One of the hardest things I have to do is tell a patient “You have cancer.”

With those words, gastroenterologist Anne Marie Lennon opened her TEDx MidAtlantic Talk in early 2019. Along with two members of the United States Congress, a Pulitzer Prize-winning journalist, the U.S. surgeon general and a few dozen artists, engineers, advocates and other unique, forward-thinking voices, the Johns Hopkins University School of Medicine professor was invited to speak to a crowded theater in Washington, D.C., as part of the iconic lecture series.

“It was an honor to be invited,” Lennon says. The work she discussed was her involvement in groundbreaking research that detects with a single blood test eight common cancers — esophageal, gastric, colonic, liver, pancreatic, lung, breast and ovarian. “Our vision is to catch cancer early, when we have a chance to cure the patient,” she says. “Too often, though, we don’t know about it until it’s advanced.”

Pancreatic cancer, says Lennon, is a good example of a cancer that doesn’t become apparent until it is very advanced and nearly incurable.

“The majority of pancreatic patients present with advanced disease,” she explains. “Because their cancer has spread to other parts of their bodies, only 15% of these newly diagnosed patients are candidates for surgical resection.”

Along with scientists Bert Vogelstein, Ken Kinzler and Nick Papadopoulos, Lennon is working on a blood test that identifies DNA from tumors before they cause any symptoms. Lennon is accustomed to discussing her work at large gatherings of physicians and researchers. But her TEDx Talk began with a more personal story. While a screen behind her projected a photo of her husband and his mother, Lennon shared a story of her mother-in-law’s cancer diagnosis.

Such intimate details may seem unexpected to many clinicians and researchers. But Lennon connected her own work at Johns Hopkins with her family’s experience with cancer, sharing that both her grandmothers and all of her aunts died from the disease.

“Cancer is something that touches all of us,” she tells the crowd, pointing out that, every day, more than 4,200 Americans are diagnosed with cancer. And 1,600 people die of cancer in the U.S. every day. “How can we change this?” she asks. “Well, I’d like to share some research that our group is doing that I think is really exciting.”

She explains that, when tumor cells die, just like normal cells, they rupture and release fragments of their distinctive DNA into the bloodstream. But no test is sensitive enough to sniff out just one dangerous fragment out of 10,000 harmless ones in a drop of blood.

“Naturally, it’s much easier to find metastatic cancer than stage-I cancer,” Lennon says. “But that’s not nearly as beneficial to the patient, is it?”

She and her research colleagues decided to employ a test that combines the search for tumor DNA with cancer protein markers that are elevated in certain cancers. Using the test to search for the eight types of cancer that are responsible for 60% of cancer deaths in the United States, the team was able to detect 72% of pancreatic cancers — a far higher success rate than any test available to patients today. It found nearly 100% of ovarian and liver cancers.

“This is pretty exciting,” acknowledges the understated Lennon. “We still have work to do, but we’re definitely encouraged.”

“Our vision is to catch cancer early, when we have a chance to cure the patient.”

— ANNE MARIE LENNON
DIR ECTOR’S COLUMN

A Focus On Women Faculty

Practicing medicine and doing research at Johns Hopkins alongside many of the brightest minds in medical science is a humbling source of professional pride. And when I look around the room at our division meetings, I am often struck by the extraordinary diversity of talent from physicians of different ethnicities, genders and nations of origin — bringing depth of understanding, perspective and empathy to the science of patient care and research.

I am delighted to devote this edition of Inside Tract to just some of the profound work and experiences of our faculty members who are women; to include it all would require countless pages. The many women on our research faculty, for example, are doing groundbreaking work in the areas of inflammatory bowel diseases, diarrheal diseases, the enteric nervous system, epithelial physiology and data science.

Our field is rife with stories of physicians and researchers who failed to strike a sustainable balance between the important work we do and the lives we lead. Family, friends and outside interests too often take a back seat to the professional rigor of academic medicine.

I am a firm believer that family, no matter how we define it, makes us better physicians, researchers and leaders. The culture in our division reflects that. A fun piece of Johns Hopkins gastroenterology and hepatology trivia is that three of our physicians are related! Gastroenterologists Tsion and Maza Abdi and their cousin, hepatologist Tinsay Woreta, have all chosen to do their amazing work in this division.

Through the stories presented here — tales of discovery, mentorship and treatment breakthroughs — I trust you will be as inspired as I am daily by the extraordinary diversity of our physicians. We are related! A Focus On Women Faculty

DEVELOPING TOMORROW’S LEADERS

Mentoring Women in Medicine

Director of Clinical Research Marcia “Mimi” Canto shares insights into her role as mentor in the Division of Gastroenterology and Hepatology.

In her 23 years as a therapeutic endoscopist at Johns Hopkins, Mimi Canto has led, collaborated and published numerous studies that have advanced the field. She has presented her work around the world at the most important gastroenterology and endoscopy meetings. And as a professor of medicine and director of clinical research in the Division of Gastroenterology and Hepatology, she serves as a leader among her faculty peers.

