of humans. J Infect Dis. 2015; 211(4):518-28.

10. Stachler, M.D., Rinehart, E., Lindeman, N., Odze, N., Srivastava, A. "Novel Molecular Insights from Routine Genotyping of Colorectal Carcinomas. Hum Pathol. 2015; 46(4): 507-13.

11. Stachler, MD.**#**, Taylor-Weiner, A.**#**, Peng, S., McKenna, A., Leshchiner, I., Stewart, C., Stojanov, P.,Chauvin, S., Lawrence, M.S., Ferrer-Torres, D., Lin, J., Chang, A.C., Gabriel, S.B., Lander, E.S., Beer, D.G., Carter*, S.L., Getz*, G., Bass*, A.J. Paired Exome Analysis of Barrett's Esophagus and Adenocarcinoma Reveals Distinct Paths to Cancer. Nature Genetics. 2015 Sep;47(9):1047-55.

12. Derks S, Nason KS, Liao X, Stachler MD, Liu KX, Liu JB, Sicinska E, Goldberg MS, Freeman GJ, Rodig SJ, Davison JM, Bass AJ. Epithelial PD-L2 expression marks Barrett's esophagus and Esophageal Adenocarcinoma. Cancer Immunol Res. 2015 Oct;3(10):1123-9.

13. Stachler, M.D., Rinehart, E., Garcia, E., Lindeman, N. PIK3CA Mutations Are Common In Many Tumor Types And Are Often Associated With Other Driver Mutations. AIMM 2016 May-Jun;24(5):313-9.

14. Zhou J, Wu Z, Wong G, Pectasides E, Nagaraja A, Stachler M, Zhang H, Chen T, Zhang H, Liu JB, Xu X, Sicinska E, Sanchez-Vega F, Rustgi AK, Diehl JA, Wong KK, Bass AJ. CDK4/6 or MAPK blockade enhances efficacy of EGFR inhibition in oesophageal squamous cell carcinoma. Nat Commun. 2017 8:13897.

15. Pectasides E**#**, Stachler MD**#**, Derks S**#**, Liu Y**#**, Maron S**#**, Islam M, Alpert L, Kwak H, Kindler H, Polite B, Sharma MR, Allen K, O'Day E, Lomnicki S, Maranto M, Kanteti R, Fitzpatrick C, Weber C, Setia N, Xiao SY, Hart J, Nagy R, Kim KM, Choi MG, Min BH, Nason KS, O'Keefe L, Watanabe M, Baba H, Lanman R, Agoston AT, Oh DJ, Dunford A, Thorner AR, Ducar MD, Wollison BM, Coleman HA, Ji Y, Posner MC, Roggin KK, Turaga K, Chang P, Hogarth K, Siddiqui U, Gelrud A, Ha G, Freeman SS, Rhoades J, Reed S, Gydush G, Rotem D, Davison J, Imamura Y, Adalsteinsson V, Lee J, Bass AJ, Catenacci DV. Genomic Heterogeneity as a Barrier to Precision Medicine in Gastroesophageal Adenocarcinoma. Cancer Discov. 2018 8(1):37-48.

16. Johncilla M, Stachler M, Misdraji J, Lisovsky M, Yozu M, Lindeman N, Lauwers GY, Odze RD, Srivastava A. Mutational landscape of goblet cell carcinoids and adenocarcinoma ex goblet cell carcinoids of the appendix is distinct from typical carcinoids and colorectal adenocarcinomas. Mod Pathol. 2018 31(6):989-996.

17. Stachler MD#, Camarda ND#, Deitrick C, Kim A, Agoston AT, Odze RD, Hornick JL, Nag A, Thorner AR, Ducar M, Noffsinger A, Lash RH, Redston M, Carter SL*, Davison JM*,

Bass AJ*. Detection of Somatic Mutations in Barrett's Esophagus Prior to Progression to High-grade Dysplasia or Adenocarcinoma. Gastroenterology. 2018 155(1):156-67.

18. Yu M**#**, Maden S**#**, Stachler MD**#**, Kaz AM, Guo Y, Carter KT, Heinzerling TJ, O'Leary RM, Xu X, Bass A, Chak A, Willis JE, Markowitz SD, Grady WM. Subtypes of Barrett's esophagus and esophageal Adenocarcinoma based on genome-wide methylation analysis. GUT. 2018 (In Press)
19. Soong RT , Nayor J, Stachler M, Perencevich M, Jajoo K, Saltzman J, Lindeman NI, Srivastava A. Clinicopathologic and Genetic Characteristics of Interval Colorectal Carcinomas favor origin from missed or incompletely excised precursors. Mod Pathol 2018 (In Press).
20. Qureshi AP, Stachler MD, Haque O, Odze RD. Biomarkers for Barrett's esophagus - a contemporary review. Expert Rev Mol Diagn. 2018 Nov;18(11):939-946.

