DoCMessages

A Division of Cancer Medicine Information Exchange

THE UNIVERSITY OF TEXAS MD Anderson Cancer Center
Making Cancer History®

VOL. 11, NO. 3, 2014

Spotlight on physician assistants

Christine Vu makes lasting impression on patients in less than 6 months on the job

– By Maxsane Mitchell

Sometimes getting written up is a good thing!

Christine Vu, MPAS, PA-C, could not make it through her six-month probationary period without getting written up. And that's a good thing. The note placed in the Leukemia employee's personnel file came from a patient who was very complimentary and impressed with the humble manner in which the respiratory therapist-turned master's-prepared physician assistant went out of her way to make a difference in her care.

The woman made her remarks on CarePages, a patient support blog in the MyMDAnderson portal. The patient recalled three separate times that she's encountered Vu. "You were performing my bone marrow biopsy the first time we met. Although you had not done a lot of these procedures, you were confident, but open to any feedback from me as we went through the process. You did an excellent job, and I felt so at ease because of your open and caring personality," she wrote.

Not just a face in the crowd

The second time they met was in an elevator when Vu recognized the patient, asked how she was doing, and walked with her to find her husband in The Park area on the second floor of the main building. "I felt like a friend of yours, not just a face in a crowd of patients."

Their third meeting would be in a patient room. Vu entered the room around the time a food tray fell and she assisted the other employee in cleaning it up. "I was really impressed. You have a servant's heart," the patient wrote.

Giving back and doing more

Vu doesn't believe she did anything special, just her job. "We're all here to accommodate the patients," she said. Her first job in healthcare was as a respiratory therapist at a Cypress-area hospital. Vu held that position for a year before deciding to return to school to become a physician assistant. "I loved being a respiratory therapist, but I wanted to be more involved in my patients' cases. I chose oncology because I had had family members who were diagnosed with cancer. I wanted to give back, do more, and make a difference," she said.

In just a short time, Vu seems to be on the right track. "Work is always interesting and different every day. I remember little things about all my patients—like, right now I have one who crochets and another one whose wife just traveled to Tennessee to see their grandbaby who is expected to be born any minute."

Employees Making a Difference continued

Employees Making a Difference

Mother's battle inspires award-winning passion

Tobi Fisher earns 2014 Geneva and James Briscoe Award for Excellence

Tobi Fisher, MS, PA-C, was inspired to enter the profession after watching her mother fight, but ultimately succumb to, her battle with cancer over 15 years ago. "Her diagnosis of ovarian cancer taught me early on how this disease can emotionally and financially impact a patient and their family. It was then that I found my passion for becoming a PA at MD Anderson to help patients with their courageous fight," said Fisher, a physician assistant in the Department of Stem Cell Transplantation and Cellular Therapy.

Fisher was selected as the winner of the 2014 Geneva and James Briscoe Physician Assistant Award for Excellence, presented annually to an employee who excels in his or her clinical role, delivers quality patient care, demonstrates a commitment to research and education, and serves as an inspiration to others. She received multiple nominations from peers, faculty colleagues, and patients. Fisher is appreciated for her willingness to precept new physician assistants, for coaching new doctors about the clinic's policies and procedures, for her grasp of complicated medical issues ranging from infection to graft-versus-host disease, and for her service on multiple institutional committees – including one that establishes training protocols for bone marrow aspirations and lumbar punctures, and another in which she gives input from a clinician's perspective on customizing the soon-to-be-implemented Epic electronic health record system.

Beyond the Texas Medical Center, Fisher serves as the founder and first chair of the Advanced Practice Professionals Committee of the International Society for Cellular Therapy. The group, formed in September, is comprised of physician assistants, advanced practice nurses, and pharmacists who want to become more knowledgeable about emerging strategies for an expected increase in transplantations and cellular treatments.

Fisher, middle, with Richard Champlin, MD, *ad interim* division head and Stem Cell Transplantation and Cellular Therapy chair, and Elizabeth Shpall, MD, deputy department chair

Profound commitment

Nominators unanimously agreed that Fisher's future in the field is promising. "She is highly skilled, extremely knowledgeable, and the best PA I have ever worked with. Tobi is a model for best practices in our group. Plus, her cheerful, upbeat personality lifts the spirits of even our sickest patients, and inspires members of our staff," wrote one nominator. Another shared, "I now sleep better at night knowing that Tobi is on the team because there is never a clinical problem that is left unresolved. She is always there for the patients, exhibiting a commitment that is profound."

A patient referred to Fisher as knowledgeable and nurturing. "More than anything else, Tobi gives you hope. I am convinced that I could never have made it through everything I went through without her," he wrote. "I'm alive, in great part, because she is in the clinic. Tobi has a complete understanding of the issues surrounding transplant survival and she uses that awareness to guide all her patients."

– By Maxsane Mitchell

Employees Making a Difference continued

Our Hearts of MD Anderson

Analyst likes working with team in which everyone has mission: Curing cancer

Christine An, MHM, senior financial analyst in Lymphoma/Myeloma, never sets foot in clinic exam rooms, but she has a lot to do with the clinical trial care that is offered to many of our patients. She oversees financial activities, pre/post-award grants and contracts, all fiduciary reporting, and annual budgeting for the department. "Our faculty members provide their medical skills and knowledge to extend the lives of our patients and ultimately cure cancer through their groundbreaking research efforts. It's my honor to support them and our mission through my work," An said. That kind of dedicated work ethic is what compelled faculty and colleagues to submit her name for consideration for the Heart of MD Anderson Outstanding Employee Award, and why she won the honor in October 2014.

"Christine is fabulous," said one nominator. "She's very results-oriented and collaborative, has a positive attitude, and instills excellence in others because of her leadership example." Others wrote that they appreciate her efforts to foster a good team environment on which everyone has an important role. An has worked at MD Anderson for 15 years, eight of those in Lymphoma/Myeloma. She supervises 14 employees — accountants, program managers, grant program coordinators, senior clinical studies coordinators, and senior clinical research data coordinators.

Single-minded mission

An says what she likes the most about her job is that everyone here works with one single mission in mind—to cure cancer. "On the way to achieving that goal, we provide each patient with the best treatment options possible. It's wonderful to wake up each day knowing that I'll be working with great people, for a great cause," An said. She recalled that her boss, **John Randall, MHA,** department administrator, informed her that she would be receiving this recognition at a leadership conference. "I was so surprised, but thankful to him and my team for the regard and support they show me daily. I would like to sincerely thank my chair, **Dr. Larry Kwak,** and others who nominated me."

The Heart of MD Anderson Award comes with a pink marble plaque that is similar to the marble used in the construction of most institution buildings, a new employee badge, and $1,000. An's portrait will remain posted in several locations throughout the main campus for one year. An said the extra cash came at a great time. "I will buy Christmas presents for my two daughters. They are growing up and I am very proud of them. Having the love and support of my husband and children is critical to success in your career. That's what sustains you when there are difficulties. I want my daughters to be proud of me, and to learn from me, even my mistakes," An noted.

– By Maxsane Mitchell

Melanoma research nurse supervisor commended for inspiring patients and staff each day

Suzanne Cain, BSN, RN, OCN, CCRP, research nurse supervisor in Melanoma Medical Oncology, exemplifies MD Anderson's core ideals of caring, integrity, and discovery in every aspect of her daily work coordinating clinical trials in Melanoma. For her stellar performance, she was named the April 2014 Heart of MD Anderson Outstanding Employee Award winner.

With 15 to 20 active clinical protocols each day, all subject to change at a moment's notice, the Melanoma Department is a busy place. A research nurse with more than 30 years of experience, Cain trains new nurses in this complex role, pairing each of them up with an experienced senior nurse as a mentor so they can become well-versed with their responsibilities. With no handbooks or official programs for the position, Cain developed a set of standard operating procedures to train the research nurses.

A team player

"Her can-do attitude and excellent nursing experience have resulted in her being the one employee I have never heard a complaint from or a bad comment about," a nominator said. "Suzanne is with you for the long haul and gives more than lip service to the notions of teamwork," another stated.

As a child, Cain aspired to become a nurse after seeing her mother become one. After working at MD Anderson for nine years now, she said that being part of cutting-edge research here is very satisfying, not to mention the constant learning environment where no question is too small or cannot be answered one more time.

She has cared for all kinds of patients—including an octogenarian who lost his wife during his treatment, a doctor who was acutely aware of the intensity of his disease, and an otherwise-healthy newly married young man who died after developing complications.

Patients a source of strength

Having a father who survived melanoma, she treats patients like her family—"a son or a brother perhaps"— and they think so, too, inviting her to bar mitzvahs and family reunions. The patients are her biggest source of strength, she said. "I've seen people who know they have no chance of survival hang on a few more months on a clinical trial to provide a bit more information that may help others to survive in the future."

– By Parvathy Hariharan

Cancer Medicine faculty shine at Honors Convocation

The 2014 Faculty Honors Convocation—an annual celebration of faculty achievements across the institution—was held on Nov. 6, 2014. Cancer Medicine faculty members were among those recognized for setting new benchmarks in the mission to end cancer through research, treatment, and education.

