

Edward Chu: “The dean and the CEO realized that the cancer center world is evolving.”

Edward Chu, MD, MMS

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Chu spoke with
Paul Goldberg, editor and
publisher of The Cancer Letter.

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CONVERSATION WITH
THE CANCER LETTER

Reflections on a dual role as director at Albert Einstein Cancer Center and an executive at the Montefiore Health System

When he reported to work as director of Albert Einstein Cancer Center earlier this month, Edward Chu assumed responsibilities that are significantly broader and more comprehensive in scope than those of his predecessor, I. David Goldman.

In addition to running an NCI-designated cancer center, Chu took on a major role with the health system, becoming vice president for cancer medicine at Montefiore Medicine, which serves the Bronx, Westchester, and the lower Hudson Valley.

“Over the past few years, other NCI cancer centers around the country have been working closely with the hospital systems to bring the two worlds of clinical care and research together and to build clinical research and translational research. That’s so important for the cancer center, and I believe that this is what the leadership of the NCI Cancer Centers Program is really prioritizing,” Chu, who is also the Carol and Roger Einiger Professor of Cancer Medicine at Albert Einstein, said to *The Cancer Letter*.

“As a cancer center, Einstein has from its inception, under the leadership of Harry Eagle, been internationally known for its outstanding basic research, and over the years, has made important inroads into translational research, particularly in the development of therapeutics such as Taxol,” Chu said. “Even though there were linkages with the Montefiore Health System, it wasn’t tightly linked and aligned with the health system’s clinical care as is the case for other ma-

ior NCI academic cancer centers. And so, the cancer center never had the opportunity to achieve its full potential.

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“What is unique about Montefiore is the minority multi-ethnicity of our Bronx catchment area and the socio-economic factors of poverty, language, and co-morbidities that challenge the delivery of health care in general, and cancer care in particular, to this population. Only about 11% of the 1.5 million residents of the Bronx are non-Hispanic white, and 85% of Montefiore patients are Medicaid/Medicare. Given our unique catchment area, this offers an abundance of opportunities for disparities research at the cancer center.”

Chu is the former deputy director of the University of Pittsburgh Medical Center’s Hillman Cancer Center, co-leader of the HCC Cancer Therapeutics Program, director of the HCC Phase I Program, as well as the associate director of the University of Pittsburgh Drug Discovery Institute and chief of the division of hematology-oncology.

Chu, who has served on the Albert Einstein External Advisory Board, said he has asked Goldman, who has led the cancer center for nearly 25 years, to stay on as his senior advisor.

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“What’s very different about my coming to Einstein is that Dr. Goldman reported to the dean of the medical school, but had no direct reporting line to the senior leadership of Montefiore,” Chu said. “Today, in terms of the organizational structure, I report directly to Einstein’s dean, Gordon Tomaselli, and on the Montefiore Health System side, I report directly to Dr. Phil Ozuah, who is the president and CEO of Montefiore Medicine, the umbrella organization overseeing Montefiore and Einstein. With this new organizational structure, the center director has authority and responsibility over Montefiore and Einstein’s cancer enterprise.”

Cancer centers have become clinical engines for health systems, often covering massive catchment areas.

Notably, a similar transformation has occurred in New Jersey, where Rutgers Cancer Institute of New Jersey, where Steven K. Libutti, formerly of the Albert Einstein College of Medicine, is both director of the cancer center and senior vice president of oncology services at RWJBarnabas Health (*The Cancer Letter*, [May 17, 2019](#)). At its most recent re-designation last year, NCI acknowledged that the institution’s catchment area now covers the entire state of New Jersey, having expanded from roughly three counties.

Chu spoke with Paul Goldberg, editor and publisher of *The Cancer Letter*.

Paul Goldberg: First, congratulations on your move.

Edward Chu: Thank you. I’m sure when you’ve talked to other folks who’ve made similar moves, it is always a bit-sweet, double-edged issue.

