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cancer, marathon  
together p. 3



Irene Ghobrial, center, and Dana-Farber colleagues Antonio Sacco, left, and Aldo Roccaro, right, are studying the metastasis of multiple myeloma in mice and how to make the bones less hospitable to spreading cancer cells.

## Novel compound prevents metastasis of multiple myeloma in mouse studies

In a striking advance against the problem of cancer metastasis, Dana-Farber scientists have shown that a specially developed compound can impede multiple myeloma from spreading to the bones in mice. The findings, published in the journal *Cell Reports*, suggest the technique can also protect human patients from one of the most deadly aspects of cancer.

The research involves a new approach to the challenge of cancer metastasis, the process by which tumors colonize distant parts of the body. Whereas research has traditionally focused on cancer cells themselves, more attention is being given to the interactions between tumor cells and the tissues

around them – the microenvironment. In the current study, researchers explored why errant myeloma cells often settle in bones, and whether the bones could be made less hospitable to such malignant homesteading.

“While cure and survival rates have increased for many types of cancers in recent decades, most of these gains have been made in patients with primary cancers – cancers that have not spread beyond their initial site,” said Dana-Farber’s Irene Ghobrial, MD, the study’s senior author.

“Metastasis remains one of the most formidable complications we face as cancer researchers

*Multiple myeloma, page 4*

## Motorcyclists drive support for Dana-Farber

Like many Dana-Farber supporters, Fred Georgoulis walked 26.2 miles on Sept. 21 in the Boston Marathon® Jimmy Fund Walk presented by Hyundai. In his case, it was his second trip in recent months down this course; his last was on a classic Harley Davidson FXRS.

Georgoulis is the creator and director of the Boston Motorcycle Marathon Ride, one of the Jimmy Fund’s newest events. For the past two summers, on the second Sunday in August, he and more than 1,000 other motorcycle enthusiasts have ridden the legendary Hopkinton-to-Copley Square route of the Boston Marathon, raising money for research and patient care at Dana-Farber in the process.

“The idea came to me after I did the Boston Marathon Jimmy Fund Walk in 2012, and then did the Halloween Witch Ride [for motorcycles] in Salem a few weeks later,” says Georgoulis,

*Motorcycles, page 4*

## A local approach to stem cell transplant care

The treatment journey of stem-cell transplant patients – which leads from community doctor to urban transplant center and back to local care provider – will be smoother thanks to a program being developed at Dana-Farber/Brigham and Women’s Cancer Center (DF/BWCC).

Dubbed “Shared Care,” the program will link members of DF/BWCC’s Adult Stem Cell Transplantation team with community physicians and clinics so they can better collaborate in patients’ care. The goal is to provide a continuum of care that covers the entire transplant process, from initial medical work-up through the often years-long post-transplant period.

The program, expected to launch this fall, will serve as a model for community partnerships at other DF/BWCC treatment centers. To prepare, project participants are drafting guidelines for sharing care and coordinating services, reaching formal service-sharing agreements with community partners, educating and training partners’ medical staffs, and developing technology for exchanging data with them.

“The program will enable us to optimize patient care and ease the burden of long-distance travel for patients who live outside the Boston area,” says Robert Soiffer, MD, chief of the DF/BWCC Division of

*Stem cell, page 4*



## Seeking cancer’s finish line

Putting their best feet forward, more than 8,800 people took part in the 2014 Boston Marathon® Jimmy Fund Walk presented by Hyundai on Sept. 21. Adult and pediatric cancer patients and survivors joined more than 350 Dana-Farber employees, and their respective friends and families, along one of four routes ranging from three to 26.2 miles. The event, which each September follows the famous Boston Marathon course from its Hopkinton, Mass., start to the Copley Square finish (shown here), is projected this year to raise more than \$7.5 million for research and patient care at Dana-Farber.

“The Boston Marathon Jimmy Fund Walk presented by Hyundai provides the opportunity for the community to come together to raise critical funds for Dana-Farber,” says Zachary Blackburn, the event’s director. “We are so grateful that this year’s walkers helped us surpass \$100 million in total funds raised since 1989.” 



