THE UNIVERSITY OF TEXAS MD ANDERSON CANCER CENTER

Melanoma HORIZONS

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

ISSUE 22

AUGUST 2016

Introducing Advanced Scholar Jennifer McQuade, M.D.

Jennifer Leigh McQuade, M.D., joined the Department of Melanoma Medical Oncology as an Advanced Scholar in July 2016, bringing with her a string of research awards, her trademark zest for exploring new learning opportunities, and an intriguingly varied educational background here and overseas.

Dr. McQuade accepts award from Dr. Robert Wolff *(Photo: Barry Smith)*

The Division of Cancer Medicine's Advanced Scholar Program provides a 1-year instructor position for select Hematology and Medical Oncology Fellowship graduates who wish to continue the research efforts they began during their fellowship, improving their ability to launch successful academic careers.

During her fellowship, Dr. McQuade received many awards for the high quality of the research findings she presented at major oncology conferences, including the American Society of Clinical Oncology and the American Association for Cancer Research Annual Meetings. On June 16, Dr. McQuade and **Sangeeta Goswami, M.D., Ph.D.**, accepted the Waun Ki Hong Award for Achievement in Basic Science Research from **Dr. Robert Wolff**, deputy division head of clinical and educational affairs and Hematology/Oncology Fellowship Program director, at the Division's 2016 Fellows Award Ceremony.

Additionally, together with Melanoma Medical Oncology Instructor **Guo Chen, Ph.D.**, Dr. McQuade was co-first author of a research article published in JAMA Oncology entitled "Clinical, Molecular, and Immune Analysis of Dabrafenib-Trametinib Combination Treatment for BRAF Inhibitor-Refractory Metastatic Melanoma: A Phase 2 Clinical Trial" (April 2016.) Melanoma Department Deputy Chair and Associate Professor **Michael A. Davies, M.D., Ph.D.**, was senior author.

Dr. McQuade, who received her medical degree from Baylor College of Medicine, completed her internship and residency at the University of Pennsylvania before starting her fellowship at MD Anderson in July 2013. She also holds a master's degree in Traditional Chinese Medicine, and is a licensed acupuncturist.

Dr. McQuade has been conducting research with MD Anderson's Integrative Medicine Program for over 12 years, including a year spent as a Fulbright Fellow in Shanghai, China, studying the integration of traditional Chinese medicine and conventional cancer care. She continues to conduct research in this field, specifically acupuncture for symptom control.

However, upon beginning her fellowship at MD Anderson, she became interested in how lifestyle factors might influence outcomes in cancer patients, specifically the impact of obesity in melanoma.

"Obesity has been linked to increased risk of many cancers, including breast, endometrial, colon, and pancreatic cancers, and is also associated with increased risk of recurrence and worse survival in many early stage cancers," Dr. McQuade notes. "In fact, obesity is now poised to overtake smoking as the leading preventable cause of cancer. There is limited evidence that obesity may increase the risk of melanoma in men, but not in women; however, the impact of obesity on outcomes in patients with melanoma has never been studied."

Dr. Davies and colleagues have previously shown that one of the ways that metastatic melanoma becomes resistant to targeted therapy is by overexpression of the insulin-like growth factor 1 receptor (IGF-1R), which then activates a signaling pathway called the PI3K-AKT pathway. IGF-1R is activated by insulin and insulin-like growth factor 1(IGF-1).

Circulating insulin and IGF-1 are increased in obesity, even in the absence of diabetes, and subsequent activation of the PI3K pathway is one of the key mechanisms in the link between cancer and obesity in other malignancies. Drs. McQuade and Davies thus hypothesized that obesity would increase melanoma tumor growth through the PI3K pathway and cause resistance to targeted therapy.

To test this, Dr. McQuade used a mouse model of obesity in which mice are fed a 60% high-fat diet and melanoma cells are then injected subcutaneously. She showed that melanoma tumors grow more rapidly in these obese mice compared to normal-weight mice and at 14 days are nearly twice the size. She confirmed that these mice have high IGF-1 and insulin resistance and that the PI3K pathway is activated in the tumors.

In collaboration with the Novartis pharmaceutical company, Dr. McQuade also analyzed a group of 599 patients treated on the randomized clinical trials of the targeted therapy combination of dabrafenib and trametinib in melanoma and examined the association of body mass index with outcomes in these patients. Contrary to her hypothesis, obese patients had significantly *improved* outcomes with this therapy. Dr. McQuade presented this surprising result at the 2016 ASCO Annual Meeting, where it received great interest. She is currently working to understand the biological reason underlying this observed association.

