



DDS Profile: Sonia Friedman, MD

Sonia Friedman¹

Published online: 6 August 2019

© Springer Science+Business Media, LLC, part of Springer Nature 2019

I was born in Santa Barbara, California, and grew up in a middle-class neighborhood in Lawrenceville, New Jersey, where I attended public high school. My father, Max Friedman, is a chemical engineer and was always enthusiastic about teaching me science. My mother, Ellen Friedman, is the daughter of Holocaust survivors and has taught Holocaust studies and women's studies at the College of New Jersey for the past 40 years. Her book entitled "The Seven, a Family Holocaust Story" [1] is the story of our family. My mother pushed me to excel academically in high school. She saw that as a way to compensate for not being able to give me the advantages that an American-born parent could provide. My grandparents struggled for financial solvency and to assimilate after immigration to the USA. Also, my mother was a feminist and understood the importance of a woman being financially independent. She arrived in the USA at the age of 5, with parents who still spoke broken English at the time of their deaths, received a Ph.D. from New York University, and became a prominent professor and scholar. Of course, her first-born daughter could do even better! She had dreams of my becoming a neurosurgeon, as well as a concert violinist. I travelled to New York City every week to take violin lessons with Lewis Kaplan, a Julliard instructor, and was a concertmaster of my regional youth symphony. Although I had received most of my college acceptances, I had yet to hear from Stanford University, where I wanted to go, so I waited for the postman day after day. My mother was also tired of waiting and convinced my father to call Stanford to ask for the decision. I was probably the only applicant who received her acceptance by phone and not mail. It was 1984, years before the Internet.

Stanford University was a magical place, to which I arrived sight unseen. My freshman English class was an incredible course on William Carlos Williams, the poet and

physician, taught by the writer Gilbert Sorrentino—a course my mother, naturally, had recommended. It was after this course that I decided to become a doctor (and poet). I was extremely fortunate to do research at Stanford in developmental neurobiology with the master scientist Dr. Carla Jo Shatz. She is a brilliant woman who mentored me in the science of visual system development. I worked in her laboratory for 4 years and learned multiple techniques, including electron microscopy. As a college student, I gave a major talk at the main national neuroscience meeting and was the first author on a publication regarding the role of glial cells in optic nerve development [2]. In addition to Dr. Shatz, there were many other instrumental people and experiences at Stanford to inspire me to do scientific research. I met Kelly Eugene Wahl, a wonderful friend and freshman dormmate, who would collaborate with me decades later on research regarding inflammatory bowel disease (IBD) and self-efficacy. I saw a demonstration of the first scanning tunneling microscope (to visualize individual atoms) in the USA. I met Sally Ride, the first American woman to go to space, and I took pictures of Saturn in one all-night session for my astronomy class at the Stanford observatory. I enjoyed doing research in neuroscience with Dr. Shatz during my gap year but eventually decided that people's stories interested me more than microscopes (this was before the era of molecular biology), so I went for a straight MD (without the Ph.D.).

After medical school at Yale, I moved on to a fabulous medicine residency at the Hospital of the University of Pennsylvania. I treated wards of AIDS patients with rare and terrible illnesses such as varicella meningitis, CMV retinitis, and Kaposi sarcoma. I wrote poems about death and love, eventually winning one of the Hippocrates Prizes for Poetry and Medicine in the 2011 International Poetry Competition. My poem "Ms. Alito," composed as a second-year resident, was published in the Hippocrates Prize Anthology [3]. It was at Penn that my fascination with IBD began. It was before the era of biologic therapy, and patients with Crohn's disease and ulcerative colitis had only four options for treatment—prednisone, 6-mercaptopurine, sulfasalazine/Asacol,

✉ Sonia Friedman
sfriedman1@partners.org

¹ Division of Gastroenterology, Hepatology and Endoscopy, Brigham and Women's Hospital, 75 Francis Street, Boston, MA 02115, USA

or surgery. IBD patients were young, and I was eager to help them. I followed IBD patients who suffered the terrible side effects of prednisone and had complicated surgery. I hoped that all of the research advances in immunology would translate into new clinical therapies. I met my future husband, Dr. Jerry Weinhouse, a pulmonary and critical care fellow at Penn, on March 18, 1995. I had to submit my GI fellowship rank list 3 months later. Jerry had already taken a job at Mount Sinai in New York City as a pulmonary attending. I ranked Sinai first because it was a clear leader in the field of IBD and also because the love of my life would be there. My match to the single GI fellowship spot at Sinai spectacularly sealed my personal and professional fate.