I’ve been in Pittsburgh now for 10 years, and it’s been home for me, and I have so many good friends, colleagues, and collaborators. I especially feel a sense of responsibility for the younger fellows and the junior faculty, and even some of the senior faculty whom I’ve played a key role in recruiting to Pittsburgh.

That is the tough part of such a move, but then, obviously, leading the Albert Einstein Cancer Center is a tremendous opportunity—to work and build the cancer center there.

You’ve been there for two weeks now. How is it going?

EC: Two weeks down, and so far so good. Everyone at Einstein and Montefiore has been so friendly and helpful in supporting my transition, and with every day on campus, I am even more impressed with all of the great science, great clinical care, and tremendous community outreach and engagement that we have at our cancer center.

Every cancer center is different. What’s Albert Einstein like?

EC: You obviously know the Cancer Centers Program really well, probably as well as anyone in the country. But I don’t know if you realize that the Albert Einstein Cancer Center was one of the very first cancer centers in the country to have been given NCI designation—back in 1972.

Historically, the cancer center has been extraordinarily strong in terms of the basic laboratory science, the fundamental science, and over the years, the

scientists have made some seminal laboratory discoveries.

Over the past few years, other NCI cancer centers around the country have been working closely with the hospital systems to bring the two worlds of clinical care and research together and to build clinical research and translational research. That’s so important for the cancer center, and I believe that this is what the leadership of the NCI Cancer Centers Program is really prioritizing.

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One of the attractive features is that now, under the umbrella of the Albert Einstein Cancer Center, we have the clinical care piece from Montefiore Health System, now tightly aligned and linked with the academic side of Albert Einstein College of Medicine.

This is different from the structure of the job that your predecessor, David Goldman, had?

EC: David is remarkable, and he's been director at Einstein here for 25 years, and before that, he was cancer center director at the Medical College of Virginia Cancer Center for another 12 years.

For sure, I want to build on his success.

He has tremendous cancer center experience, but in his role as the cancer center director at Einstein, he was primarily focused on the laboratory piece, basic science, clinical research, and on the population science, with focus on cancer prevention control and community outreach and engagement.

Unfortunately, he had no direct and immediate role within the Montefiore Health System. And he did not have an opportunity to have a direct impact on the oncology service line.

I think that's what has slowed down the development of the Albert Einstein Cancer Center.

What's very different about my coming to Einstein is that Dr. Goldman reported to the dean of the medical school, but had no direct reporting line to the senior leadership of Montefiore.

Today, in terms of the organizational structure, I report directly to Einstein's dean, Gordon Tomaselli, and on the Montefiore Health System side, I report directly to Dr. Phil Ozuah, who is the president and CEO of Montefiore Medicine, the umbrella organization overseeing Montefiore and Einstein. With this new organizational structure, the center director has authority and responsibility over Montefiore and Einstein's cancer enterprise.

This is truly a transformational change that will greatly facilitate the growth of our entire cancer enterprise.

Coming from Pittsburgh, the clinical world and the research worlds are tightly aligned and integrated, and we, at the UPMC Hillman Cancer Center, receive tremendous support from the UPMC Health System.

So, at Einstein and Montefiore, one of my top priorities is to ensure that the clinical care world and the research academic world of the cancer center are joined at the hip.

David must have been a big part of recruiting you to Montefiore.

EC: I have known Dr. Goldman ever since my NCI days, back when I was at the NCI and the godfather of our laboratory back then was Dr. Bruce Chabner, and Bruce and David were really close.

We were also in the same research area, looking at folate-dependent enzymes. He was looking at the reduced folate carrier, which is the key transport protein that brought in folates and I was looking at thymidylate synthase, one of the key targets for cancer chemotherapy.

Throughout the entire process, David was extraordinarily helpful to me in terms of providing me with the insights as to what were the real needs for the cancer center.

I have served on the Einstein external advisory board for nearly 15 years. I learned a great deal while on the board, but with each visit, I realized that needed more knowledge and information to have an in-depth understanding of the ins and outs.