'Torrent of innovation' cascades into upbeat ASCO 2016

ASCO Annual '16 Meeting

MD Anderson Melanoma Medical Oncology Department clinical faculty members' research was plentifully represented in posters, oral presentations, and related coverage of new study findings at the American Society of Clinical Oncology 2016 (ASCO16) Annual Meeting, June 3-7, 2016 in Chicago.

Our oncologists were among an estimated 35,000 cancer specialists, industry representatives and patient advocates who attended the world's largest cancer conference to learn and share the newest information, based on data from over 5,000 studies.

"The personalization of cancer treatments is leading to better outcomes for patients," The Economist headlined a June 4 story on the meeting. It described how a "torrent of innovation" in recent years, including new immunotherapy drugs used in melanoma, was proving so effective in patients, it was reinvigorating the study of cancer. The story was widely circulated on Twitter via The Economist's tweet, "Why oncologists at the annual #ASCO16 meeting will have a spring in their step."

Dr. Wen-Jen Hwu

A multi-site melanoma study whose abstract was coauthored by MD Anderson Medical Oncology Professor **Wen-Jen Hwu, M.D., Ph.D.**, was selected by ASCO officials for a press preview highlighting "five clinically important studies drawn from more than 5,200 abstracts" that would be part of ASCO's 52nd Annual Meeting. ASCO spokesman Dr. Don Dizon noted the melanoma presentation by principal investigator Dr. Caroline Robert of Institute Gustave-Roussy involved "long-term data – the longest to date, in fact – on anti-PD-1 therapy for melanoma."

"Cancer Drug Keytruda Keeps Some Patients Alive for 3 Years," NBC News headlined its May 18 story on the KEYNOTE-001 clinical study, involving 655 patients with advanced melanoma, which showed that "40 percent of the patients who have been taking the drug are still alive three years later." Dr. Hwu was MD Anderson site principal investigator and abstract coauthor. The Food and Drug Administration gave the anti-PD-1 drug, Keytruda (known generically as pembrolizumab), accelerated approval for melanoma in 2014.

Immunotherapy successes have been a running story at ASCO Annual Meetings and ensuing news reports in recent years as clinical trial study findings involving ipilimumab, pembrolizumab and nivolumab singly and in combination have unfolded and been reported.

Meanwhile, newly promising targeted therapy findings were reported at ASCO16 in an oral presentation by lead investigator Dr. Keith Flaherty of Massachusetts General Hospital Cancer Center and described in an ASCO Post video featuring MD Anderson Melanoma Department Deputy Chair **Michael A. Davies, M.D., Ph.D.** Dr. Tony Olszanski interviewed Dr. Davies as a coauthor of the abstract, "Genomic analysis and 3-yr efficacy and safety update of COMBI-d: A phase 3 study of dabrafenib (D) + trametinib (T) vs D monotherapy in patients (pts) with unresectable or metastatic BRAF V600E/K-mutant cutaneous melanoma."

Dr. Michael Davies

"Today we're going to present updated results from the clinical trial of patients with metastatic melanoma with a BRAF V600 mutation who were randomized to treatment with single-agent BRAF inhibitor therapy with the BRAF inhibitor dabrafenib, or combined treatment with dabrafenib and the FDA-approved MEK inhibitor trametinib," Dr. Davies said in the interview.

"One of the most important points is that, although we know that the targeted therapies can achieve very high response rates and high disease control rates initially when we treat patients with metastatic melanoma, there's always been a perception that it's not possible to achieve durable disease control and survival with these agents," Dr. Davies remarked.

"What's important about today's update is that we're now accumulating longer and longer follow-up, and particularly in this trial, in which all patients who are living have at least 3 years of follow-up for survival," he said. "The three-year overall survival rate with the dabrafenib-trametinib combination is 44%, which is actually very comparable to some of the other exciting results we've seen recently with immunotherapy. So I think this really dispels the notion that long-term survival is not feasible with targeted therapy approaches in this disease."

OncLive also covered the phase 3 COMBI-d study data, citing "impressive" 3-year overall survival (OS) and progression-free survival (PFS) findings from the combination treatment. The 3-year PFS rate with the combination was 22% versus 12% with single-agent dabrafenib, while the 3-year OS rate was 44% with the combination versus 32% with dabrafenib alone, OncLive reported.