Hagop Kantarjian, MD, professor and chair of Leukemia, won the Charles LeMaistre Outstanding Achievement Award in Cancer for his legendary body of work that saves the lives of many leukemia patients around the world. The co-leader of the Myelodysplastic Syndrome-Acute Myeloid Leukemia- (MDS-AML) Moon Shot also leads the country's biggest leukemia practice, which has pioneered many standard-of-care treatments for a spectrum of hematological disorders. He is also known as a bold champion of many public health issues in oncology, such as the rising prices of cancer drugs. Kantarjian stated that this award was the greatest honor he could hope for in his research career and it truly belonged to the faculty and staff in his department. Thanking a number of colleagues for their unflinching support through the years, he joked that **Waun Ki Hong, MD,** former division head of Cancer Medicine and professor in Thoracic/Head and Neck Medical Oncology, had been his personal psychotherapist on a weekly basis for more than a decade. "The lifetime achievement awards are usually given to researchers in the sunsets of their careers," he said. "But I'm only 60 years young, and this is just the beginning of my research career, and the best is yet to come."

Susan O'Brien, MD, professor of Leukemia, received the Faculty Achievement Award for Clinical Research for her internationally recognized work in the treatment of acute and chronic leukemias. The Acute Lymphoblastic Leukemia section chief is known as a role model with more than 600 peer-reviewed publications and 40 clinical trials leading to the development of several targeted therapeutics. She thanked Kantarjian and **Michael Keating, MD,** from her department, as well as other institutional faculty and staff for being instrumental in her growth. Commenting on the growing bureaucracy involved in clinical research, she urged the younger faculty not to be dissuaded, but to fight against it. "We have to remember that for relapsed, refractory cancer patients, the biggest risk to them is really the risk of dying of their disease," she said. "It's clinical research that led us to have the drugs that we have to cure some of our patients, and it's further clinical research that will find us new drugs that can cure even more of our patients."

Sattva Neelapu, MD, associate professor in Lymphoma/Myeloma and director of the Lymphoma Tissue Bank, received the Faculty Scholar Award for his research on immunotherapeutic approaches to battle B cell malignancies. He has led innovative clinical trials such as immune checkpoint blockade therapy in follicular lymphoma and one of the country's first cancer vaccine studies. A very significant contribution was the discovery of the TCL1 antigen in lymphomas that could potentially lead to a universal lymphoma vaccine. He thanked the institution for his growth as an independent investigator over the years, especially department chair **Larry Kwak, MD, PhD,** for his mentorship over the past decade. Remarking that immunotherapy had been faced with early failures, he said that field has really turned around in the past few years and looks very promising. "My goal is to continue investigating novel therapies in the lab and translating them to clinical care," he said. "What's most rewarding is to see the therapies reach the patients."

– By Parvathy Hariharan

Accolades continued

Accolades

Cancer Medicine faculty named as AAAS Fellows

Three professors from the Division of Cancer Medicine were elected to the American Association for the Advancement of Science (AAAS), among the eight honorees from The University of Texas MD Anderson Cancer Center this year. They are: **John Mendelsohn, MD,** former president of MD Anderson and Experimental Therapeutics professor, **Varsha Gandhi, PhD,** *ad interim* chair also from Experimental Therapeutics, and **Jeffrey Molldrem, MD,** professor in Stem Cell Transplantation and Cellular Therapy. All the new AAAS fellows will be formally recognized at the AAAS Annual Conference in San Jose, CA, in February 2015.

Mendelsohn was named a fellow for his groundbreaking translational research recognizing the role of epidermal growth factor receptor (EGFR) signaling in cancer cell growth and proliferation and developing inhibitory antibodies to block their action. His work resulted in a new class of agents that inspired the field of molecular targeted therapy. Three EGFR inhibitors have since been approved by the FDA and used to treat more than 100,000 cancer patients while driving a growing body of research with 100 ongoing clinical trials spanning 15 types of cancer. As the president of MD Anderson from 1996 to 2011, Mendelsohn fostered the institution's research-centric patient care and now directs the Sheikh Khalifa Bin Zayed Al Nahyan Institute for Personalized Cancer Therapy, which aims to integrate genetically tailored therapy for each patient as a routine part of cancer treatment.

Gandhi was honored for her research in developing nucleoside analogs—drugs that mimic the chemical building blocks of DNA—and understanding their metabolism and mechanisms of action to maximize their potential as anticancer agents in hematological malignancies. Her work has informed the clinical use of fludarabine, cytarabine, clofarabine, nelarabine, and numerous other drugs in addition to identifying new synergistic therapeutic combinations. A postdoctoral fellow who rose to become the chair *ad interim,* Gandhi is a passionate advocate of education and mentorship. She helped found the Experimental Therapeutics Academic Program at The University of Texas Graduate School of Biomedical Sciences and now directs its operation. She also led several departmental initiatives to nurture scientific talent, including a career development forum for postdoctoral fellows and a mentoring program for junior faculty.

Molldrem was named for his pioneering work in cancer immunotherapy discovering novel cancer-associated antigens that can be used to trigger immune responses. He discovered the leukemia-specific antigen PR1 and led its clinical trial as a vaccine for myeloid leukemias and myelodysplastic syndrome, one of the first studies of its kind. His team recently showed that the PR1-targeted immunotherapies can also potentially be employed against breast and skin cancers because of antigen cross presentation in these solid tumors, a finding that could lead to newer therapeutic approaches in these diseases. The chief of the Section of Transplant Immunology has also designed a unique PR1-based antibody that triggers anti-tumor response by complement activation and holds many patents for developing immunotherapeutics used by biotechnology companies.

– By Parvathy Hariharan

Accolades continued

Provost's Distinguished Faculty Mentor awardees see promise in next generation

Michael Keating, MBBS, professor in the Department of Leukemia, was named the Provost's Distinguished Clinical Faculty Mentor of 2014, while **Elizabeth Grimm, PhD,** professor in Melanoma and deputy division head for research affairs, and **Gordon Mills, MD, PhD,** professor and chair of Systems Biology, share the Provost's 2014 Distinguished Research Faculty Mentor awards, presented at a reception held Oct. 14. **George Calin, MD, PhD, Zhen Fan, MD,** and **Shuxing Zhang, PharmD, PhD**—all from Experimental Therapeutics—and **Aung Naing, MD,** from Investigational Cancer Therapeutics, were others from the division who earned honorable mentions.

Paying it forward

Nominators described Keating as not just having a major impact on their careers but also on the careers of people they now influence. "He helped me form a bridge from the clinic to the laboratory, enabling me to initiate a program that created a pharmacological basis for hypothesis testing in the clinic. This approach, which Michael continues to be very much a part of, has been generously extended to my trainees, and to yet a third generation that is anxious to build their own leadership skills," said a nominator.

Others wrote of their appreciation for Keating's constructive criticism to help them improve their presentations at regional and national meetings. Another noted Keating's advocacy to take on challenges that raised the mentee's stature among national peers and ultimately led to his ascent from co-investigator to principal investigator.

Keating's work with fellow faculty led to the discovery that fludarabine is the most active single agent against chronic lymphocytic leukemia (CLL). Their efforts took remission rates from 5% to 30%, then he and collaborators went further, showing that fludarabine with cyclophosphamide (FC) benefitted patients even more. That combination along with rituximab (FCR), an anti-CD20 recombinant monoclonal antibody, was able to provide a whopping 72% complete remission rate in previously untreated patients, and a 60% to 80% improvement in their five-year survival rate when compared to chemotherapy alone.

"In a career, we're fortunate if we have two to three decades to achieve a difference in the field we choose. But in the latter part of that time, we begin to see that the world is different now than when we started. We will all be surprised by those we train. Thus, mentoring makes a difference," Keating shared.

Keating gets a hug from his former postdoc research fellow Apostolia Tsimberidou, MD, PhD, now an associate professor in Investigational Cancer Therapeutics

Accolades continued

Accolades

Elegant professionalism

Grimm is known for her groundbreaking translational research exploring the dynamic interplay between melanoma and the immune system. Outside of office hours, she advocates work-life balance as a faculty yoga instructor.

Nominators say that she generously devotes time to helping faculty—even those outside her department—in applying for tenure-track positions, guiding them in every step of the process from seminar presentation, negotiating start-up funds, and other aspects of managing their labs. They praised her as an icon of "integrity, dignity, and elegant professionalism" who can "quietly inspire you to rise higher in your field and navigate office politics with grace and without cynicism."

Grimm credits her mentors, including Patrick Hwu, MD

As a role model who is always reachable, Grimm is someone they strive to emulate while mentoring their own post-doctoral fellows and students. "On many occasions, I have gone further than I thought I could, just because she taught me I could," one nominator said.

Saying that our workforce is like a family we choose, Grimm thanked the nominators for recognizing her for something she enjoys doing so much. She credited her own mentors **Waun Ki Hong, MD,** professor and former division head of Cancer Medicine, and **Patrick Hwu, MD,** professor and chair of Melanoma Medical Oncology and Sarcoma Medical Oncology, for inspiring her. "Our mission is simply too broad for anyone to conquer alone," she said. "And by giving and growing this family, ensuring our future through mentoring, we will continue to make real progress and continue the legacy of success."

Opening doors and stepping back

A prolific systems biologist recognized internationally for his work on cellular signaling pathways and associated genetic aberrations in human cancer, Mills has a long legacy of training many mentees, including students, post-doctoral scholars, and clinical fellows, who have gone on to become highly successful academic leaders.

Mills, center, takes joy in spotting and developing young talent

Nominators praised Mills for opening the doors to big professional opportunities and then stepping back to let them take on leadership roles that win them national recognition. One nominator said: "I still vividly remembered, on the first day we met, the first thing he talked about was: What is your career goal? How can I help you achieve that goal?" Another remarked that Mills had the unique vision to identify a suitable do-able project for a young trainee and then scale it to their maximum potential.