Did they understand that this is what they wanted to do before they came to you? Or did they come to you and you said, "I'll do it, but only under these conditions?"

EC: Both the dean and the president and CEO realized that the cancer center world is evolving and that it is really important to have the health system and the clinical care piece be closely aligned with academic research and to also have integration of elements related to education and training and community outreach and engagement.

One of the features that also attracted me is the main catchment area for Montefiore-Albert Einstein, which is the Bronx. As you may well appreciate, this is one of the most racially diverse and financially underprivileged communities in the country.

Montefiore has an incredibly strong community outreach and engagement program, but while there have been collaborative interactions with the academic side, it's not as tightly aligned as it could be.

Again, from the NCI cancer centers' perspective, their view is that the NCI-designated cancer centers need to work very closely with local community populations in their local catchment areas to try to understand what the real issues are, so that then one can focus on early detection/screening and prevention, and in so doing, they can then develop strategies to really improve the overall cancer care of patients that the cancer center is serving.

And so, again, I think now, with this new structure, we'll be able to do that much more effectively.

I'm thinking of the recent changes at Rutgers being the closest to this, where you take a cancer center and use it to run all cancer operations of a very large health system.

EC: I've always thought of Montefiore as just serving the Bronx, which it does.

But, actually, their reach has now expanded into Westchester County and the lower Hudson Valley. So, they now serve about three million-plus individuals.

What is unique about Montefiore is the minority multi-ethnicity of our Bronx catchment area and the socio-economic factors of poverty, language, and co-morbidities that challenge the delivery of health care in general, and cancer care in particular, to this population.

Only about 11% of the 1.5 million residents of the Bronx are non-Hispanic white, and 85% of Montefiore patients are Medicaid/Medicare. Given our unique catchment area, this offers an abundance of opportunities for disparities research at the cancer center.

The community we serve provides tremendous opportunities for the cancer center to learn about the cancer issues relevant to that population and identify new strategies and approaches to improve cancer care.

This could also serve as a nice model for other NCI cancer centers around the country that have to also focus on the minority and underserved populations.

What's the number of cancer patients that comes through Montefiore? What's the best way to measure that? Index cases? New cases seen?

EC: We see about 5,000 new cancer patients each year at Montefiore, and this is from a community population of nearly 1.5 million in the Bronx.

In 2019, the Einstein Cancer Center enrolled 750 patients on to interventional clinical trials, 450 of which were on to therapeutic studies. Perhaps what is most impressive is that nearly 90% of enrolled patients were from minority, underserved populations.

This percentage is likely one of the highest in the U.S.

With the COVID-19 pandemic, Montefiore-Einstein, like the other New York hospitals, health systems and cancer centers got hit pretty hard. As you know, COVID-19, in particular, impacted the minority underserved patient populations to a much greater extent.

Clinical investigators at Einstein-Montefiore published the first report—it certainly was the largest report—in this country of their experience with cancer patients who, unfortunately, became infected with COVID-19. This was reported in [Cancer Discovery](#).

One of the highlights of that manuscript was that the cancer patients who experienced COVID 19 infection had a very high case fatality rate, approaching 30%.

Obviously, it has tremendous implications for how we treat our cancer patients who are potentially at risk for COVID-19 and a community that may be

more predisposed to COVID-19 infection, such as the Bronx catchment area.

How diverse is your catchment area?

EC: It is pretty diverse. There are African Americans, Hispanic Americans, Africans, many are coming from different countries in Africa. The Hispanic population also is coming from different countries in Central and South America. There are also extremely diverse patient populations coming from Southeast Asia.

How would you approach this? What are the challenges? What are the opportunities?

EC: I think for the cancer center, the opportunity is to learn more about what are the various predisposing risk factors that these populations have that put them at increased risk for cancer.

Some of them are the same type of risk factors that we see at other cancer centers: obesity, age, diabetes, lifestyle factors. But in this kind of underprivileged population, those risk factors are heightened to a far greater extent.