Esther Obeng

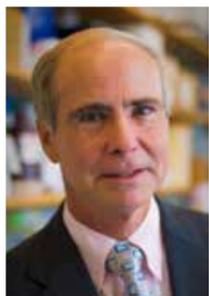
## Obeng receives American Society of Hematology fellowship

**Esther Obeng, MD, PhD**, of Dana-Farber /Boston Children's Cancer and Blood Disorders Center, has received four years of research support through an American Society of Hematology (ASH) fellowship.

The award, which totals \$420,000 in research funding, is the 2014 American Society of Hematology-Harold Amos Medical Faculty Development Program Fellowship.

Obeng's research will focus on the role of certain mutations in causing blood cancers known as myelodysplastic syndromes (MDS). One of her goals is to discover how particular mutations influence disease progression and prognosis of these cancers. "There is even less known about MDS in pediatric patients than in adults, which is one of the reasons I chose to work in the laboratory of a physician-scientist [Benjamin Ebert, MD, PhD] with experience with this disorder in adults," she says.

As a clinician, Obeng is an attending physician in the pediatric inpatient stem cell transplant unit, and also cares for stem cell transplant and pediatric oncology patients in the Jimmy Fund Clinic. [RS](#)



Ken Anderson

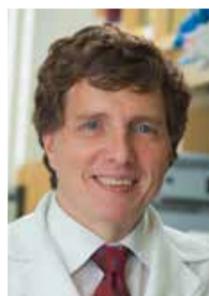
## Anderson appointed to NCI and Institute of Medicine committees

**Ken Anderson, MD**, director of the Dana-Farber/Brigham and Women's Cancer Center Jerome Lipper Multiple Myeloma Center and Lebow Institute for Myeloma Therapeutics, was appointed to the Board of Scientific Advisors of the National Cancer Institute (NCI). Anderson and his fellow advisors will help the NCI prioritize the most promising areas of cancer research for further study.

Anderson has also been appointed to the Institute of Medicine's National Cancer Policy Forum, where he will help ensure scientific and clinical advances quickly make their way to cancer patients.

"I am highly honored, and very grateful, to help serve on these committees," says Anderson. "I hope my participation will help fast-forward progress in cancer research."

Anderson, named one of "The World's Most Influential Scientific Minds" in 2014 by Thomas Reuters for his work in multiple myeloma research, is also the Kraft Family Professor of Medicine at Harvard Medical School. [AB](#)



Mark Kieran

## Kieran selected to advise Pediatric Brain Tumor Foundation

**Mark Kieran, MD, PhD**, clinical director of the Pediatric Brain Tumor Center at Dana-Farber/Boston Children's Cancer and Blood Disorders Center and associate professor of pediatrics at Harvard Medical School, was named to the new Research Advisory Network of the Pediatric Brain Tumor Foundation. He joins 16 other medical, research, and pharmaceutical leaders on this volunteer network.

The Research Advisory Network will use its members' collective experience to inform the Foundation's funding priorities and measure the effect of its research investments on the lives of children living with brain tumors. The Pediatric Brain Tumor Foundation has awarded more than \$24 million to pediatric brain tumor research since its founding in 1991.

In addition to treating children with brain tumors at Dana-Farber/Boston Children's, Kieran focuses his research on the development of novel agents for treating recurring tumors, as well as angiogenesis agents. He has been director of the Pediatric Brain Tumor Center since 1998, and has consistently been listed as one of the top doctors in Boston by Boston Magazine since 2009, among other accolades. [SEW](#)

## Dana-Farber receives more than \$342K from QVC and FFANY

The Susan F. Smith Center for Women's Cancers at Dana-Farber received \$342,143 from QVC Presents "FFANY (Fashion Footwear Association of New York) Shoes on Sale," an annual charitable shoe sale that raises funds and awareness for breast cancer organizations nationwide. The 20<sup>th</sup> annual sale, which took place in October 2013, included more than 75,000 pairs of shoes.