Stating that the goal and joy of his position is to spot and develop bright young talent, Mills said that he was merely giving back to the community after seeing how people went out of their way to help him when he was a trainee himself. "It's not what I do," he said. "It is what you do that is going to make a difference for our patients through the next generation."

–By Maxsane Mitchell and Parvathy Hariharan

Accolades continued

Festschrift celebrates former Division Head Waun Ki Hong, MD

Waun Ki Hong, MD, former head of the Division of Cancer Medicine, recalled at a Festschrift honoring his lifetime of accomplishments as a legend in the field, that he was born in a small town outside of Seoul, South Korea. He worked hard in school and followed his brother's footsteps to become a doctor. He served as a flight surgeon in the Vietnam War and then made the decision to come to America. "When I arrived at the Norfolk Airport in Virginia, I had less than $400 in my pocket and my wife was eight months pregnant. But we believed the United States was where we should be," he said at the event, held Aug. 15 to mark his retirement. The mayor of Houston, Annise Parker, declared the day as Dr. Waun Ki Hong Day in Houston in honor of his trailblazing contributions to cancer research.

When Hong first applied for a medical oncology fellowship at MD Anderson, his request was never answered — ironic, considering that he would later lead the biggest division here and foster the same program to greater successes. Instead, he went to Memorial Sloan Kettering Cancer Center (MSKCC), and then became chief of medical oncology at Boston Veteran's Administration (VA) Medical Center, where he had done his residency. At the VA, he began making one of many seminal contributions to the field of cancer care and research. Firstly, he was the main architect and principal investigator of the landmark laryngeal preservation trial that used induction chemotherapy and radiotherapy to spare some patients surgery that would render them voiceless. This method also served as a model for organ preservation for bladder and many other cancers.

Hong soon gained notoriety for his scientific vision and bold clinical approaches, and later received a request from his former boss at the Boston VA Medical Center that would change his life, and that of his family's. **Irwin Krakoff, MD,** renowned for drug development at MSKCC and for helping MD Anderson double its clinical faculty and vastly expand its laboratory programs in pharmacology, chemistry, immunology, chemoprevention, and molecular biology, presented Hong with a job offer. "When I invited Ki to come to MD Anderson, there were personal challenges," said Krakoff. "Mainly that his kids were having a great career in high school, and Ki loved the Boston Red Sox." But he came and his impact was felt immediately. "From there, it's been nothing but success, and I could not be prouder of him than if he were my own son," said Krakoff. Hong's other accomplishments include establishing proof-of-principle that chemoprevention is effective in patients with head and neck cancer, thereby helping to define a new discipline in medical oncology. He also was the principal investigator for Biomarker-integrated Approaches of Targeted Therapy for Lung Cancer Elimination (BATTLE) — the first large, randomized study applying molecular signatures of a patient's tumor to guide treatment assignments to selected targeted agents. This work was instrumental in the development of a new paradigm of personalized cancer therapy in solid tumors.

Hong and Krakoff share a moment at the Festshrift

Hong is a widely published author, with over 564 scientific papers published in prominent peer-reviewed journals and 146 invited articles. He's served on the editorial boards of 17 scientific journals and edited 11 books, including the seventh and eighth editions of *Holland-Frei Cancer Medicine.* Hong served as president of the American Association of Cancer Research in 2001 and played a major role in shaping public policy by serving as a member of the National Cancer Institute's Translational Research Working Group and the U.S. Food and Drug Administration (FDA) Oncologic Drug Advisory Committee. He also served as chair for several groups, including the American Society of Clinical Oncology (ASCO) Translational Research Task Force and the Subcommittee of Clinical Investigations for the National Cancer Advisory Board. His numerous achievements include his 2013 election to the Institute of Medicine (IOM) of the National Academies and the American Cancer Society (ACS) Medal of Honor for Clinical Research, granted in 2012.

Festschrift continued

However, Hong has said many times that his biggest joy as division head was working with medical oncology fellows and all research postdoctoral fellows. At MD Anderson, he oversaw the training of more than 200 clinical fellows and established the endowed Advanced Scholars Program for young investigators following fellowship to give them a year of protected time to work on research. Throughout his career, Hong has touched the careers of more than 100 international trainees from 18 countries — including Korea, China, Japan, Italy, France, and Spain. A number of Hong's mentees at the Festschrift — including both young career investigators and iconic scientists — said that he guided them on the less-travelled road, deeply investing his time and energy and providing highly personalized mentorship with great moral clarity and political savvy, all life-lessons they sought to imbibe in own mentoring. "Dr. Hong sets specific goals; he has high expectations; and he follows up on the outcome. Once he has done these things, he cheers loudly from the sidelines," said **Lauren Byers, MD,** assistant professor in Thoracic/Head & Neck Medical Oncology and a graduate of the Advanced Scholar program, who echoed the words of many other faculty members. **"I can say that aside from my immediate family, nobody has been more excited than Dr. Hong for each step of the way I've made progress in the goals that I set."**

After thanking everyone for attending the Festschrift and sharing stories about how his work or mentorship impacted their careers, Hong talked about what he will be doing in the future. "I'm going to use the word 'transition,' instead of retirement," he began. "My first career transition was my decision to immigrate to this country for the American Dream. It was a gutsy decision, but turned out to be hugely successful. The second professional transition was the move from Boston to Houston. Again, successful. I'm hoping my third career transition will be great." Hong said he and his wife will be travelling between the east and west coasts to visit their grandchildren. Additionally, he will serve as a special advisor to several cancer centers and other organizations to help strengthen their research portfolios and drug development platforms. He noted that he will still have an important role and an office at MD Anderson. "I will work approximately one week every month mentoring young physician scientists through the Advanced Scholars Program in the Division of Cancer Medicine and the Institute for Personalized Cancer Therapy. Mentoring young people has been very important throughout my career, so I will continue to enjoy this work immensely," said Hong.

– By Maxsane Mitchell and Parvathy Hariharan

Stem Cell department administrator Walters earns national recognition

Congratulations to **Kent Walters, MBA, CMPE,** Stem Cell Transplantation and Cellular Therapy medicine department administrator, who received the Healthcare Financial Management Association's 2014 Founders Medal of Honor in recognition for outstanding service to the profession at the chapter, regional, and national levels. Walters, who was an association board member from 2008 to 2014, was honored at the association's Texas Gulf Coast chapter meeting in September.

Walters also is active with the American Society for Blood and Marrow Transplantation, where he serves as a member of the Reimbursement Committee; an elected member of the Administrative Director Special Interest Group Steering Committee; and vice chair of the Request for Information Committee, which sets policy for the type of data that transplant centers send to payors. Walters was an invited presenter at the 2014 ASBMT/Tandem meeting, where he addressed staffing ratios and justifications, and at the 2014 National Marrow Donor Program Council Meeting, where he discussed the impact of the Affordable Care Act in Texas. Walters is a co-author of journal articles and manuscripts relating to pharmacoeconomics as well as a housing and caregiver study relating to transplant patients.

A 10-year MD Anderson employee, Walters participates at an organizational level to develop global partnerships in Southeast Asia through initiatives such as the annual Asia Pacific Hematology Consortium's Bridging the Gap conference. Walters began his career at a medical auditing firm and soon transitioned into physician practice management. He was the administrative director of a behavioral healthcare facility in Katy, Texas, and later for a Memorial Hermann chemical dependency unit in Houston. From there, Walters went in to consulting, serving as the startup CEO for the first provider-owned managed care company in Connecticut, and then led successful engagements relating to physician practice acquisition, business office and practice turnarounds, and hospital strategic planning for integrated networks on the East Coast.

– By Claire Blondeau

Meet the 2014 incoming class of Hematology/Oncology Fellows

First-day excitement was palpable among 14 physicians who in July 2014 began the three-year Hematology/Oncology Fellowship Program. The fellows were selected from 69 candidates who were invited for interviews, winnowed down from a total of 403 applicants. Another medical doctor transferred to our program for his third year of training.

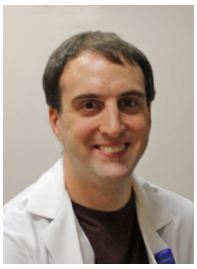
All 15 of the new fellows hope to become leaders in the field and, according to their evaluators, are well on their way. But, why did they choose oncology? Many believe because cancer has "the most unknowns" and is a worthy challenge for a career that should span decades. One fellow knew since high school that this was what he wanted to do, while another worked as a technologist in a transfusion unit before deciding to do more than provide doctors with lab results. Several have published in prestigious journals such as Nature, while their peers spent time in leadership and teaching positions, such as serving as chief residents.

Luis Baez Vallecillo, MD

MD: University of Puerto Rico School of Medicine, San Juan, PR
Residency: University of Texas Health Science Center, Houston, TX

As a child, Baez Vallecillo dreamed of becoming a hematologist-oncologist, just like his father. However, with time and changing life circumstances, he studied industrial engineering at Stanford University and worked as a financial analyst at Goldman Sachs before becoming a partner and chief financial officer of their special investments operations in Puerto Rico. Realizing his true calling, he later went on to study medicine and became chief resident at the University of Texas Health Science Center in Houston, where he won their most outstanding graduating resident award. During this time, he also investigated the role of metalloproteinases in developing resistance to trastuzumab in HER2/neu-positive breast cancer. As a physician-scientist, he hopes to harness his unique background in finance and operations managing clinical and translational research studies to bring novel therapeutics to the underserved community. Nominators commend him as "personable, a born leader, and a self-starter" whose "maturity, compassion, and intelligence make him the complete package."