But Canto says her role as a mentor to women faculty and physicians has brought her the greatest career satisfaction.

“I mean, I think that’s why we’re here,” Canto says. “To help bring along the next generations in our fields, right? Seeing young people grow and be independent and successful is the most rewarding than your own successes.”

Her own work in therapeutic endoscopy includes using endoscopic ultrasound in detecting early pancreatic cancer and its precursors. She leads the division’s Heartburn Center, which offers extensive testing and a minimally invasive endoscopic outpatient procedure that treats chronic acid reflux and eliminates the need for medications.

Canto says that, over the years, nearly all of her mentees have been women.

“I’m proud to have mentored both men and women,” she says. “But a lot of it has to do with how many women we hire in this division.

“I think it’s natural that young women faculty have kind of gravitated toward a mentor who’s had similar experience. Sometimes they’re thinking about starting families. This kind of work is about science and medicine, but it’s also critical to figure out a work-life balance.”

Though Canto acknowledges that the balance often tips in the direction of work, she says that’s part of life in academic medicine.

“We knew that when we got into this kind of work,” she says. “It doesn’t mean you can’t have a life too, though,” adding that she’s been happily married for 35 years.

Being director of clinical research involves “things like giving the faculty updates about clinical research grants and talking about important changes that come from the institutional review board,” she says. “But more importantly, I think Dr. Kalloo wanted me to be a mentor to clinical faculty and help them in their research in any way I can.”

Canto says that while students, fellows and residents learn about research during their training, as faculty members, they often discover there’s much more to it than science.

“I meet with them to talk about their research interests and how to focus them,” she says. “How to obtain funding, how to apply for grants, helping them understand good research principles.”

Ultimately, says Canto, she advises mentees to excel in their work.

“It’s good that a lot of our field is taking the issue of diversity more seriously than it used to,” she says, noting that several of the major annual meetings of gastroenterologists now include a diversity component. “That’s been a very long time coming.

But I tell mentees to use their work to make them equal, not their gender. You don’t want anyone to select you because you’re a ‘token woman.’ You want them to select you because you’re great at what you do.”

Mimi Canto (left) counts mentorship of women as among the most gratifying aspects of her career. From right: faculty members Amy Kim, Reezwana Chowdhury, Tsion Abdi, Ekta Gupta.
A Treatment Breakthrough for Pregnant Women with IBD

Johns Hopkins research suggests that women with IBD who discontinue infliximab early in pregnancy are more likely to flare, while continuation of the drug throughout term is not associated with poor outcomes for mothers or babies.

Physicians now have access to better data about how to treat pregnant women with inflammatory bowel disease thanks to a retrospective study by a team of Johns Hopkins gastroenterologists. Using information from the Truven Health Analytics MarketScan, gastroenterologist Brindusa Truta and her team found no difference in child outcomes if patients discontinued the commonly prescribed biologic infliximab at different points in pregnancy than if they continued treatment with the drug throughout.

Prior to this study, the largest of its kind in the U.S., little was known about how infliximab affects the fetus. Biologics such as this one cross the placenta during the second trimester, around week 20, and many patients stop taking the drug about two months before giving birth to minimize transferring it to the baby.

Based on this study, Truta says, “we no longer recommend anyone stop infliximab.” Discontinuing during pregnancy can be harmful for both the mother and the baby: If the mother experiences a flare-up, there is increased risk of miscarriage, premature delivery and low birth weight.

An abstract was published in the May 2019 issue of the journal Gastroenterology.

Truta says the American Gastroenterological Association now recommends continuing infliximab during pregnancy, a position supported by the new findings.

Using data for patients on infliximab who delivered between 2011 and 2015, the researchers divided patients into those who discontinued infliximab 90 days or more prior to delivery and those who continued closer to the delivery date or throughout the pregnancy. Researchers linked the mothers’ records with available child records to include primary outcomes such as congenital malformations, respiratory infection, developmental delay and underweight. The results showed no differences in child outcomes among the various groups. Truta says that children of women who remained on infliximab experienced no more congenital abnormalities than those children whose mothers stopped, and they met all developmental milestones.

“We want women to remain on infliximab throughout the pregnancy because their health is ultimately the biggest factor, and it influences the health of the baby.”

Brindusa Truta

The American Gastroenterological Association now recommends continuing infliximab — a chimeric monoclonal antibody biologic — during pregnancy. Image shows rendering of monoclonal antibody.
Although historically the field of therapeutic endoscopy has been male dominated, six women faculty members in the Division of Gastroenterology and Hepatology are therapeutic endoscopists. From left to right: Saowanee Ngamruengphong, Anne Marie Lennon, Kathy Bull-Henry, Eun Ji Shin, Mimi Canto and Olaya Brewer Gutierrez.

Inside Tract is one of many ways the Johns Hopkins Division of Gastroenterology and Hepatology seeks to recognize and enhance its partnership with its thousands of referring physicians. Comments, questions and thoughts on topics you would like to see covered in upcoming issues are always welcome.

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SPECIAL ISSUE
Spotlight on Women Faculty