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## BIOGRAPHICAL SKETCH

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NAME: Sarah Elizabeth Streett

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eRA COMMONS USER NAME: Streett, Sarah

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POSITION TITLE: Clinical Associate Professor of Medicine-Gastroenterology and Director of IBD Education

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EDUCATION/TRAINING:

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INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Sarah Lawrence College	BA	1987	Liberal Arts
Oxford University, Wadham College		1987	
John Hopkins University School of Medicine	MD	1991	Medicine
Stanford University School of Medicine	Internship	1992	Internal Medicine
Stanford University School of Medicine	Residency	1994	Internal Medicine
Stanford University School of Medicine	Fellowship	1997	Gastroenterology

### A. Personal Statement:

As the Director of Inflammatory Bowel Disease Education at Stanford I have extensive experience in treating people with Ulcerative Colitis and Crohn's Disease, as well as teaching and research. After cultivating a large IBD practice in the Kaiser Permanente Health Care System, inspired by the resilience of my patients who contend with chronic inflammatory bowel diseases, I returned to work in an academic environment at Stanford to help develop a multidisciplinary IBD program, teach, and do clinical and translational research. These goals are driven by my desire to; optimize the quality of life for people with IBD, improve treatment strategies, and work toward finding a cure. Since I returned in 2015, we have developed a clinical program for people with IBD that incorporates IBD specialists, colorectal surgeons, PharmD's, dietitians, clinical research coordinators, and trainees. With my colleague Aida Habtezion, we established a Stanford IBD Registry biobank to which I am the largest contributor, and it has reached 600 participants and facilitated multiple investigations.

We have a growing number of investigator-initiated and industry sponsored clinical trials underway exploring new therapies and IBD pathophysiology. Ulcerative colitis and Crohn's disease fall into a spectrum of environmentally driven immune mediated diseases whose underlying etiology remains elusive. However, exciting advances in the areas of genetics, epigenetics, intestinal immunology and the microbiota in IBD development are taking place. This work has highlighted the diversity that exists across the spectrum of IBD, and lead to both an abundance of potential therapies and an appreciation of the roles that the environment and diet play. My interest lies in translating this information into actionable clinical decisions for individual patients. The current paradigm of using population data and risk stratification to guide therapy needs to evolve into a precision approach to care. Developing immunotypes within IBD, as has taken place with oncotyping in oncology, is the next step in translating underlying pathophysiology into precision medicine. To that end we have a Kenneth Rainin Foundation Synergy Award supporting an initiative using CODEX technology developed in Gary Nolan's lab to assess biomarker expression in intact intestinal tissue of IBD patients. Another approach of my investigation is in collaboration with Calvin Kuo's lab leveraging an air liquid interface organoid system to characterize the epithelial and immune components across the diversity of IBD states. I also have a grant with Michael Snyder from the Helmsley Foundation to explore the impact of environmental

exposures in people with Crohn's Disease. I am also the Principal Investigator in several industry sponsored trials for novel therapies in IBD.

Outside of Stanford, I am a member of the Crohn's and Colitis Medical Advisory Board and have a national leadership role in the American Gastroenterological Association, where I currently serve on the Government Affairs and Audit Committees and am past Chair of the Practice Management and Economics Committee. I have also done significant work in national advocacy, representing the interests of gastroenterologists and patients on Capitol Hill. Additionally, I am a special government employee for the FDA, and am now a member of the FDA Gastrointestinal Drug Advisory Committee.

The other main area of focus in my work is the intersection of fertility and pregnancy in the setting of IBD. Because the peak onset of disease is between ages fifteen and thirty, the impact of IBD on fertility and pregnancy outcomes can be profound. Data has shown that both IBD patients and health care providers frequently make uninformed decisions resulting in poor outcomes for both mother and child. The rates of preconception counseling for people with IBD are even lower than the low national average. To address this important issue, I created the Stanford IBD and Family Program in collaboration with the Johnson Center at Lucille Packard Children's Hospital to optimize pre-conception, pregnancy and post-partum care. Pregnancy represents a unique immunologic state which raises interesting potentially bidirectional interactions in the setting of autoimmune disorders. Perturbations in the human microbiome have been linked both to IBD and to adverse maternal and fetal health events such as preterm birth. Through the IBD and Family Program we have begun a study of microbial shifts during pregnancy in IBD in collaboration with David Relman and his lab.