Incoming Fellows continued



Jonathan Brammer, MD

MD: Northeastern Ohio Universities, **Residency:** Baylor College of Medicine, Houston, TX

Brammer, who transferred from Oregon Health and Science University in Portland to complete his third fellowship year, barely knew his way around the institution before he began working with faculty to evaluate efficacy and the best application of transplant for T cell hematologic disorders. He is currently performing a database review on T cell leukemias and plans to work with a mentor on a prospective clinical trial to best treat these patients. In early 2014, Brammer reported the results of a non-myeloablative allogeneic stem cell transplant regimen for the treatment of elderly and infirm patients at the Bone Marrow Transplantation TANDEM meeting. Other projects include writing a chapter on chronic graft-vs.-host disease (GVHD). Publishing success includes papers on hepatocellular carcinomas in the Journal of Gastrointestinal Cancer, and on small cell carcinomas—two of them as first author in *International Journal of Clinical Oncology*.

Tina Cascone, MD, PhD

MD, PhD: Second University of Naples, Naples, Italy
Residency: Barnes-Jewish Hospital at Washington University School of Medicine, St. Louis, MO

Cascone's father was diagnosed with cancer when she was a medical student. What began as personal curiosity then sparked a desire to comprehend the genetic mysteries of this disease. Upon graduation, she pursued an oncology fellowship and later began her doctoral studies in the lab of **John Heymach, MD, PhD,** professor and chair of Thoracic/Head and Neck Medical Oncology. Much of her research focuses on resistance to vascular endothelial growth factor/receptor (VEGF-R) and epidermal growth factor receptor (EGFR) inhibitors, and has won two Scholar-in-Training Awards from the American Association for Cancer Research (AACR). Across multiple studies, she investigated the roles of tumor VEGF, the HGF/c-MET axis, and stromal mechanisms of VEGF/R-inhibitor resistance. She also proposed proteasome inhibition as a treatment option that has led to promising results in Phase I clinical trials. "The hope and the heartache I witnessed each day on the oncology floor provided the inspiration for my research," Cascone said. Not surprisingly, one nominator ranked this former figure skater as "the" best trainee in all his professional life.

May Daher, MD

MD: American University of Beirut, Lebanon, **Residency:** Vanderbilt University, Nashville, TN

Daher has come a long way from her home country of Lebanon to Nashville, TN, in pursuit of her goal to become an oncologist. Whether it is volunteering as a medical provider during the war in Lebanon, offering to play and teach children during cancer treatment, or seeking educational experiences in Finland and the United States, she always sought out opportunities to become a better doctor. During one of her international clerkships as a medical student, she investigated a case series on dermatologic effects of the insulin-like growth factor-1 (IGF-1) receptor inhibitor cixutumumab, and during her residency at Vanderbilt, she became interested in outcomes research and studied the long-term endocrine effects of allogeneic stem cell transplantation in a large cohort of 480 patients. Nominators say that she is among the rare breed of doctors in the hectic world of modern medicine who genuinely find a way to become friends with the patients—not only discussing treatment, but also family, travel, and life. "I truly believe she will be great at anything she decides to do," one nominator said.

LaQuisa Hill, MD

MD: University of Texas Medical Branch at Galveston, **Residency:** Vanderbilt University, Nashville, TN

In her first career, Hill worked for five years as a lead medical technologist at The University of Texas Southwestern Medical Center, where her responsibilities included performing hematology, chemistry, and microbiology workups, and sharing insight with administrators as they grew the bone marrow transplant program. During this time, she decided she wanted to do more than examine people's cells—she wanted to be their doctor. In residency, Hill's interest in hematology deepened after one of her patients died from GVHD and other complications following stem cell transplantation for acute myeloid leukemia. The patient's passing inspired Hill to do a retrospective study to explore the role of hematopoietic stem cell graft composition and immune reconstitution on disease outcomes. She also assisted her mentor in writing a chapter on nutritional assessment and supplementation for long-term bone marrow stem cell transplant survivors. Hill joined this fellowship to gain skill as a clinical researcher of malignant blood diseases and stem cell transplantation. Evaluators wrote that she has outstanding clinical judgment, does an exemplary job of managing tough patient cases, and is compassionate and empathetic, while seizing opportunities to make a real impact by taking on difficult discussions regarding diagnoses.

Incoming Fellows continued

Bei Hu, MD

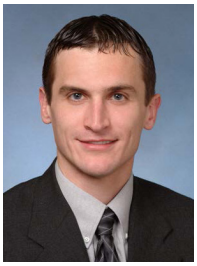
MD: University of California, San Francisco, CA, **Residency:** Vanderbilt University, Nashville, TN

Hu strives to be a clinical investigator who brings novel therapies to induce remission. Each of her patients' struggles have left a deep impression on her: such as the young woman deciding on her pregnancy after her diagnosis with leukemia, the newly engaged man learning that he had stage IV pancreatic cancer, and the liver cancer patient understanding that she failed all treatment options. As a resident, these experiences spurred Hu on to analyze the range of treatment options for acute myeloid leukemia patients with FLT3 mutations and investigate viral reactivation following stem cell transplantation. "The complex medical decisions being made, the close relationships formed with patients and their families, and the enormous challenges in caring for patients with difficult-to-treat malignancies have been essential to my personal and professional growth," Hu said. Nominators agree, citing that her warm personality, high energy level, and great sense of humor contributed to the exceptional way she cares for patients with complex medical and emotional needs.

Ghayas Issa, MD

MD: Saint Joseph University Faculty of Medicine, Beirut, Lebanon
Residency: Beth Israel Medical Center, New York City

Issa views medicine as an opportunity to reach out to people across social barriers of community and religion. During medical school, he studied cancer epidemiology in Lebanon, the first national study of its kind, for which he received the Scholar in Training award from the AACR. The death of a close friend from medical school due to Hodgkin's lymphoma further strengthened his resolve to become an oncologist. With little experience in laboratory research, he joined the Dana-Farber Cancer Institute and, within a year, demonstrated that bromodomain inhibition of the c-Myc oncogene could be a potential therapeutic strategy in multiple myeloma. This project led to a Cell publication listed as one of the most significant discoveries of 2011 by Nature Medicine. While agreeing that he is an intellectual powerhouse, nominators recognize that his life experiences make him an incredibly kind and empathetic physician. They commend his professionalism and work ethic in helping others with their clinical workload in the weeks following Hurricane Sandy while having no electricity, heat, or plumbing for more than two weeks. "On a personal level, this young man can only be described as a gem," one said.



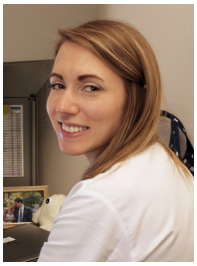
Kenneth Kehl, MD

MD: Northwestern University, **Residency:** Brigham and Women's Hospital, Boston, MA

After finishing residency, Kehl worked for three years as an internal medicine hospitalist, and for two of those years, cared primarily for inpatients with cancer. In that role, he appreciated the opportunity to help patients across the cancer spectrum from frontline therapy to clinical trials to palliative care to affecting policies about improving the care delivery process. Research efforts include a study of clinical trial participation in lung and colorectal cancer patients, which he presented at American Society of Clinical Oncology (ASCO) in 2014, and the impact of drug shortages among these populations. He now hopes to see a broad spectrum of patients and to develop stronger analytical skills and research techniques that he can apply toward optimizing health services and care delivery, particularly among groups that could be better represented in clinical trials, such as young adults and adolescents, the elderly, and minorities. One evaluator wrote that "Ken's intellect and skills in treating complex patients, and his thinking about their symptoms and how their illnesses affect the whole person and their families, make him a great asset to any program. His extensive clinical experience in caring for cancer patients will serve him well."

Incoming Fellows continued

Research and Education



Brittany Ragon, MD

MD: University of South Carolina at Columbia, **Residency:** Vanderbilt University, Nashville, TN

Conversations with a patient awaiting treatment for her third relapse of acute myeloid leukemia made an indelible impression upon Ragon, sparked an interest in hematology and stem cell transplantation that compelled her to do multiple research projects under a mentor, and prompted her to apply for this fellowship. During residency, Ragon investigated the consolidation regimen prior to stem cell transplantation to determine if more could be done for patients in between chemotherapy induction and transplantation. She presented a poster at the American Society of Hematology Annual Meeting in 2012 about the importance of long-term follow-up care of allogeneic hematopoietic stem cell transplantation patients, and this year published a first-author paper on the subject in Biology of Blood and Marrow Transplantation: a Journal of the American Society of Blood and Marrow Transplantation. Ragon also wants to explore how immunology, genomics, and bioinformatics can work together to advance therapies for blood malignancies, something she's uniquely qualified to do as it pairs her medical training with her bachelor's degree in biosystems engineering. Evaluators shared that Ragon is intelligent and doggedly pursues each patient's best interest, leaving no stone unturned. One evaluator wrote that she's in the one percentile of all residents he's trained in 13 years.

