

JOHNS HOPKINS InsideTract

NEWS FROM THE JOHNS HOPKINS
DIVISION OF GASTROENTEROLOGY AND HEPATOLOGY

SPECIAL ISSUE
Spotlight on
Women Faculty

WINTER 2020



The Quest for a Blood Test for Cancer

Anne Marie Lennon delivers TEDx Talk on groundbreaking research and the journey to detecting eight deadly cancers with a single blood test.



At a packed theater in Washington, D.C., Anne Marie Lennon shared her family's personal experience with cancer — an emotional underpinning of her and her colleagues' breakthrough diagnostic.

“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.

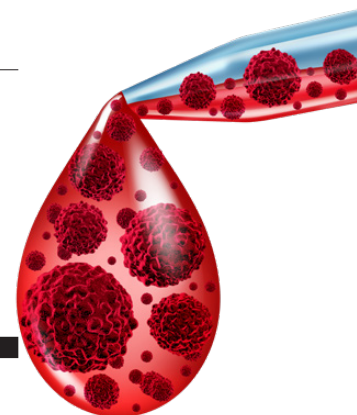
“Naturally, it’s much easier to find metastatic cancer than stage-1 cancer,” Lennon says. “But that’s not nearly as beneficial to the patient, is it?”

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





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 rigors 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 our 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 our faculty members' incredible, unrelenting work to improve the health and lives of others.

Tony Kalloo, Director
Division of Gastroenterology and Hepatology
Johns Hopkins University School of Medicine

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 so much more 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.

“SEEING YOUNG PEOPLE GROW AND BE INDEPENDENT AND SUCCESSFUL IS SO MUCH MORE REWARDING THAN YOUR OWN SUCCESSES.”

—MIMI CANTO

WOMEN IN THE JOHNS HOPKINS DIVISION OF GASTROENTEROLOGY AND HEPATOLOGY

49% of faculty members are women,
9 of whom hold key leadership positions



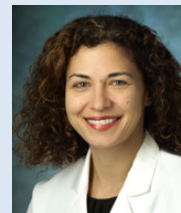
Anne Marie Lennon
Clinical Director of Gastroenterology
The Johns Hopkins Hospital



Ellen Stein
Clinical Director of Gastroenterology
Johns Hopkins Bayview Medical Center



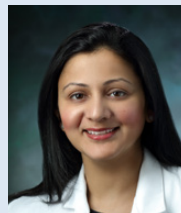
TSION ABDI
Clinical Director
Johns Hopkins Knoll North Gastroenterology and Hepatology



Aline Charabaty
Clinical Director of Gastroenterology
Sibley Memorial Hospital



Kathy Bull-Henry
Director of Endoscopy
Johns Hopkins Bayview Medical Center



Ekta Gupta
Director of Endoscopy
Johns Hopkins Knoll North Gastroenterology and Hepatology



Alyssa Parian
Director of Infusion
Johns Hopkins Bayview Medical Center



Marcia “Mimi” Canto
Director of Clinical Research
The Johns Hopkins Hospital



Tinsay Woreta
Director of Transplant Hepatology Fellowship
The Johns Hopkins Hospital



From Mentor and Mentee to Trusted Colleagues

In medical school, Tsion Abdi looked up to professor Kathy Bull-Henry. Today, they're faculty colleagues at Johns Hopkins.

As a medical student at Georgetown University, Tsion Abdi drew inspiration from many of her professors. But one in particular stood out.

"I remember watching Dr. Kathy Bull-Henry come into rounds," Abdi recalls. "She was so poised. She had a great bedside manner, always trying to connect with the patient. She always made time for med students and stimulated our minds in terms of how to handle specific situations."

When Abdi learned her former professor would join her on the gastroenterology faculty at Johns Hopkins, she says she was "beyond delighted. How often do you get the chance to work with someone you've admired for a long time?"

Years later, Bull-Henry says she remembers the student well.

"I noticed she was very bright," she recalls. "And I noticed in her a strong drive for excellence."

Bull-Henry remembers assigning the young Abdi some research to perform for a study that would be peer-reviewed. And that Abdi's work on the project was stellar.

"It was clear even then that she had a very promising career ahead."