Reproductive health in men with IBD is an equally important area where little data currently exists. In a survey of reproductive aged men in our IBD Clinic only 30% reported reproductive health counseling, and 15% had considered not having children due to having IBD. The data on IBD medication safety and male fertility is also very limited, and 70% of men surveyed desired counseling and better information to inform decision making. To address this knowledge gap, we are launching a pilot study which will prospectively study male fertility and the impact of IBD medications in collaboration with Michael Eisenberg who directs the male fertility center at Stanford.

1. Aarti K. Rao MD<sup>1,2</sup>, Thomas A. Zikos MD<sup>2</sup>, Gotzone Garay PhD<sup>2</sup>, Ko-Eun Lee MD<sup>2,3\*</sup>, Sarah E. Streett MD<sup>2</sup>. Patients Report Infrequent Counseling by Physicians and Inadequate Knowledge About Inflammatory Bowel Disease (IBD) and Reproductive Health Issues. (2020) In submission.
2. Nielsen, OH, Gubatan, J., Juhl, C.B., **Streett, S.**, Maxwell, C. Biologics for Inflammatory Bowel Disease and their Safety in Pregnancy: A Systematic Review and Meta-analysis. Clin Gastroenterol Hepatol. 2020 Sep 12:S1542-3565(20)31281-7.
3. Gubatan, J., Nielsen, OH, Levitte, S., Juhl, C.B., Maxwell, C., **Streett, S.**, Habtezion, A. Biologic Therapy During Pregnancy in Women with Inflammatory Bowel Disease and Risk of Infantile Infections: A Systematic Review and Meta-Analysis. *American Journal of Gastroenterology* (2020).
4. Gubatan, J, Barber, G., Nielsen, OH, Juhl, C.B., **Streett, S.**, Maxwell, C, Habtezion, H. Association of Disease Activity and Biologic Therapies with Reproductive Outcomes in Male Patients with Inflammatory Bowel Disease: A Systematic Review and Meta-Analysis. *Manuscript in preparation*

## **B. Positions, Scientific Appointments, and Honors**

### **Positions and Employment**

1991-1992	Internal Medicine Internship, Stanford University School of Medicine
1992-1994	Internal Medicine Residency, Stanford University School of Medicine
1994-1997	Gastroenterology Fellowship, Stanford University School of Medicine
1997-1999	Staff Physician, Tacoma Digestive Disease Center
2000-2001	Staff Physician, Palo Alto Veterans Hospital
2004-2015	Staff Physician, Kaiser Permanente Medical Center, Vallejo, CA
2015	Clinical Instructor, Stanford University
2016- Present	Clinical Associate Professor of Medicine, Director, IBD Education, Division of Gastroenterology and Hepatology, Stanford University School of Medicine

2015-2020 Clinical Director, IBD, Stanford University  
2020- Present Director IBD Education, Stanford University

### **Scientific Appointments**

2016- Special Government Employee, FDA  
2017- Member, Arthritis Advisory Committee- Adalimumab Biosimilar Review, FDA  
2019- MACRA Episode-Based Cost Measure Wave 3 Chronic Care Disease Management Subcommittee, CMS  
2020- Member, Gastrointestinal Drugs Advisory Committee, FDA

### **Honors**

2018 Crohn's and Colitis Foundation Champion of Hope Award  
2017 Fellow, American Gastroenterology Association

### **Other Experiences and Professional Memberships**

American Gastroenterology Association:

2004-2005 Member, Task Force on Women in Gastroenterology  
& 2007-2008  
2008-2012 Member, Women's Committee  
2012-2013 Member, Nominating Committee  
4/2014 Member, Strategic Planning Task Force  
2013-2015 Member, Practice Management Committee  
2014-2015 Member, Women's Leadership Council  
2015 Member, Roadmap Task Force  
2015-2018 Committee Chairperson, Practice Management and Economics  
2016-2017 Member, Leadership Council  
2015-2017 Chairperson, Obesity Workgroup Task Force  
2018-Present Member, Government Affairs Committee

9/2020 California Delegation Lead, AGA Political Advocacy Day, Washington DC  
2014, 2018, AGA Political Advocacy Day, Washington, DC  
2019  
2015, 2020 AGA Representative, Alliance of Specialty Medicine Capitol Hill Meeting