Sangeetha Reddy, MD, MS

MD: University of California at Los Angeles, **MS:** Northwestern University, Chicago, IL
Residency: Northwestern University, Chicago, IL

Evaluators noted that Reddy has a keen interest in solid tumor cases, translational research, and clinical trial design, and that she was always willing to get involved in research projects, including a clinical trial on an investigational agent for AML and another examining the effects of genistein in resectable pancreatic adenocarcinoma. Reddy presented first-author posters at ASCO in 2012 and 2013, respectively, on a retrospective study of stage I-III breast cancer patients to create a risk prediction model for weight gain associated with mortality and morbidity, and a clinical trial to determine if thermal quantitative sensory testing can be used to measure oxaliplatin neurotoxicity as early as cycle one to predict chronic neuropathy in gastrointestinal cancer patients. She believes this tool may be used to determine early on the need for changes in treatment or the addition of protective agents in high-risk patients. Reddy's research experience so far, and earning a master's in clinical investigation, have given her a deeper appreciation for statistical analysis and study design. She hopes to build on that during her fellowship and apply it in an academic medicine setting. Evaluators describe the former chief resident as smart, comprehensive, enthusiastic, and a born leader among other excellent physicians.

Matthew Reilley, MD

MD: Brown University, **Residency:** Hospital of the University of Pennsylvania

Reilley chose oncology because it combines the intellect and thoughtfulness required to correctly diagnose and treat complex cases, and deep, personal relationships with patients and their families. He is interested in solid malignancies, in particular genitourinary and gastrointestinal cancers. Reilley has done research in the area, including a study of health behaviors among long-term testicular cancer survivors, with first-author results published in the Journal of Community and Supportive Oncology in 2014. Evaluators wrote that Reilley has an excellent fund of knowledge that he applies with judgment beyond his years, was "unflappably reliable," always took tremendous initiative to read about every disorder affecting his patients, and asked insightful questions that indicated he was thinking about the pathophysiology of the disorders. Another evaluator recalled how Reilley "delivered with aplomb" a presentation of Heparin-induced thrombocytopenia. Reilley, who many evaluators believe will become a medical administrator at some point in his career, always finds the time to participate in the larger medicine community, such as serving as a student delegate of the American Medical Association Committee on Education, where he surveyed curriculum differences between schools; updating the Electronic Residency Application Service Advisory Board system; and spending two months working in Kenya's Moi Teaching and Referral Hospital.

Incoming Fellows continued

Research and Education

Andrew Shaw, MD

MD: University of Texas Medical School, Houston, TX
Residency: University of Virginia, Charlottesville, VA

A passionate internal medicine specialist, Shaw envisions cancer as the ultimate challenging multisystem disease that has no anatomic borders and requires the full breadth of medical expertise to treat it. He said that this factor, coupled with his desire to establish fulfilling personal connections with his patients while working at the forefront of medical research, intrinsically motivates him to become an oncologist. During residency, he retrospectively analyzed clinical outcomes of pathology reviews in both benign and malignant breast disease—a study that was presented at the 2013 ASCO annual meeting—while simultaneously managing resident and medical student education as chief resident. During the same time, he also won the resident clinician award for excellence in primary care by what one nominator calls "a unique combination of compassion, clinical acumen, and thorough, tireless patient care." Another said: "I can think of multiple occasions when Dr. Shaw's knowledge of internal medicine frequently surpassed my own."

Nicholas Short, MD

MD: Baylor College of Medicine, Houston, TX
Residency: Brigham and Women's Hospital, Boston, MA

Short knew he wanted to treat cancer since high school when he shadowed a neuro-oncologist, observing the intense bonding between her and her patients, many of whom were severely mentally and physically affected by their disease. During the same time, he also studied the effects of omega-3 fatty acids, gamma radiation, and electromagnetic fields on angiogenesis in breast cancer, a research project leading to multiple publications in later years. As an undergraduate, he even investigated the spiritual beliefs of pediatricians and pediatric oncologists for publication in a major sociology journal, and during medical school, he studied the epidemiology of Lynch syndrome and colorectal cancer in minority patients at Ben Taub General Hospital. As a resident, he investigated the combination of multiple drugs to treat co-existing medical conditions, such as using novel oral anticoagulants in cancer patients undergoing concomitant chemotherapy. Nominators said that these experiences have made him an exceptional clinician and a devoted physician-educator who takes time to connect with the sickest patients with a reassuring calmness and poise that he also uses to defuse complex conflicts in the clinic. One nominator said that he would not hesitate to choose Short as his doctor if he or his family became sick.

Marc Uemura, MD, MBA

MD, MBA: University of California at Irvine, Residency: Harbor University of California Medical Center

Evaluators described Uemura as engaging, charismatic, and eager to learn. They noted the former chief resident's clinical work as outstanding and said they would not be surprised to learn someday that he had become the CEO of a major healthcare institution. Early successes include simultaneously earning medical and business degrees and then becoming known throughout residency as the doctor who always volunteers for projects. These include creating with nurses a pamphlet to inform patients about the risk and benefits of PICC lines and how to care for them, and contributing to quality improvement efforts in cancer care at City of Hope through continuing medical education, the results of which he published in the Journal of Cancer Education. Evaluators said Uemura, who trained at a hospital where many patients are financially challenged, did well overcoming administrative hurdles for patients. In this fellowship, he wants to learn how to design and conduct clinical research and use his business acumen to help devise safer ways to make cancer care more cost-efficient. Additionally, Uemura holds a second-degree black belt in Judo and won a collegiate championship in the sport.

Incoming Fellows continued

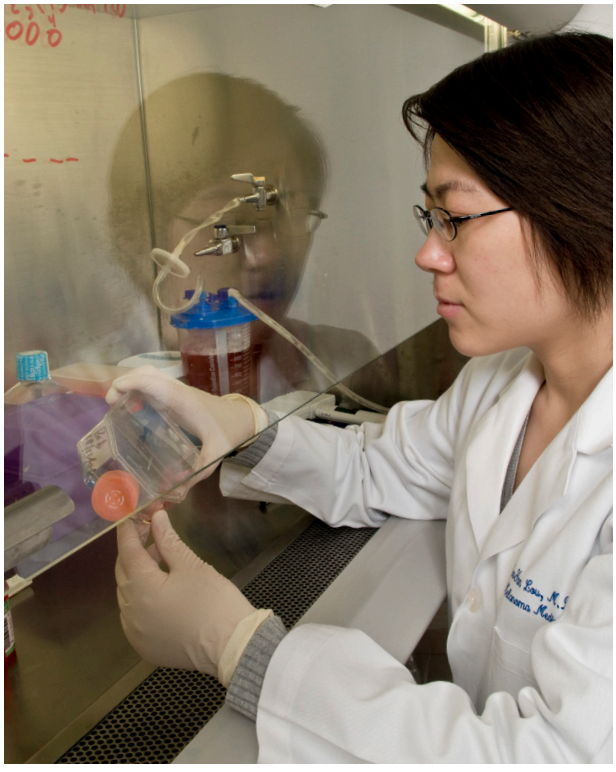
Michael Wagner, MD
MD: Harvard University, Boston, MA, **Residency:** Mount Sinai Hospital, New York City, NY

As a fourth-year medical student, Wagner analyzed the range of treatment options available for sarcoma patients at Dana-Farber Cancer Institute, a research project he later presented during the 2012 ASCO meeting. Learning that many sarcoma patients who failed the first two treatments had very dismal prognoses with no further defined therapeutic options, he recognized the profound need to understand the cellular mechanisms driving tumorigenesis to bring personalized targeted therapeutics to these patients. This motivation led the Intel Science Talent search finalist toward many research projects, including investigating novel targeted agents in melanoma and glioblastoma cell lines in a biotechnology company, and analyzing the impact of checkpoint blockade inhibition and IGF-targeting therapies in sarcoma. Nominators say he will be a leader in the field with his no-nonsense approach and indefatigable energy, asserting that he has the ability to always finish research projects on time while putting patients first. "Dr. Wagner will do everything in his power to get his patients the best care possible," one said.

– By Maxsane Mitchell and Parvathy Hariharan

Three fellows win ASCO Young Investigator Awards

Three of our Hematology/Oncology fellows were awarded Young Investigator Awards (YIAs) by the American Society of Clinical Oncology (ASCO) earlier this year to initiate their own research projects.



Yanyan Lou, MD, PhD, left, third-year fellow
Research Title: Investigating tumor microenvironment immune phenotypes in epithelial-mesenchymal transition and EGFR tyrosine kinase inhibitor-resistant NSCLC: implication for immunotherapy

Seung Tae Lee, MD, PhD, third-year fellow
Research Title: TCL1 vaccine therapy for follicular lymphoma

Meghan Karuturi, MD,
2014 Hematology/Oncology Fellowship graduate and assistant professor in Breast Medical Oncology
Research Title: Inappropriate drug use in older adults receiving adjuvant chemotherapy for breast and colorectal cancer

Welcome our 2014 Advanced Scholars

Among the highly dedicated physicians who pursue a career path in oncology is a select group with an equal talent for cancer research—and a passion to make new discoveries that will ultimately translate into more effective care for their patients. With exceptional dedication and expertise, these physicians with translational proficiency are the future of cancer medicine. Ensuring their success is the goal of the Advanced Scholar Program, an immersive learning experience to hone their skills in academic research.

"This fourth year of training helps oncologists build 'academic muscle' at the start of their careers," said **Waun Ki Hong, MD, FACP, DMSc,** professor of Thoracic/Head & Neck Medical Oncology and the former division head who conceived and launched the program. "Through additional opportunities for education and training by experienced mentors in an environment where leading-edge achievements consistently set global standards, Advanced Scholars will be better prepared to meet the challenges of their field and ultimately lead that field tomorrow."