We need to be working more closely with the primary care physicians, to try and improve and/or reduce all of those various risk factors, which, hopefully, then would reduce the risk of cancer. We also need to develop and implement better early detection and screening strategies.

There is a second wave of COVID now approaching. So, how do you deal with the cancer patient population who are

at risk for COVID-19 infection? As this *Cancer Discovery* paper showed, we need to evaluate those patients who are not only at risk for getting COVID-19 infection, but also facing an almost 30% risk of dying.

What the clinical folks at the cancer center and Montefiore did was to set up separate outpatient clinics as well as inpatient services for COVID-19 patients, which I think is an extraordinary effort.

Speaking of COVID, what was the impact on Montefiore?

EC: Montefiore has done a tremendous job in dealing with the COVID-19 pandemic.

I was told that at the peak, in April, Montefiore hospital had over 2,000 patients hospitalized with COVID, but technically, had only 1,400 beds.

They had to use literally every inch of space. They transformed lobbies, conference rooms, and auditoriums into COVID-19 units. There was a really nice piece, a [CBS special](#), where the CBS film crew spent an entire week filming what was going on at Montefiore.

I have to say that that piece was really moving and at the end, my wife looked at me and said, "This is where you need to go."

In truth, I had already made my decision, but that was such a powerful story that it re-affirmed my decision to go to Einstein and Montefiore.

How bad was the financial hit?

EC: I do not know the specific details, but most of the other major academic centers around the country have taken a major financial hit. I can tell you, at least from the cancer center side, they've been tremendous in terms of the institutional support and commitment.

They still view oncology and the cancer center as one of their highest priorities, moving forward.

I have heard a lot about the financial difficulties at other academic institutions, where it's been very difficult to move forward in terms of faculty recruitment and building programs.

One of the nice things for me is that we are going to be very aggressive in terms of recruitment of investigators who span the entire spectrum of cancer-focused research, from basic, clinical, translational, to population-based investigations.

Do you have a war chest, and you're spending it on recruitment?

EC: I have been working closely with many of the senior leaders of the Albert Einstein Cancer Center and reaching out and discussing potential opportunities to recruit top-notch, highly accomplished cancer-focused scientists.

How many people? Which areas?

EC: We are looking to continue to build on the strengths that are currently present at the cancer center. But we'll also examine other opportunities. In basic sciences, there are clearly opportunities to expand what folks are doing in

cancer biology, cancer signaling, and to better define the linkages between cancer and aging.

One of the historic strengths of Einstein has been in the area of cancer therapeutics and cancer drug development, which happens to be my sweet spot. This is an area that I have focused my research for my entire academic career, starting at the NCI, and then at Yale, and most recently for the past 10 years at Pittsburgh.

Einstein has had exceptional scientists to design, discover, synthesize new small molecules, new biologics, and new antibodies. One of my priorities is to recruit a cadre of clinical and translational investigators who have experience, expertise, and credibility in working with the basic and translational scientists and to bring their ideas to the clinic and to design and conduct early-phase clinical trials.

To me, that is the essence of what an NCI cancer center should be doing. This is where NCI has focused their priorities over the past five to 10 years, and I believe that Einstein is really well positioned to make a significant impact.

For me, a high priority is to recruit talented clinical and translational investigators who can develop the science and bring them in to conduct early-phase trials with incorporation of laboratory translational biomarkers that can help us to figure out what we are actually doing with these early-phase trials.

And then, because of the great catchment area, and the community that the cancer center serves, there is going to be a focus on recruiting population scientists and investigators who can help to interpret what is going on in the community and develop novel behavioral interventions and cancer control and prevention strategies.

What about diversity on the faculty? What is your philosophy on that?

EC: Gender balance, to try to ensure that there's good diversity in terms of males and females on the faculty, is important.

Additionally, having underrepresented minorities on the faculty is really important. I certainly tried to do that when I was in Pittsburgh. I believe that we all strive to do that. This is a high priority now for all academic institutions, and it is important to find the right person to fit in, in terms of scientific priorities.