Mount Sinai was a gastroenterology powerhouse and was home to some of the great clinicians and innovators in IBD. As a fellow, I worked with Dr. Henry Janowitz and saw patients in his office while I sat at Burrill Crohn's massive oak desk. I did clinical research with Dr. Daniel Present for 3 years. He taught me how to give an entertaining, yet scholarly, talk, write an effective abstract, and, most importantly, write a meaningful research paper. I was honored to pore over his thousands of paper charts lining the shelves in his offices in order to publish new research on cancer in Crohn's colitis and treatment of pyoderma gangrenosum with intravenous cyclosporine [4, 5]. It was my husband Jerry who convinced me to return to Dr. Present's office 7 years later to gather data for a follow-up to our study in *Gastroenterology* on Crohn's colitis in patients who underwent colonoscopic surveillance [6]. Dr. Jerry Waye, the king of colonoscopy, taught me how to scope, and Dr. David Sachar, who did many of the groundbreaking clinical IBD studies, taught me how to think critically, read barium studies, and, most importantly, take excellent care of my patients. The GI fellowship was difficult—I took call every other night for a year and half—yet I am so grateful to have had what is certainly an unparalleled learning experience. The greatest honor of my career was to return to Mount Sinai Hospital 20 years after the end of my fellowship to give the prestigious Oppenheimer-Ginsburg lecture to many of the same attendings who had taught me IBD.

Brigham and Women's Hospital has a much different culture than Mount Sinai. I had to learn to be quietly assertive, a change from the more aggressive model for success during my training. Although private practice was the norm at the Sinai I graduated from in 1999, academic medicine is the emphasis at the Brigham. Naturally, there were difficulties in performing meaningful clinical research while doing an 80% clinical job, while I had two young children and a similarly early career physician-husband. Yes, Jerry and I were fortunate once again to obtain academic jobs at the same institution, although the process this time was much more painful, since Jerry left a job he loved at Sinai so I could pursue my dream of doing IBD at a Harvard hospital. Thankfully, Sinai

had trained me very well, and I had covered Dr. Present's practice on weekends for 3 years and was ready for the new challenges.

I was briefly a celebrity in February 2004, when I was photographed for the cover of *Boston Magazine*, along with Dr. Lara Kelly, a dermatologist, and Dr. Michael Malone, an urologist, as part of a feature on the most promising young specialists in the Boston area. I stated my areas of specialty only as Crohn's disease and ulcerative colitis, and my IBD practice blossomed. With my Harvard Medical School appointment and my rapidly growing clinical practice, I was able to obtain substantial funding from Procter and Gamble, the former manufacturers of Asacol, to do a Boston-wide project on IBD patients' attitudes regarding colon cancer surveillance. My friend Kelly Wahl from Stanford, a self-taught statistical wizard, was now the Director of Statistical Analysis at UCLA's Division of Undergraduate Education and helped me create and validate surveys measuring self-efficacy, doctors' messages, and patients' fears and worries regarding colon cancer. We published three papers in *Inflammatory Bowel Diseases* [7–9], and I was promoted to Associate Professor.

It was my husband who recognized that I needed to change my research focus to an area of greater need and one that reflected my patients' concerns. While colon cancer was a more traditional research topic (Blackstone published the first paper on dysplasia-associated lesions or masses (DALMs)—in 1981 [10]), I was becoming more interested in fertility and pregnancy. Many of my IBD patients were young and concerned about the safety of drugs and disease activity during pregnancy. There was a revolution in IBD treatment, and infliximab was healing many patients with severe Crohn's disease and ulcerative colitis.

I was asked to write an editorial for an important paper by Dr. Bente Mertz Nørgård, the Chief of Clinical Epidemiology at Odense University in Denmark, in the *American Journal of Gastroenterology*, on the safety of azathioprine and 6-mercaptopurine during pregnancy [11]. I was fascinated with Dr. Nørgård's work because she had published the majority of papers thus far on IBD medication safety during pregnancy, so I worked diligently to write an accurate and insightful review that reflected the respect I had for her research [12]. She e-mailed me shortly after publication to thank me for my review and to tell me that she appreciated how well I understood her study. The Danish national registry, on which she has based most of her studies, is an amazing medical database of all citizens in Denmark, but I understood that there was no opportunity for individual record review.

Dr. Nørgård is now one of my closest friends and my primary collaborator. During her first visit to Boston, we wrote a Senior Crohn's and Colitis Foundation Research Award that was funded on the first submission. Dr. Nørgård

is a marvelous epidemiologist, clear writer (with perfect English even though her native language is Danish), and consistently creative thinker. She has high expectations of me without being overtly demanding, and our collaboration has pushed us both to increased productivity and creativity. I have learned to think more critically about relevant research questions and to work hard to elucidate the sometimes complicated and detailed background to our hypotheses. Whereas I can provide a foundation for what is clinically relevant, Dr. Nørgård understands what is statistically realistic. We have published many papers I am proud of, including the first population-based studies of the efficacy of assisted reproductive technology in women with IBD as well as the safety of IBD medications in men during the period prior to conception [13–17]. I love doing research and sharing a wonderful friendship with Dr. Nørgård, and our conversations always open doors to new ideas. We are currently investigating men's reproductive health in IBD, which is an understudied topic.