Bull-Henry says she has always tried to approach students, residents and fellows individually to learn their interests and encourage their studies. "That way," she says, "by the time they move on to the next stage of their careers, they're prepared to be excellent gastroenterologists. It's part of why I love academic medicine."

Bull-Henry says one of the reasons she came to Johns Hopkins from Georgetown was division director Tony Kalloo.

"We have a wonderfully diverse division in gastroenterology," she says. "That doesn't happen by accident. Dr. Kalloo is committed to it."

Abdi says that, as a med student, Bull-Henry served as an important role model.

"I'd look at Dr. Bull-Henry and think, here's a woman who looks like me and is a leader in the field I'm interested in," she says. "That was very powerful."

Abdi, who specializes in treating motility disorders and serves as clinical director of the



"I'd look at Dr. Bull-Henry and think, here's a woman who looks like me and is a leader in the field I'm interested in," says Tsion Abdi (left). "That was very powerful."

Johns Hopkins Knoll North Gastroenterology and Hepatology Center in Howard County, Maryland, says she continues to look up to Bull-Henry, only now as a colleague.

"I still look at her and say, that's the type of doctor I want to be," Abdi explains. ■

RESEARCH

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.

"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



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.

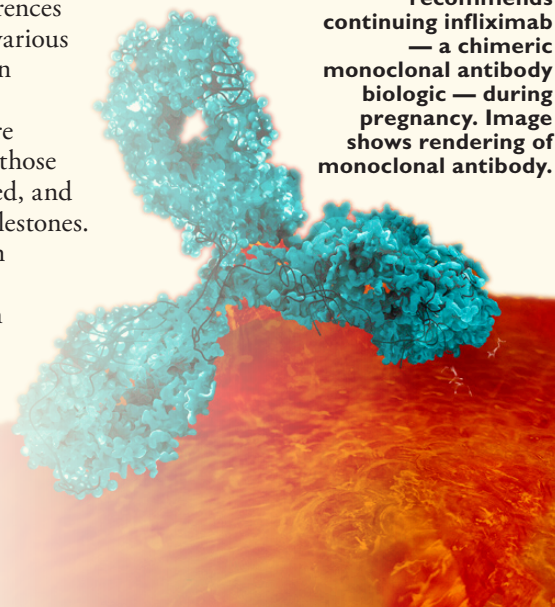
"We want women to remain on infliximab throughout the pregnancy because their health is ultimately the biggest factor, and it influences the health of the baby."

Truta says more research now needs to be done with other biologics,

which have different half-lives and are administered at different intervals.

"IBD is a disease of a century," she says, because it follows the industrialization of the society and westernized diets. "So we are investing a lot of time, money and resources to finance research. We're making progress, but we're not there yet." ■

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



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Gastroenterology Central Scheduling
410-933-7495
The only number you need to refer any patient to any Johns Hopkins GI service.

Gastroenterology and Hepatology Division Website
hopkinsmedicine.org/GI

Hopkins Access Line (HAL)
Your 24/7 connection to Johns Hopkins full-time faculty members in any subspecialty: 410-955-9444 or 800-765-5447.

Online Referral Directory
Find a Johns Hopkins physician by name, specialty and more at hopkinsmedicine.org/profiles.

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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.

This newsletter is published for the Division of Gastroenterology and Hepatology by Johns Hopkins Medicine Marketing and Communications.

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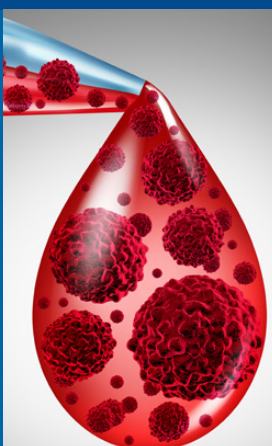
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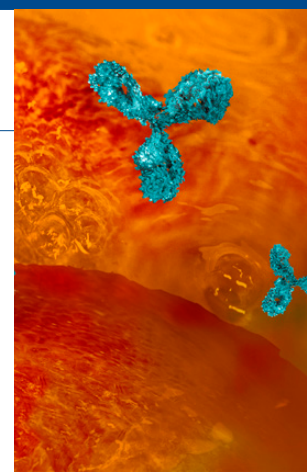
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