Hopefully, you can match the scientific priorities with a URM candidate who fits that bill. At least at Pittsburgh, over the last 10 years, when I looked at all of the faculties that I played a key role in recruiting, we were at about 20% to 25% underrepresented minorities, which I think is quite good.

Obviously, we should strive towards doing everything that we can to excel in this area.

As I've had a chance to speak with the senior leaders and program leaders of the Albert Einstein Cancer Center, I've charged them with surveying the landscape to see if we can, in fact, recruit high-quality female faculty and minority faculty.

We tend to do better with trainees, although at times, that can also be a challenge. My understanding is the Einstein Cancer Center and Albert Einstein College of Medicine have done a good job in terms of recruitment of trainees.

Obviously, for me, recruitment of females and minority/URM faculty is a high priority.

One of the other important areas to focus on relates to succession planning, as many of the senior leaders and program leaders of the cancer center tend to be fairly senior with respect to age.

One of my priorities moving forward is to try to bring on board both into the senior leadership, program leadership and into the overall cancer center membership a group of younger faculty, who can continue to bring energy and enthusiasm to the entire cancer center.

What are the benefits of having diversity on the faculty? What can you do with a diverse faculty that you can't do when you have an all-white-male bastion?

EC: Diversity brings different perspectives and different experiences to the table.

As you know, I am Chinese by descent, my parents are from mainland China, I was born here in the U.S.—and even though Asians and Chinese are not considered minorities as what is currently defined—I think my parents' experiences and what I have experienced through them, is different than the experiences that my Caucasian friends and colleagues have had.

And I will give you a real good example of this, Paul. For many years, I was on the NCI Subcommittee A, which is fondly known as the parent committee. This is the committee that reviews NCI cancer centers either for renewal of their designation or for centers that aspire

to have the NCI designation, and I was honored to have chaired that committee for two years.

One of the real advantages of serving on that committee is that you get to work with a lot of really experienced investigators who know the NCI cancer centers world.

During this time, I got to know the patient advocates who serve on the site visit teams and also serve on the parent committee. They play a very important role in terms of the review process.

One of the most experienced patient advocates, a woman who is African American from the West Coast, had tremendous insights into what was needed to be done with respect to community outreach and engagement and how to partner up with folks who were doing that piece with population scientists.

She was asked by one of the cancer centers in San Francisco to help them with recruitment of Asians into the cancer center for outreach and engagement initiatives. She thought it was going to be a piece of cake, because she had done this for the African American population.

But she soon discovered it was really difficult. She clearly did not have the same level of credibility of working with any of the Asian populations as she had with African Americans. And in San Francisco, the Asian population is made up of Koreans, Chinese, and Japanese, which are all unique patient groups.

And so, while they're all lumped under the Asian group, they're all very different in terms of their culture and their experiences.

Once she had the appropriate team of navigators and coordinators who were of the different Asian groups, they were

then able to affect real change. So, the real advantage of diversity is that you bring your own perspective and experiences with you.

So, if it's all white, it is going to be very skewed. Obviously, it is important to be able to hear various voices and those different perspectives.

In your own research, you've done Chinese medicine.

EC: I can tell you, early on, there were a lot of naysayers—and a lot of the naysayers were my close colleagues, both on the laboratory side and on the clinical research side—because Chinese herbal medicine was viewed as kind of voodoo medicine, a black box.

Over the years, it was clear that herbal medicine works to treat a wide range of diseases, including cancer, but we didn't know how it works.

That's how I got involved, working with my close colleague, professor Yung-Chi Cheng at the Yale Cancer Center, to try to study this in a scientifically rigorous fashion, and then to conduct clinical trials in a clinically rigorous fashion, much as we develop any kind of novel molecule, whether they be small molecules or antibodies.

In this case, it was a Chinese herbal medicine that we developed in combination with chemotherapy.

The leaders at the NCI were extraordinarily supportive of our research, because they also believed in the science and the potential importance of this approach as it related to treatment of cancer patients.