Dana-Farber is one of nine beneficiaries of the 2013 event. Shoes for sale included those by Enzo Angiolini, Bandolino, Anne Klein, Via Spiga, Etienne

Aigner, Carlos by Carlos Santana, Vince Camuto, Jessica Simpson, BCBGeneration, and LUCKY Brand. During the past 20 years, QVC Presents "FFANY Shoes on Sale" has sold more than 1 million pairs of shoes and raised more than \$44 million for breast cancer research and education. [SEW](#)

## Jimmy Fund Clinic patients skate with the stars

Dana-Farber Jimmy Fund Clinic patient Nora Rozgony, 8, of Broomfield, Colo., hit the ice with figure skaters (from left to right) Agnes Zawadzki, Johnny Weir, Eric Radford, Colin McManus, and Daniel Eaton, during An Evening with Champions, Sept. 19 and 20. More than 2,000 attended the shows, which featured performances from world-class skaters and gave Jimmy Fund Clinic patients the opportunity to skate with the pros. The benefit, organized by Harvard University students and held at the school's Bright-Landry Hockey Center since 1970, has raised more than \$2.7 million for adult and pediatric cancer research and care at Dana-Farber. [SEW](#)



## Ever Wonder?

### Should patients get the flu shot?

The flu vaccination is the best way to protect yourself and others from the flu. But will patients benefit from the flu vaccine given their immunity and treatment status?

All patients are encouraged to ask their providers about getting the flu vaccination. Each patient has a specific optimal timeframe for flu vaccination, which is carefully determined by the patient's doctor based on the ability of the individual's immune system to respond to the vaccine.

Patients on chemotherapy, or those who have recently received a stem cell transplantation, might not respond to the vaccine and should instead take extra precautions, such as washing their hands, using alcohol sanitizer, and avoiding close contact with people who have a viral illness.

There are many options for flu vaccination, and each patient should speak with his or her doctor to determine which type of flu vaccine is most appropriate.

Some local pharmacies use an intranasal flu vaccine that contains a live virus. This vaccine is not safe for the majority of patients at Dana-Farber. Patients are encouraged to receive their flu shot at the Institute, which uses an inactivated vaccine. Patients can ask their health care team for more information about flu vaccination and the optimal time to receive it. [AB](#)

Thanks to Candace Hsieh, RN, a nurse in Infection Control & Prevention, for providing the information used in this article.

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Story ideas are welcome and can be sent to Naomi Funkhouser at 450 Brookline Ave., OS301, Boston, MA 02215. You can also call 617-632-5560, fax to 617-632-5520, or email [Naomi\\_Funkhouser@dfci.harvard.edu](mailto:Naomi_Funkhouser@dfci.harvard.edu). Visit the Dana-Farber website at [www.dana-farber.org](http://www.dana-farber.org) or the intranet at [www.dfcionline.org](http://www.dfcionline.org).

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**Editor**  
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**Editorial Contributors**  
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**Photo and Design Contributors**  
Marissa Demboski, John DiGianni, Steve Gilbert, Megan Hill, Kimberly Ryan, Aaron Washington  
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# For husband-wife survivors, life is a marathon

Many people have compared the long rigors of cancer therapy to running a marathon. Few, however, have pulled off both feats simultaneously.

Tim O'Neill, who is being treated for chronic lymphocytic leukemia (CLL) at Dana-Farber, ran the 2014 Boston Marathon® this past April as part of the Dana-Farber Marathon Challenge (DFMC) team. He saw the accomplishment as a way of giving back to his treatment team, since 100 percent of the funds raised by DFMC runners are directed to the Institute's Claudia Adams Barr Program in Innovative Basic Cancer Research. This season the DFMC celebrated its 25<sup>th</sup> running in support of Barr Program research projects that probe the molecular genetics, biology, biochemistry, and epidemiology of cancer.

For O'Neill, the marathon experience had even deeper meaning because of who was taking on this challenge alongside him: his wife, and fellow cancer survivor, Kirsten O'Neill. The couple, who were diagnosed within three months of each other in 2006 and 2007, ran for the DFMC team with their friend Dan Kortick and called themselves the CELLmates.

"This was about healing and a return to normalcy, both for the city and ourselves," says Tim, referring to the bombings at the 2013 marathon. "We get stronger only through adversity and perseverance."

Considering the adversity the O'Neills have



Kirsten O'Neill, right, a rectal cancer survivor, ran the 2014 Boston Marathon with her husband, Tim, who was in active treatment for chronic lymphocytic leukemia at the time.

overcome, Heartbreak Hill was just an anthill. A year after they met, in 1997, Tim's 23-year-old brother Joseph died of brain cancer. Tim and Kirsten were married in their native Narragansett, R.I., in 2002, and shortly thereafter Tim's parents both died within a six-month period – his father from diabetes and his mother from ovarian cancer.