Only those physicians who have excelled in completing both their residency and a clinical oncology fellowship and show a demonstrated interest and ability in clinical, translational, or basic laboratory research are eligible to compete for participation in this innovative program. As Advanced Scholars, they will benefit from an additional year of training aimed at refining their research skills and thus providing new hope for the patients with cancer.

All of our advanced scholars to date have successfully obtained academic appointments that continue the research they started as fellows and scholars and are working toward the promise of applying their findings to the care of their patients.

Those who have continued their careers with MD Anderson include:

- **Gheath Alatrash, DO, PhD,** assistant professor, Stem Cell Transplantation and Cellular Therapy;
- **Lauren Byers, MD, MS,** assistant professor, Thoracic/Head and Neck Medical Oncology;
- **Anthony Conley, MD,** assistant professor, Sarcoma Medical Oncology;
- **Don Gibbons, MD, PhD,** assistant professor, Thoracic/Head & Neck Medical Oncology with a secondary appointment in Molecular and Cellular Oncology;
- **Sumit Subudhi, MD, PhD,** assistant professor, Genitourinary Medical Oncology;
- **Jason Westin, MD,** assistant professor, Lymphoma/Myeloma; and
- **Scott Woodman, MD, PhD,** assistant professor, Melanoma Medical Oncology.

The 2014 Advanced Scholars are:

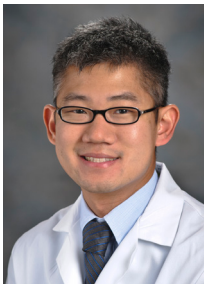
Christopher Benton, MD

Benton studies the role of rare "stem-like" leukemic cells with inherent oncogenic potential. Since leukemia is a blood cancer that originates in the bone marrow, cancer cells may sneak back into the vascular niche despite intensive treatment and perpetuate unknown before relapsing to full-blown disease. Benton seeks to better comprehend these dynamics in the supporting bone marrow microenvironment to develop clinical approaches to overcome refractory and relapsed disease. His efforts are guided by **Michael Andreeff, MD, PhD,** professor in the Department of Leukemia.

A biology major from the Massachusetts Institute of Technology, Benton's love for hematopoietic stem cell research was cultivated during his medical studies at Baylor College of Medicine, where he examined the role of the HMGA2 gene in the process of blood cell generation. He continued to pursue this interest after he joined our Hematology/Oncology Fellowship Program in 2011 and won the American Society of Hematology Research Training Award for Fellows for his research in Andreeff's lab.

In the Advanced Scholar Program, Benton focuses on leukemia cells that are similar to hemangioblasts, which are multipotent cells that can differentiate into both endothelial and hematopoietic cells. By identifying and isolating these hemangioblast-like cells, he is studying whether they generate leukemic endothelial-like cells that can evade chemotherapy. He is using an in vivo humanized mouse model of the bone marrow microenvironment to test this hypothesis. Comparing the genetics of these cells with other heterogeneous leukemic sub-populations such as leukemia stem cells using single-cell RNA sequencing will help further clarify their biological role. "My long-term goal is to contribute an element to the cure of leukemia for the patients we serve," he said.

Advanced Scholars continued

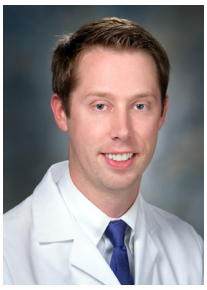


Hans Lee, MD

Lee joins the Department of Lymphoma/Myeloma in 2014 as an Advanced Scholar to improve understanding of the genetic drivers in myeloma pathobiology and validate novel drug targets in preclinical myeloma models that could be translated to the clinic. He is guided by **Robert Orlowski, MD, PhD,** professor in Lymphoma/Myeloma, one of the world's foremost experts on this disease.

A graduate of MD Anderson's Hematology/Oncology Fellowship Program, Lee came here after completing his MD at Indiana University School of Medicine and his residency at Barnes-Jewish Hospital at Washington University. As a fellow, he won an American Society of Hematology's Abstract Achievement Award in 2012 for his research on the role of chimerism testing in predicting relapse after allogeneic stem cell transplantation for acute myeloid leukemia/myelodysplastic syndrome. He also received the fellowship program's Achievement in Clinical Research Award upon graduation in 2014.

While significant advances have been made in the treatment of myeloma over the last decade, deletion 17p myeloma, which corresponds to loss of the critical tumor suppressor p53, still results in a very poor prognosis with an average life expectancy of two to three years for patients. Supported by the ASCO Young Investigator Award, Lee utilizes engineered cell line models and genome-wide and custom RNA interference screens to identify novel gene targets in deletion 17p myeloma. He is also investigating the mechanistic roles of RNA polymerase I inhibition as a therapeutic approach in myeloma preclinical models. "With its vast laboratory and clinical resources, MD Anderson presents an ideal environment to tread the interface between the bench and bedside, providing opportunities to rapidly translate promising approaches in the laboratory to patient care," he states.



Van Morris, MD

Morris studies the biological mechanisms driving colorectal cancer and other lower gastrointestinal tumors to translate this knowledge into more effective targeted therapies. He is guided by **Scott Kopetz, MD, PhD,** associate professor in Gastrointestinal Oncology, with whom he worked during his Hematology/Oncology Fellowship from 2011 to 2014.

During his fellowship, supported by the ASCO Young Investigator Award, Morris studied BRAF-mutated colorectal cancer—typically associated with a lack of response to standard treatment and with a poor prognosis—and identified new signaling pathways that may be important in the growth and spread of these tumors. As an Advanced Scholar, Morris will investigate potential novel drug combinations using BRAF inhibitors and other drugs targeting these pathways. During this year, he will also lead work on a translational research project in the forthcoming SWOG S1406 clinical trial. Supported by the SWOG Hope Foundation, he proposes to use a patient-derived xenograft (PDX) mouse model—mice with patient-derived tumors receiving therapies in parallel with patients on the clinical trial—as an integrated approach to study tumor evolution prospectively and analyze the mechanisms behind treatment response and resistance in these patients. This project is planned for a Phase II clinical trial of irinotecan and cetuximab with or without vemurafenib for patients with BRAF-mutated metastatic colorectal cancer.

Morris will also work with **Cathy Eng, MD,** professor in Gastrointestinal Medical Oncology, to design and conduct an immunotherapy clinical trial for a PD-1 inhibitor in metastatic anal carcinoma, an orphan disease for which there is no accepted standard of care. "Finding new answers about cancer will not only benefit the patient in front of me now but also other patients in future places and times," Morris said. "That is the real reward."

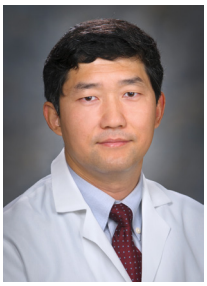
Advanced Scholars continued

Ferdinandos Skoulidis, MD, PhD

Skoulidis aims to uncover novel genetic subtypes of lung cancer that are both biologically and therapeutically significant, and translate this knowledge to the clinic. He joined the Advanced Scholar Program in 2014 as an instructor in the Department of Thoracic/Head and Neck Medical Oncology. This research year continues immediately after his fellowship in that department. His mentor is **John Heymach, MD, PhD,** professor and chair of Thoracic/Head and Neck Medical Oncology.

Prior to his arrival at MD Anderson, Skoulidis studied medicine at the Aristotle University of Thessaloniki, Greece, and completed his PhD and medical oncology training at the University of Cambridge, United Kingdom. In his doctoral thesis, he showed that a single mutant copy of the BRCA2 gene—contrary to the popular two-hit hypothesis—was sufficient to trigger pancreatic cancer in the presence of an activating mutation in the KRAS oncogene.

As a fellow in Heymach's lab, Skoulidis proposed that the differential effects of KRAS mutations can be attributed to co-mutations in downstream tumor suppressor genes, and his initial research supporting this idea won him an American Association for Cancer Research Scholar-in-Training Award. Since then, he has shown that there are distinct expression clusters of KRAS-driven lung cancer, each with unique genomic and proteomic profiles. As an Advanced Scholar, he is probing the phenotypic and clinical implications of these distinct genetic patterns by engineering mouse models and using shRNA and drug screens to identify potential therapeutic targets. He is also analyzing the impact of inactivating mutations in the NF1 tumor suppressor gene in the pathogenesis of non-small cell lung cancer, supported by a competitive award from Uniting Against Lung Cancer under its Legacy Program for Advances in Lung Cancer Research. He plans to validate these results using co-clinical trials before proceeding to early-phase clinical trials in the defined patient population.



Jianjun Zhang, MD, PhD

Zhang seeks to discover prognostic and predictive biomarkers in lung cancers and head and neck cancers by mining epidemiological databases and genomic analysis to help oncologists to accurately diagnose, classify, and treat cancers. He completed his MD at Tongji University School of Medicine and his PhD in Oncology from the Chinese Academy of Medical Sciences and Peking Union Medical College. After completing a postdoctoral fellowship at Memorial Sloan Kettering Cancer Center, he finished his residency training at the Long Island Jewish Medical Center in New York. His work as an Advanced Scholar builds upon his research during his MD Anderson's Hematology/Oncology Fellowship from 2011 to 2014. He also won a 2013 ASCO Merit Award and the 2013 A. Lavoy Moore Endowment Fund Award.