REVIEW ARTICLES

1. Kaz AM, Grady WM, Stachler MD, Bass AJ. Genetic and epigenetic alterations in Barrett's esophagus and esophageal adenocarcinoma. Gastroenterol Clin N Am. 2015 22(2): 473-489.

BOOKS AND CHAPTERS

1. Stachler M. "Basic Techniques in... Molecular Genetic Pathology." In Massimo Loda, Lorelei Mucci, Mieke Van Hemelrijck, Nairi Tchrakian, and Megan Mittelstadt (eds.), Pathology and Epidemiology of Cancer: Molecular Underpinnings. Medford, MA: Springer.

OTHER PUBLICATIONS

1. Thesis:
   Stachler MD Design and Engineering of Capsid Modified AAV-Based Vectors Targeted Towards Angiogenic and Proliferating Vasculature. Degree: PhD Integrated Biomedical Science Ohio State University 2007.

SIGNIFICANT PUBLICATIONS

1. Stachler MD#, Camarda ND#, Deitrick C, Kim A, Agoston AT, Odze RD, Hornick JL, Nag A, Thorner AR, Ducar M, Noffsinger A, Lash RH, Redston M, Carter SL*, Davison JM*, Bass AJ*. Detection of Somatic Mutations in Barrett's Esophagus Prior to Progression to High-grade Dysplasia or Adenocarcinoma. Gastroenterology. 2018 155(1):156-67.

   Conceived, designed and performed all experiments, interpreted results, and was primary author of the manuscript. This study showed that important driver mutations originally thought only to be present in more advanced dysplastic lesions could in fact be identified much earlier in non-dysplastic disease in patients who would go on to progress to cancer.

2. Pectasides E**#**, Stachler MD**#**, Derks S**#**, Liu Y**#**, Maron S**#**, Islam M, Alpert L, Kwak H, Kindler H, Polite B, Sharma MR, Allen K, O'Day E, Lomnicki S, Maranto M, Kanteti R, Fitzpatrick C, Weber C, Setia N, Xiao SY, Hart J, Nagy R, Kim KM, Choi MG, Min BH, Nason KS, O'Keefe L, Watanabe M, Baba H, Lanman R, Agoston AT, Oh DJ, Dunford A, Thorner AR, Ducar MD, Wollison BM, Coleman HA, Ji Y, Posner MC, Roggin KK, Turaga K, Chang P, Hogarth K, Siddiqui U, Gelrud A, Ha G, Freeman SS, Rhoades J, Reed S, Gydush G, Rotem D, Davison J, Imamura Y, Adalsteinsson V, Lee J, Bass AJ, Catenacci DV. Genomic Heterogeneity as a Barrier to Precision Medicine in Gastroesophageal Adenocarcinoma. Cancer Discov. 2018 8(1):37-48.

   As co-first author I was responsible for the original conception of the study and for analyzing and interpreting two out of the four cohorts in the study. This study showed a significant amount of intrapatient genomic heterogeneity within paired primary and metastatic lesions, including in important driver genes commonly thought of as targets for therapy (like ERBB2/HER2). We were able to give strong evidence that current guidelines for deciding targeted therapy eligibility are inadequate and often lead to incorrect treatment decisions.

3. Stachler, MD.**#**, Taylor-Weiner, A.**#**, Peng, S., McKenna, A., Leshchiner, I., Stewart, C., Stojanov, P.,Chauvin, S., Lawrence, M.S., Ferrer-Torres, D., Lin, J., Chang, A.C., Gabriel, S.B., Lander, E.S., Beer, D.G., Carter*, S.L., Getz*, G., Bass*, A.J. Paired Exome Analysis of Barrett's Esophagus and Adenocarcinoma Reveals Distinct Paths to Cancer. Nature Genetics. 2015 Sep;47(9):1047-55.

   Conceived, designed and performed all experiments, interpreted results, and was primary author of the manuscript. This paper fundamentally changed the way we view the genomic pathway of progression in Barrett's esophagus overturning dogma that had been present in the field.

PATENTS ISSUED OR PENDING

1. Co-inventor US PATENT # 7749492
   The patent describes a novel method for engineering targeting peptides on the viral capsid surface of AAV vectors. This patent greatly broadens the usefulness of AAV vectors for gene therapy applications and allows for the specific targeting of selected tissues (Co-inventor Dr. Jeffrey Bartlett).

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