Then came their own diagnoses: Kirsten with Stage III rectal cancer in October 2006, at age 33, and Tim with CLL in February, at 40. Kirsten's treatment, including

surgery, radiation, chemotherapy, and numerous complications, took more than a year. She celebrated its completion by running her first marathon in Portland, Maine, in 2009.

Tim has had less defined endpoints, with several relapses and stints on assorted clinical trials. Still, when Kortick asked him if he wanted to try a marathon, Tim took the dare and got the blessing of his oncologist, Arnie Freedman, MD.

Kirsten quickly got on board, too, and the three joined more than 700 DFMC teammates who raised more than \$8.2 million this year for the Barr Program. Although Tim was on a seven-pill daily regimen for his latest trial, and was restricted from taking over-the-counter medications to help with sore muscles and other running-related issues, he gutted it out through dark morning jogs and 10-mile snow runs.

Just a week before the race, another challenge emerged. "I came down with the flu, and was so sick I was told not to run," says Kirsten. "But there was no way I wasn't going to do this after all we had been through. For Tim and me to do something health-related together that didn't involve someone being in the hospital was wonderful."

Adds Tim: "We spent a decade of our lives in hospitals; it was an unrelenting grind. To come out on the other side able to help the Barr Program is fantastic.

"The next drug they discover could save my life." <sup>SW</sup>

## Researchers identify early sign of pancreatic cancer

Scientists at Dana-Farber, the Massachusetts Institute of Technology, and other institutions have discovered a sign of the early development of pancreatic cancer: an upsurge in certain amino acids that occurs before the disease is diagnosed and symptoms appear.

Although the increase isn't large enough to be the basis of a new test for early detection of the disease, the findings will help researchers better understand how pancreatic cancer affects the rest of the body, particularly how it can trigger the sometimes deadly muscle-wasting disease known as cachexia.

"Most people with pancreatic ductal adenocarcinoma (PDAC) [by far the most common form of pancreatic cancer] are diagnosed after the disease has reached an advanced stage, and many die within a year," said Dana-Farber's Brian Wolpin, MD, MPH, the co-senior author of the new study in *Nature Medicine* with Matthew Vander Heiden, MD, PhD, of MIT and Dana-Farber. "Detecting the disease earlier in its development may improve our ability to treat it successfully. In this study, we asked whether PDAC produces metabolic changes – changes in the way the body uses energy and nutrients – that can be detected before the disease is diagnosed."

The researchers used previously collected blood samples from 1,500 people participating in large health-tracking studies. They analyzed the samples for more than 100 different metabolites – substances produced by the metabolic process – and compared the results from participants who later developed pancreatic cancer and those who did not.

"We found higher levels of branched chain amino acids in people who went on to develop pancreatic cancer compared to those who did not develop the disease," Wolpin said. (Branched chain amino acids are one family of amino acids, the building blocks of proteins.) Those individuals were diagnosed with pancreatic cancer between two and 25 years later, the researchers found.

"These findings led us to hypothesize that the increase in branched chain amino acids is due to the presence of an early pancreatic tumor," Wolpin said, a theory confirmed in the laboratory of Vander Heiden's group at the Koch Institute for Integrative Cancer Research at MIT. Their experiments showed that mice with

newly formed pancreatic tumors had above-normal blood levels of these amino acids due to a breakdown of muscle tissue, which released branched amino acids into the bloodstream. This process is similar to what occurs in patients with cancer cachexia. "What was surprising about our results was that it appears the breakdown of muscle protein begins much earlier than previously appreciated," noted Vander Heiden.

The findings provide an important lead to scientists studying how pancreatic tumors interact with patients' normal tissues, the authors say. According to Vander Heiden, this work offers a glimpse into how pancreatic cancer changes the way the rest of the body handles nutrients. "This work has the potential to spur progress in detecting pancreatic tumors earlier and identifying treatment strategies for those with the disease," he remarks.