But again, my Western colleagues had a very different view of this type of research. Again, perspective and experiences are important. Because of my Chinese heritage and having seen so many of our close friends and family members benefit from Chinese herbal medicine over the years, I was much more open to taking this novel approach of combining Chinese herbal medicine with chemotherapy.

You have the language as well?

EC: I can understand Chinese when people don't speak too fast, but I think that may be one thing where I, unfortunately, failed my parents.

They had tried to get me to speak and write Chinese when I was younger. I even went to Chinese Sunday school, for a couple of years and for a time I could read and write. Speaking was much better, but over time, if you don't use it enough, you lose it.

My clinical area of interest is colorectal cancer, and one of the challenges with the chemotherapy that we had at that time, which was in the early 2000s was chemotherapy-associated diarrhea.

Working with my colleague professor Tommy Cheng, we decided to identify a Chinese herbal formulation that might be able to reduce the GI side effects associated with chemotherapy.

At that time, we did not have many chemotherapy drugs to treat colon cancer, but for the three or four that were available, one of the main side effects was GI toxicity in the form of diarrhea, abdominal pain, cramps, mouth sores.

And so, professor Cheng, because he was from China originally, and can

speak and write fluently, went to the Chinese literature to look for Chinese formulas that had been used over the thousands of years to treat everyday diarrhea, presumably infectious diarrhea.

He came across this one formula that was made up of four main ingredients, and this was the herb that we decided to use for our initial studies. Our very first set of clinical studies showed that the herbal formulation, which he had selected from the Chinese literature, could, in fact, significantly reduce the GI toxicity associated with irinotecan-based chemotherapy and also improve the overall quality of life of patients who were being treated with chemotherapy.

Have you commercialized it?

EC: No. We just recently completed a randomized phase II study. And we're now trying to decide on the next move. Our goal from the start has been to develop this Chinese herbal medicine as a real drug, as opposed to a nutraceutical or nutritional supplements.

I have another COVID-19 question. As a drug developer, are you seeing a convergence of oncology, immunology, rheumatology, and infectious disease, or is it still a generation away?

EC: I think one of the positive things about the COVID-19 experience—if you can call anything positive about this entire COVID experience—is that it has brought together all these different investigators.



Because of my Chinese heritage and having seen so many of our close friends and family members benefit from Chinese herbal medicine over the years, I was much more open to taking this novel approach of combining Chinese herbal medicine with chemotherapy.



There has clearly been a convergence of cancer therapy and immunotherapy over the last five to 10 years. But also I think, what has been developed and what has been used to try to develop some novel immunotherapies, can be applied and developed for novel COVID-19 therapies, especially as it relates to developing novel antibodies and/or molecules that can attack specific parts of the COVID-19 lifecycle.

It also has created a much more collaborative environment, because this pandemic is still ongoing and it is not clear when this pandemic is going to end. There has been this urgency to develop novel therapies, and it is remarkable to see how all the various pharmaceutical companies, both big and small, are working much more closely together on these initiatives.

I was thinking of IL-6 antagonists in the treatment of the cytokine storm in COVID-19. It seems to point to some level of convergence, the first steps perhaps. Is convergence of these disciplines and therapeutic areas far away?

EC: There is still a lot that needs to be learned, for sure.

So, it's a generation away?

EC: Hopefully sooner than that.

Could we talk about the NCI AIDS Malignancy Consortium grant, which has just gone to Montefiore?

EC: This is a huge accomplishment for the cancer center. Joe Sparano [associate chair for clinical research in the Department of Oncology at Montefiore, associate director for clinical research at Albert Einstein] has now taken over as the PI of the AIDS Malignancy Consortium. It speaks to the active role of the cancer center in the local community and local catchment area, because, as it turns out, HIV is an especially relevant issue in the community, as are other viruses that are associated with cancer, such as HPV and HCV.

Is there anything we forgot to mention, anything you want to add?

EC: No, I think we touched on all of the key areas. Thanks so much for interviewing me.

Thank you for talking with me.