An instructor in MD Anderson's Department of Genomic Medicine, Zhang is mentored by **Andrew Futreal, PhD,** professor in Genomic Medicine, and a pioneer in large-scale cancer genomics who is known for the discovery of BRCA1 and BRCA2 breast and ovarian cancer susceptibility genes, BRAF mutations in melanoma, and ERBB2 mutations in non-small cell lung cancer, among others. Zhang also collaborates with other mentors in Translational Molecular Pathology and Thoracic/Head and Neck Medical Oncology.

As an Advanced Scholar, Zhang is focusing on the inter- and intratumoral genomic heterogeneity of lung cancers and head and neck cancers to understand the impact of genomic architectures on cancer biology and clinical outcomes such as disease progression and relapse. "I aim to understand how tumor genomic heterogeneity contributes to cancer development, progression, metastasis, and drug resistance, and apply this knowledge to cancer patient care," he said.

– By Parvathy Hariharan

Cancer Medicine trainees win laurels for research

Researchers from the Division of Cancer Medicine won half of the Trainee Excellence Awards given in June 2014. Granted by the MD Anderson Alumni and Faculty Association, this honor carries a cash award of $500 each for original research at MD Anderson presented at a national or international conference during the year.

- **Preetesh Jain, MD, DM, PhD,** fellow in Leukemia, earned this award for analyzing the diverse biological responses and long-term impact of frontline treatment with different tyrosine kinase inhibitors in chronic myeloid leukemia (CML). Mentored by Leukemia Professor **Jorge Cortes, MD,** he showed that treatment with imatinib 800 mg, nilotinib or dasatinib led to better response rates in patients with chronic phase CML compared to imatinib 400 mg. He also found achieving complete cytogenetic response at 6, 12 or 18 months, or attaining a major molecular response at 12 months — regardless of the drug used — was a significant predictor of better event-free.

- **Renata Ferrarotto, MD,** assistant professor in Thoracic/Head and Neck Medical Oncology, won the award for her research identifying biomarkers that predict sensitivity to Polo-like kinase 1 (PLK1) inhibitors in non-small cell lung cancer (NSCLC). Working with Professor **Faye Johnson, MD, PhD,** she discovered that mesenchymal NSCLC cell lines — especially those with the KRAS mutation — were the most sensitive to PLK1 inhibitors, a finding with significant therapeutic implications in these cancers that are frequently resistant to many treatments.

Cancer Medicine researchers also won accolades during the Trainee Research Day competition also held in June. Honorees receive a certificate and cash awards ranging from $500 to $1,000.

- **Eleonora Dondossola, PhD,** postdoctoral fellow in Genitourinary Medical Oncology, received the first place among oral presentations for her research on metastatic prostate cancer, mentored by Professor **Peter Friedl, MD, PhD.** Using tissue engineering approaches, she designed a novel humanized bone model in mice to study the biology of bone metastases that are common in prostate cancer and to develop appropriate therapies.

- **Rina Mbofung, BS,** graduate research assistant in Melanoma Medical Oncology, also received the first place among oral presentations for her research mentored by department chair **Patrick Hwu, MD.** Using a mouse model of adoptive T cell therapy in melanoma, she found that T cells overexpressing the transcription factor Runx2 had impaired IFN-ϒ production and lower proliferation but higher cell death. This study indicates that Runx2 plays an immunosuppressive role in the tumor microenvironment and could potentially influence treatment response.

- **Jodi McKenzie, PhD,** postdoctoral fellow from Melanoma Medical Oncology also mentored by Hwu, won first place in the poster competition for her project showing that the addition of topoisomerase 1 inhibitors synergistically enhanced the effect of immune checkpoint antibodies and tumor-infiltrating lymphocytes in melanoma cell lines and animal models. These findings are important to improve response rates to melanoma immunotherapy, which triggers long-lasting remissions, but only in a subpopulation of patients.

- **Andreas Varkaris, MD,** postdoctoral fellow from Genitourinary Medical Oncology, won second place in the poster category. Mentored by professors **Gary Gallick, PhD,** and **Christopher Logothetis, MD,** he used patient-derived xenograft models — mice with patient tumor cells concurrently receiving the same drug as the patients in an ongoing clinical trial — to explore mechanisms of resistance to cabozantinib, a tyrosine kinase inhibitor. This research suggested cabozantinib acts primarily due to angiogenesis inhibition and bone remodeling modulation, not on sustained inhibition of the targeted c-MET oncogene. They also proposed that the drug's efficacy could be enhanced by combining it with other microenvironment-targeting drugs in prostate cancer with bone metastases.

- **Xuemei Xie, PhD,** postdoctoral fellow from Breast Medical Oncology, also won the second place in the poster category for work mentored by Professor **Naoto Ueno, MD, PhD,** using RNA interference techniques. She demonstrated c-Jun N-terminal kinase (JNK) — a hyperactive cellular enzyme in triple-negative breast cancer — enhances growth of cancer stem cells by activating the Notch 1 cell signaling pathway, an insight into the cellular mechanisms behind this aggressive cancer.

– By Parvathy Hariharan

Visiting Professors engage audiences with novel concepts

13th
Waun Ki Hong
Visiting Professor

Wolf traces changing paradigms in treating advanced laryngeal cancer

To rethink the cookie-cutter approach in treating advanced laryngeal cancer, it is important to incorporate clinical and biological factors to decide the best therapeutic strategy for each patient, says Gregory Wolf, MD, professor of surgery and chair emeritus of the otolaryngology department at the University of Michigan Medical Center. A surgeon focusing on tumor immunology and its impact on chemotherapy, Wolf is a fellow and former president of the American Head and Neck Society who delivered the 13th Waun Ki Hong Visiting Professorship lecture honoring the professor of Thoracic/Head and Neck Medical Oncology and former division head of Cancer Medicine earlier this year.

Laryngeal cancer is a global health problem with a five-year survival rate of 50%. Morbidity is an important factor in balancing the intensity of treatment and the trade-off between survival and overall quality of life. In his lecture, Wolf traced the evolution of treatment for advanced laryngeal cancer, one of the first malignancies for which organ-preserving treatment approaches was conceived.

Discussing the integration of chemotherapy into routine clinical management that previously only included surgery and radiation, he cited Hong's landmark Veteran's Affairs larynx trial as the first of its kind to show that larynx preservation was possible in two-thirds of these patients, resulting in a better quality of life. However, both this trial and several others following it showed that chemotherapy had little impact on survival. "The single greatest reason for our lack of progress in making an impact on overall survival is our failure to appreciate and address the systemic nature of cancer and match treatment to the biology of the tumor," he stated.

Working to predict response

Looking for clues to decide the best treatment for each patient, Wolf and his colleagues from the University of Michigan observed that clinical factors, such as faster response to treatment and early surgical salvage for nonresponding tumors, were indicative of the need for surgery. The biologic pointers of a tumor's aggressiveness also revealed some potentially prognostic factors: Patients having tumors with an indolent growth pattern showing low levels of the tumor suppressor p53, the cellular proliferation marker PCNA, and CD4+ T cells but high levels of the cellular pro-survival protein Bcl-xL were best suited for laryngectomy. Chemotherapy and radiation treatments were more appropriate for patients whose tumors showed aggressive growth characteristics such as high aneuploidy, mutated p53, high PCNA expression, and low Bcl-xL expression, in addition to higher pretreatment CD4+ T cell counts. Using response to induction chemotherapy as a clinical substitute for these biological markers to select specific patients for specific treatments, the researchers achieved a dramatic long-term survival rate of 80% in advanced laryngeal cancer—previously possible only in early disease.

Wolf's ongoing research includes targeting Bcl-xL using novel agents to increase the response rate and identifying biomarkers for epidemiological factors such as human papilloma virus (HPV) status, diet, and smoking history. Stating that oncologists live in an exciting time, he suggested that nonresponding patients were excellent subjects for newer treatment approaches, and novel trial designs for smaller numbers of patients are needed to accommodate these analyses. "Times are changing, and we are looking at epigenetics in terms of prevention," he said. "We think that better patient selection will be based on multiple molecular markers."

– By Parvathy Hariharan

2014 John Mendelsohn Visiting Professor

Cancer plays therapeutic hide-and-seek by actively maintaining an assortment of genetically different cells

Just like humans, cancer cells try to be as different as possible from one another. Knowing that depending on any one mutation alone might make them easy targets for treatment, they smartly try to make each tumor a mix of genetically different cells. This phenomenon of a single tumor exhibiting genetically diverse cells—called tumor heterogeneity—is a dynamic process carefully set up and constantly monitored by the cancer cells themselves, says Webster Cavenee, PhD, right, director of the Ludwig Center for Cancer Research, San Diego, who delivered the 2014 John Mendelsohn Visiting Professorship lecture earlier this year.

A former president of the American Association of Cancer Research with more than 340 peer-reviewed publications to his credit, Cavenee is widely known for his work on genetic aberrations in human cancer. "Heterogeneity can be a hit-or-miss situation by which targets can play a game of hide-and-seek," he remarked, suggesting that the frequently changing genetics of the tumor makes it difficult for doctors to treat with any one type of therapy alone.

Primary glioblastoma multiforme—the most aggressive brain tumor with survival measured in months after diagnosis—is known to frequently harbor epidermal growth factor receptor (EGFR) mutations known to drive tumorigenesis. However, few patients respond to EGFR inhibitor therapy, and even they relapse in later stages. Cavenee and his team stumbled upon the first clue that the tumor's genetic diversity could play a role in this process when they observed that most tumor cells exhibited higher numbers of the "regular" inactive wild-type EGFR, but only a few had the mutant EGFR. Upon injecting tumor cells with both wild-type and mutant EGFR in laboratory mice, they discovered that the most aggressive tumors were formed by injecting those cells in the same ratio found in patient samples, highlighting a biological advantage for having both types of cells in these proportions.