Lead authors are Jared Mayers, of MIT; Chen Wu, of Dana-Farber, Harvard School of Public Health, and the Cancer Institute and Hospital, Chinese Academy of Medical Science, Beijing, China; and Clary Clish, PhD, of the Broad Institute and Harvard University. Dana-Farber co-authors include Chen Yuan; Shuji Ogino, MD, PhD; Zhi Rong Qian, MD, PhD; Douglas Rubinson, MD, PhD; Annan Yang, PhD; Alec Kimmelman, MD, PhD; and Charles Fuchs, MD, MPH. <sup>RL</sup>

### Flu Clinics Oct. 1 to 17

Occupational Health Services is offering free flu vaccinations for staff.

Oct. 1-17

Monday-Friday, 8:30 a.m. to 4 p.m.  
Dana 110 (behind the cashier's office)

On site vaccination clinics for staff of our local off site campuses and the Jimmy Fund Clinic will also be coordinated and dates will be communicated to those areas. DFCI satellite staff will receive free flu vaccinations at their individual locations.

Get your flu shot through the DFCI staff clinics, get a 10 percent discount at Friends' Place!



## Facebook contest awards Lester jersey

Patient Jon Potter (left) was the winner of a signed Jon Lester Red Sox jersey through a Facebook contest run by Dana-Farber.

The "Red Sox Stars" Facebook contest took place July 15 through Aug. 12. To enter the drawing, participants voted for their favorite Red Sox player in an online poll. A winner was randomly selected from the list of voters.

Although Lester has moved on from the Red Sox, Potter was "thrilled" to win the jersey.

"As a huge Red Sox fan, this jersey is going to have a place of honor in my home," Potter says.

To follow Dana-Farber on Facebook, visit [facebook.com/danafarbercancerinstitute](https://facebook.com/danafarbercancerinstitute).





The Boston Motorcycle Marathon Ride attracts more than 1,000 riders to the famed race route.

a North Andover, Mass., retiree and father of four whose wife, Denise, is a breast cancer survivor. “I remember thinking, ‘Why can’t we do the marathon route on our bikes for the Jimmy Fund? How cool would it be to cruise down Commonwealth Avenue and Beacon Street with people cheering for Dana-Farber?’”

He asked his friends who rode, and while some were skeptical if he could pull it off, others thought it was a great idea. Then he called the Jimmy Fund, and they were supportive as well.

“During the course of the year we work with hundreds of individuals who conduct events on behalf of the Jimmy Fund and Dana-Farber, resulting in millions of dollars being raised,” says Brenda Goodell, director, Special Events Division at the Jimmy Fund. “They range anywhere from fishing tournaments to events like Fred’s. His motorcycle ride is unique and attracts so many participants – we are extremely grateful for his efforts.”

Although Georgoulis jokes that a career in the automotive industry did not prepare him for the job, he was soon knocking on the doors of North Andover businesses and police departments throughout New England to get logistical and other support. “I did all my visits in person, so people could look in my eyes and see how serious I was,” he explains.

Aided by fellow volunteers Karen Kimball and Kevin Nee, Georgoulis worried that the inaugural ride, scheduled for Aug. 11, 2013, might be postponed after the Boston Marathon bombings of that April. In the end, it became even more powerful. Georgoulis read that the Jimmy Fund was the favorite charity of slain MIT police officer Sean Collier, and approached the MIT Police Department and Collier’s family about doing the ride in his memory – including laying a wreath at the Cambridge location where he was killed by the accused bombers. They agreed.

“My son Nicholas is a police officer, and is 26 – the same age Sean was when he was killed,” says Georgoulis. “I was already honoring my wife and all those with cancer through the ride. By honoring Sean’s memory, I could also honor my son and other officers.”

The 2013 ride went off as planned, with more than 250 police officers and more than 1,000 motorcyclists – many of them cancer survivors – taking part. This year the ranks grew to more than 1,300, and Georgoulis is already planning his 2015 fundraising ride for the Jimmy Fund. The skeptics have disappeared. <sup>SW</sup>

### Multiple myeloma, continued from page 1

and physicians. Improvements in the treatment of metastatic cancers have, for the most part, not been nearly as dramatic as in primary disease.”

The study focused on multiple myeloma because it is metastatic by nature. Myeloma cells originate in the bone marrow, depart for the bloodstream, and eventually return to the bones, where they form numerous colonies – hence the name multiple myeloma.

Ghobrial and her team knew that a substance called stromal cell-derived factor-1 (SDF-1) is a kind of protein Pied Piper, attracting certain cells to new locations within the bone marrow. They found that mice with advanced stages of myeloma had sharply higher levels of SDF-1 at the sites in the bones where metastasis had occurred.