With the advent of the electronic medical record, in particular Epic (because of which I spend twice as much time each day on the computer than I do with patients), I sometimes forget the amazing people who saw something special in me and pushed me to achieve. I want to thank the many wonderful mentors, colleagues, friends, and family I have had the pleasure of being close to over these many years and especially the ones mentioned above—Carla Shatz, Kelly Wahl, Jerry Weinhouse, and Bente Nørgård. Most importantly, I want to thank my mom, Ellen Friedman, for always knowing I would succeed.

References

1. Friedman EG. *The Seven: A Family Holocaust Story*. Detroit: Wayne State University Press; 2017.
2. Friedman S, Shatz CJ. The effects of intracranial infusion of tetrodotoxin on naturally occurring retinal ganglion cell death and optic nerve ultrastructure. *Eur J Neurosci*. 1990;2:243–250.
3. Friedman S. “Ms. Alito.” Commended entry (Top 40 of 1,500 international entries). Hippocrates Prize for Poetry and Medicine, 2011 International Poetry Competition. Hippocrates Prize Anthology, 2011: page 54.
4. Friedman S, Rubin PH, Bodian C, Goldstein E, Harpaz N, Present DH. Screening and surveillance colonoscopy in chronic Crohn's colitis. *Gastroenterology*. 2001;120:820–826.
5. Friedman S, Marion J, Present DH. Intravenous cyclosporine in refractory pyoderma gangrenosum complicating inflammatory bowel disease. *Inflamm Bowel Dis*. 2001;7:1–7.
6. Friedman S, Rubin PH, Bodian C, Harpaz N, Present DH. Screening and surveillance colonoscopy in chronic Crohn's colitis: results of a surveillance program spanning 25 years. *Clin Gastroenterol Hepatol*. 2008;6:993–998.
7. Friedman S, Cheifetz A, Farraye F, et al. Doctor message can alter patients' behavior and attitudes regarding inflammatory bowel disease and colon cancer. *Inflamm Bowel Dis*. 2012;18:1531–1539.
8. Friedman S, Cheifetz A, Farraye F, et al. Factors that affect adherence to surveillance colonoscopy in patients with inflammatory bowel disease. *Inflamm Bowel Dis*. 2013;19:534–539.
9. Friedman S, Cheifetz A, Farraye F, et al. High self-efficacy predicts adherence to surveillance colonoscopy in inflammatory bowel disease. *Inflamm Bowel Dis*. 2014;20:1602–1610.
10. Blackstone MO, Riddell RH, Rogers BH, Levin B. Dysplasia-associated lesion or mass (DALM) detected by colonoscopy in long-standing ulcerative colitis: an indication for colectomy. *Gastroenterology*. 1981;80:366–374.
11. Nørgård BM, Pedersen L, Christensen LA, Sorensen HT. Therapeutic drug use in women with Crohn's disease and birth outcomes: a Danish nationwide cohort study. *Am J Gastroenterol*. 2007;102:1406–1413.
12. Friedman S. Medical therapy and birth outcomes in women with Crohn's disease: what should we tell our patients? *Am J Gastroenterol*. 2007;102:1414–1416.
13. Nørgård B, Larsen PV, Fedder J, DeSilva P, Larsen MD, Friedman S. Live birth and adverse birth outcomes in women with ulcerative colitis and Crohn's disease receiving assisted reproduction—a 20 year nationwide cohort study. *Gut*. 2016;65:767–776.
14. Friedman S, Larsen PV, Fedder J, Nørgård B. The reduced chance of a live birth in women with inflammatory bowel disease receiving assisted reproduction is due to a failure to achieve a clinical pregnancy. *Letter to the Editor, Gut*. 2017;66:556–558.
15. Friedman S, Larsen PV, Fedder J, Nørgård BM. The efficacy of assisted reproduction in women with inflammatory bowel disease and the impact of surgery—a nationwide cohort study. *Inflamm Bowel Dis*. 2017;23:208–217.
16. Friedman S, Larsen Magnussen B, Jølvig LR, de Silva P, Nørgård BM. Paternal use of azathioprine/6-mercaptopurine or methotrexate within 3 months before conception and long-term health outcomes in the offspring—a nationwide cohort study. *Reprod Toxicol*. 2017;73:196–200.
17. Nørgård BM, Magnussen B, Larsen MD, Friedman S. Reassuring results on birth outcomes in children fathered by men treated with azathioprine/6-mercaptopurine within 3 months before conception: a nationwide cohort study. *Gut*. 2017;66:1761–1766.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.