A stealthy cytokine

In a series of revealing experiments, Cavenee and colleagues discovered that the mutant EGFR influences the signal transduction and transcription (STAT) pathway producing interleukin 6 (IL-6), a cytokine that stealthily activates the wild-type EGFR in the surrounding cells to enhance tumor growth. Therefore, the higher numbers of the inactive wild-type EGFR on glioblastoma cells increases the cell's chances of being activated by this paracrine loop and helps grow the tumor further. As the tumor continues growing, the proportion of the mutant and wild-type EGFR cells remain the same.

The most significant part of the research—EGFR inhibitor resistance happens by a reversible cellular mechanism. Within 72 hours of drug withdrawal in animal models, these brain tumors were once again sensitive to EGFR inhibitors. Hence, the tumor exhibits a plastic response to the drug, driving a population shift toward having more cells without the target soon after treatment and rebounding to have more of the target after therapy is withdrawn, a finding with direct medical significance to resensitize tumors to therapy.

Cavenee's ideal treatment strategy to tackle the cancer's now-on now-off genetic flickering is to hit the tumor hard and early with a bolus dose, then give it a therapeutic "holiday" and hit the tumor again as it reappears. "These kinds of heterogeneous processes that the tumor cells have dreamed up are actually impediments to the application of therapies," he stated. "There are implications for tumor biology, but there are also going to be implications of how we design therapeutic trials using these kinds of agents."

– By Parvathy Hariharan

Administration

Greetings from **Richard Champlin, MD,** *ad interim* division head

When Dr. Waun Ki Hong retired from his post as division head of Cancer Medicine in August 2014, he left us in excellent shape. Our job now is to keep up the high standards he established and to build upon this success. I accepted the appointment to serve as ad interim division head while our institutional leaders conduct an extensive search for the next Cancer Medicine leader.

Our employees and faculty are giving significant input as MD Anderson prepares to respond to the tremendous opportunities and challenges that lie ahead—largely the seismic shift in health care delivery due to the Affordable Care Act, which brings about reimbursement changes, and coincides with a federally mandated technological overhaul of how we record and share patient health information. This is all happening as we deal with a decreasing amount of federal funding support, prompting leadership to find ways to advance our standard of care in a cost-effective manner.

The institution is launching a new strategic plan to address the major issues facing the institution. Along with others in Cancer Medicine, I will be involved in several institutional committees to improve patient access to clinical services, to optimally support our faculty and staff who care for those patients, and to optimize scientific research. We are involved in the planning for the March 2016 go-live with the electronic health record system EPIC, and we are trying to develop systems that will financially sustain our programs—which means seeing more patients and thinking about ways we can change operations to optimize cost-effectiveness.

Smart ways to be cost-effective

We will be focused on how to improve our cost effectiveness, to do more with less, as we move forward, and I believe there are some smart ways we can organize to do that. One of the first things is to optimally work with midlevel providers who can help our oncologists see more patients, while maintaining protected time for research, teaching and other academic pursuits. This will ensure timely care for people who want to come to MD Anderson. We also need to work with the MD Anderson Network to optimally incorporate our Regional Care Centers into the missions of the division and the institution. We need to continue developing team science approaches to tackling cancer problems in liquid malignancies and solid tumors. We need to continue to pursue SPORE and other NIH grants, philanthropic donations, and Moon Shot awards to support investigator initiated basic, clinical, and translational research.

We're happy that our T-32 grant, which supports the academic training of medical oncology fellows, has gotten the highest score in its competitive renewal. The current grant supports six trainees, but we've asked for funding for two more, and we're hoping for some good news this spring. As part of our responsibility to perform research, Cancer Medicine is strongly urging our fellows to develop projects that excite them and make a major impact in medical oncology, working with their mentors to apply for young investigator grants from organizations such as the American Society of Clinical Oncology and the American Association for Cancer Research.

The mentorship and career development of our fellows and junior faculty is a major priority of the Division of Cancer Medicine. We want to develop more consistent, structured programs to assure their success, and I'll be relying heavily on our department chairs and senior members of the faculty to participate in mentorship efforts.

There is a lot of work to do, and we can do it as a team.

From the Chair: Breast Medical Oncology

Debu Tripathy, MD

What an exciting time to join MD Anderson as the institution continues to lead transformative changes in oncology clinical care and research. Upon accepting the offer to move here from the Norris Comprehensive Cancer Center at the University of Southern California, I was eager to come and work with a team that was already accomplished and internationally respected. My official first day was Aug. 29, 2014, but I appeared on campus several times before that to give a lecture on my own research of novel therapeutics in breast cancer, to meet with departmental faculty to hear from them about their individual needs and challenges, and to find out what they identify as strengths and weaknesses of the department. Following those discussions, I shared with them what I envisioned as key priorities for the coming years.

Recruiting for growth

I believe recruiting more clinical faculty tops the list of immediate needs following the departures of senior medical oncologists. Four new physicians have joined us in the last six months, but more are needed to continue our excellent level of care for our patients, and grow our practice. We are considering recruiting more basic scientists and physician-scientists, and evaluating our portfolio of clinical trials to ensure that we have a robust selection that reflects the best science and the needs of our patients.

Several junior faculty members have expressed to me their desire for help with developing their academic focus. We are developing strategies to allow them to best succeed—whether that means more protected time, introductions to collaborators who can help them get their projects off the ground, or identifying more funding opportunities for their research. I'd like to see us increase videoconferencing to make sure our doctors working at the regional care centers have every opportunity to communicate with us at the Texas Medical Center campus, and we will want to ramp up educational efforts with clinical and research fellows.

Re-examining for empowerment

In the past few months, employees have shared with me their desire to be more empowered to get their work done. This may mean examining where the bottlenecks are that slow them down, redistributing work assignments, more training, or improving processes that will allow their faculty to take action quicker, thus enabling them to get things accomplished more quickly. I'm working with our departmental managers to move on these concerns because it's really just about identifying issues of communication, support, and resources for everybody to accomplish the job they need to do. I'm a big believer in empowerment and accountability.

In September, the institution introduced a new strategic plan that puts attention on the people we serve, the people who serve, science that enables, systems that support, and sustainability. In our department, we've embarked upon our own strategic plan that uses MD Anderson's as a blueprint but gets down to some specific issues that we need to accomplish for ourselves. Among them is a re-examination of current job descriptions under which our employees work, and with help from Human Resources, we will make changes to some roles to make sure that employees are rightly titled based on experience and skill while leaving room for them to improve professionally through career advancement.

Another key to our future success will be adequate preparation for the institution's transition to the Epic electronic health record. This technological change coming in 2016 is going to require a learning curve, and it may cause some inefficiencies at first, but the end result will benefit our mission to serve patients better. Epic is highly customizable so we can we can really adapt it to the way we take care of our patients. Employees and faculty are giving input in the planning of this new interface. We're investing this time to determine our data fields, input definitions, and protocol requirements. Epic will ultimately help us to organize patient flow, determine how information is gathered, how treatment plans are articulated in the electronic medical record, and allow us to build smart forms that accommodate next solutions in treatment plans based on previous inputs from a high volume of similar cases. Not only will it eventually save personnel time in inputting data, but patients will appreciate it, too, because certain pertinent data that we ask them to provide will only be requested of them once. All of their information will be stored in our database, and when any member of their multidisciplinary team sees them, everything about that patient is laid out in front of them and should make their evaluation go much more smoothly.

Personalizing care - not just on genomics

Additionally, as our research and clinical specialists continue to focus on developing the best personalized medicine based on genetic discoveries, we also want to think more about personalizing medicine based on what we know about the patient as an individual—who they are as people, how they make decisions, who is more likely to take treatment with side effects for only a small amount of improvement in their chances of recurrence, and how do they trade off one treatment versus side effects? Not only do we want to personalize therapy from a molecular and genetic aspect, but we also want to do it on a much more human level to make sure we're meeting each of our patient's needs. That's what I call a truly personalized program.

DoCMessages

THE UNIVERSITY OF TEXAS
MD Anderson Cancer Center
Making Cancer History®

DoCMessages is a publication of MD Anderson's Division of Cancer Medicine.

Ad interim Head, Division of Cancer Medicine	Richard Champlin, MD
Deputy Division Head for Clinical and Educational Affairs	Robert Wolff, MD
Deputy Division Head for Research	Elizabeth Grimm, PhD
Deputy Division Head for Global Oncology	Merrill Kies, MD
Executive Director and Division Administrator	Wendy Austin, RN, MS, AOCN, NEA-BC, FACHE
Director, Cancer Medicine Administration	Candace Baer, MHA, FACHE
Associate Director, Information Services	Mark Choate, MBA
Director, Research Planning & Development	Suzanne Davis, MBA, MMS
Associate Director, Graduate Medical Education Program	Catherine Butler-Gunn, JD
Manager, Technical Writing and Publications	Claire Blondeau, MBA, RHIA
Program Manager, Division Publications	Maxsane Mitchell, BS
Sr. Technical Writer	Parvathy Hariharan, MS
Graphic Design & Photography	Medical Graphics & Photography

Toot your horn

Have you won an award this year? Earned a degree or certification? How about a notable professional achievement? We want to hear about it! Send an email to docmessages@mdanderson.org.

@CancerMedMDA