Crohn's and Colitis Medical Advisory Board:

2009-Present Crohn's and Colitis Medical Advisory Board  
2019 Regional IBD Symposia Planning Committee/Speaker

Northern California Society of Clinical Gastroenterology:

2008-2015 Past President, Computerized Finances, Attained 501C status  
Planned and funded NorCal DDW reviews & educational dinners annually  
Obtained sustaining grant from Johnson & Johnson

1986- Volunteer, ALERT Leprosy Hospital, Addis Ababa, Ethiopia

### **C. Contributions to Science**

1. My earlier work focused on the impact of obesity on digestive health and gastrointestinal disorders. As a problem of epidemic proportion worldwide, obesity plays a significant role in a multitude of digestive disorders and most gastrointestinal cancers. Furthermore, diet and its impact on the microbiome are modifiable risk factors that gastroenterologists can help patients address. I spearheaded a multidisciplinary initiative to guide evaluation and care of obese patients in the gastroenterology setting.

- a. Acosta A, Streett S, Kroh MD, Cheskin LJ, Saunders KH, Kurian M, Schofield M, Barlow SE, Aronne. L. White Paper AGA: POWER - Practice Guide on Obesity and Weight Management, Education, and Resources. Clin Gastroenterol Hepatol. 2017 May;15(5):631-649.e10.
  - b. Brill JV, Ashmore JA, Brengman ML, Buffington DE, Feldshon SD, Friedman KE, Margolis PS, Markus D, Narramore L, Rastogi A, Starpoli AA, Stropke K, White JV, Streett SE. White Paper AGA: An Episode-of-Care Framework for the Management of Obesity-Moving Toward High Value, High Quality Care: A Report From the American Gastroenterological Association Institute Obesity Episode of Care and Bundle Initiative Work Group. Clin Gastroenterol Hepatol. 2017 May;15(5):650-664.e2.
  - c. Cholankeril G, Li, A, Streett S. The Role of Gastroenterologists in the Management of Obesity. Yamada's Textbook of Gastroenterology, 2020
  - d. Streett S, Azagury D. The Genetic and Microbial Influences in Obesity. SAGES Manual of Bariatric Surgery, 2018.
2. I have a longstanding commitment to increasing diversity and inclusion in medicine both for trainees , physicians and patients. I have worked to raise awareness about the importance of diversity and to mentor women in the field of gastroenterology through leadership workshops and national committee initiatives. I am also actively involved in national advocacy to improve the care of patients with digestive diseases and increase research funds for gastrointestinal disorders.
- a. Gerson L Twomey K, Hecht G, Lee L, McQuaid K, Pizarro TT, Streett S, Yoshida C, Early D. Does Gender Affect Career Satisfaction/Advancement in Gastroenterology? Gastro 2007; 132(4): 1598-1606
  - b. Streett S. Endoscopic Colorectal Cancer Screening in Women: Can we do better? GIE 2007; 65(7): 1047-1049

**Published Work in Stanford CAP profile:** <https://med.stanford.edu/profiles/sarah-streett>

#### **D. Ongoing Research Support**

2016-Present	Stanford IBD Registry, supported by Ballinger-Swindell Endowment Role: Co-Investigator
2017-2019	Assessment of IBD and Reproductive Health Knowledge and Attitudes Role: Principal Investigator
2018-2021	Rainin Synergy Award, Rainin Foundation Precision medicine to enable personalized therapy in IBD via biomarker analysis using novel cytometric and imaging technologies Role: Principal Investigator
2019-2021	Helmsley Foundation Award Investigating the Exosome in IBD Role: Co-Investigator
2017-2018	Atlantic Pharmaceuticals Atlantic Pouchitis Study Role: Principal Investigator

2020-2021

Pfizer

A Phase 2a, Double-Blind, Randomized, Placebo-Controlled, Parallel Group Study Evaluate The Efficacy And Safety Of Oral Pf-06651600 And Pf-06700841 As Induction And Open Label Extension Treatment In Subjects With Moderate To Severe Crohn's Disease  
Role: Principal Investigator

2020-2022

Tigenix, Takeda Pharmaceuticals

ADMIRE Phase III Trial Of Stem Cell Therapy For Refractory Crohn's Perianal Fistula  
Role: Principal Investigator