“We reasoned that by neutralizing SDF-1, we could change the bone marrow environment to make it less receptive for multiple myeloma cells, reduce myeloma cells’ affinity for the marrow, and thereby inhibit the progression of the disease,” said Aldo Roccaro, MD, PhD, the study’s co-first author with

Dana-Farber colleague Antonio Sacco, RN.

Working with the German biotechnology company NOXXON Pharma, the researchers tested a substance called olaptosed pegol (a PEGylated mirror-image L-oligonucleotide)

that binds tightly and specifically to SDF-1. Laboratory experiments suggested that olaptosed pegol blocks the activity of SDF-1, making it a less alluring signal for tumor cells. In mice, the researchers found that olaptosed pegol alters the bone marrow, rendering it uninviting to myeloma cells. The result was a slowing of the disease progression and a prolonged survival of the animals.

It isn’t completely clear what becomes of the blood-borne myeloma cells that are prevented from metastasizing to the bones, the researchers said. “We know that myeloma cells can’t survive for long if

Hematologic Malignancies and co-chief of its Adult Stem Cell Transplantation Program. “We want to be sure patients receive top-notch initial and follow-up care close to home.”

“Advances in cancer medicine have saved the lives of millions of patients, which has increased the need for long-term support of survivors and their families,” says Amy Emmert, who oversees the hematopoietic stem cell transplant operation at DF/BWCC. “That, in turn, is sparking changes in the way organizations provide post-treatment services. Studies have shown that survival rates have risen faster for patients who live near the site where they received complex treatment than for patients who live further away.

“Patients often receive follow-up services at both the academic medical center where they were treated and at various hospitals and clinics closer to home,” she continues. “The Shared Care program will lead to greater coordination with community-based providers. The primary goal is to improve outcomes

for patients, but the program will also help decrease the financial and time burden on patients who travel back and forth to the transplant center for follow-up care.”

She notes that the DF/BWCC team already coordinates pre- and post-transplant care with some community medical practices and hospitals, but often in an ad hoc manner. The new program offers the opportunity to formalize such arrangements and make them more consistent.

One of the main tasks involves standardizing procedures for monitoring pre- and post-transplant patients, so the care that patients receive at the community partners is consistent with that at DF/BWCC, Soiffer states. “The goal is to create a unified, seamless system of care. Dana-Farber/Brigham and Women’s Cancer Center can be a true leader in this area.” <sup>RL</sup>



## An Epic Journey

### Calling all Credentialed Trainers

In addition to Super Users, 24 Credentialed Trainers (CTs) are needed to assist with classroom training for DFCI’s transition to Partners eCare. CTs will complete a six-week training program to gain expertise in the system and will use training materials created by the Partners eCare team to ensure all users meet the required level of proficiency to gain access to the system.

Credentialed Training will begin in mid-January. It is preferred that candidates for the position have prior teaching or training experience with adult professional or clinical staff training, systems training, or expertise in a clinical department or area.

CTs will be dedicated to their role for a minimum of six months. Following the rollout of the new system, some CTs will still be needed to provide new employee training, work with Instructional Designers to communicate training updates to Super Users, provide upgrade training, and offer support to users.

Staff serving as Credentialed Trainers to support go-live will have their current position protected and will be able to return once their commitment is complete.

If you are interested in becoming a CT, please speak with your manager and review the criteria for the position at <http://dfcionline.org/clinical/partnersecare/training/roles>. <sup>AS</sup>

If you have questions regarding Credentialed Trainers, please email [DFCI\\_PeCTraining@dfci.harvard.edu](mailto:DFCI_PeCTraining@dfci.harvard.edu).



they’re circulating in the blood and can’t adhere to other tissue,” Ghobrial remarked. “But we saw no evidence that they had metastasized and begun to grow in other tissue, either.

“Our findings clearly document a therapeutic effect of olaptosed pegol in a mouse model of advanced myeloma,” Ghobrial continued. “It is now being tested in a clinical trial of multiple myeloma patients, with more trials to come.”

Dana-Farber co-authors of the study are Michele Moschetta, MD; Yuji Mishima, PhD; Patricia Maiso, PhD; and Michaela Reagan, PhD. <sup>RL</sup>