Dr. Davies also was selected to present "Pathway Addition II: Are We Lost in Translation?" as a discussant in a Melanoma/Skin Cancers poster discussion session.

Targeted Oncology interviewed Melanoma Instructor **Jennifer McQuade, M.D**. (then a Cancer Medicine Division fellow), who presented her poster, "The impact of obesity on outcomes in metastatic melanoma (MM) patients (pts) treated with dabrafenib and trametinib" (senior author Dr. Davies) in the Melanoma/Skin Cancers poster session. Dr. McQuade was selected to receive a 2016 Conquer Cancer Foundation Annual Meeting Merit Award on the basis of her abstract's high quality.

The June 9 Targeted Oncology story noted that "contrary to investigators' expectations," her study found obesity was associated with increased PFS and OS in patients with metastatic melanoma who were treated with a combination of dabrafenib and trametinib.

"Although more work needs to be done, the findings support the so-called obesity paradox, in which obesity may, counterintuitively, be protective and associated with greater survival in certain groups of patients," Dr. McQuade commented in the story.

Targeted Oncology also singled out **Dr. Wen-Jen Hwu** for a June 9 story headlined "Combining BRAF Inhibition, Anti-PD-1 No Help in BRAF-Mutant Melanoma" in covering an ASCO abstract on which Dr. Hwu was senior author. Melanoma Medical Oncology Research Data Coordinator **Edelyn Barcena, B.S.**,

presented the poster, "Responses in patients with BRAF V600-mutant metastatic melanoma receiving anti-PD1/PDL1 therapy alone or combined with BRAF inhibitors" in the Melanoma/Skin Cancers poster session.

Their retrospective analysis showed that BRAF inhibitor-refractory patients gained no added benefit from anti-PD therapy in combination with BRAF inhibition, Targeted Oncology noted, as clinical findings were similar with either anti-PD alone or combined with BRAF inhibition in objective response rate, disease control rate and overall survival.

On June 15, Targeted Oncology reported on another study in which Dr. Hwu took part as site investigator in a story headlined "Pembrolizumab/Ipilimumab Combo is Safe in Advanced Melanoma." The phase 1b expansion cohort of the KEYNOTE-029 trial, whose results were presented by lead investigator Dr. Georgina Long of Melanoma Institute Australia, found that the combined regimen of pembrolizumab at the standard dose of 2 mg/kg and a reduced dose of 1 mg/kg ipilimumab was safe and effective for patients with advanced melanoma, Targeted Oncology reported.

"This combination has robust antitumor activity, as shown by a 57% overall response rate, a rate that was similar across key subgroups. Of the responding patients, 98% remained in response and 70% were progression-free at 6 months," Dr. Long was quoted as saying in the story. The median follow-up as of data cutoff March 17, 2016, was 10 months, and minimum follow-up was 6 months. A total of 72% of patients received all four ipilimumab doses. Moreover, pembrolizumab treatment was ongoing in about half the patients at data cutoff, Targeted Oncology reported.


Dr. Patrick Hwu

Patrick Hwu, M.D., Division of Cancer Medicine head and Melanoma Medical Oncology Department chair, presented "What are the Most Promising New Immunotherapy Strategies?" in the Pre-Annual Meeting Seminar, "How to Integrate Tumor Immunotherapy into Your Clinical Practice Seminar." Dr. Hwu also presented "Strategies for Delivering Adoptive T-Cell Therapy in Cancer" in an "Adoptive T-Cell Therapies for Cancer" Clinical Science Symposium.


Dr. Sapna P. Patel

Melanoma Medical Oncology Assistant Professor **Sapna Patel, M.D.**, presented "Systemic Therapy for Uveal Melanoma: Will Anything Work?" in a "Clinical Conundrums in Melanoma Therapy" education session. Melanoma Medical Oncology Advanced Practice Registered Nurse **Michelle Rohlfs** was the abstract lead author on a poster presented by senior author Dr. Patel, "BRAF with or without MEK inhibition plus PD-1 checkpoint blockade for the treatment of metastatic melanoma."

Additionally, Division of Cancer Medicine fellow **Andrew Shaw, M.D.** presented a poster, "Retrospective analysis of safety and efficacy of ipilimumab in elderly patients with advanced melanoma," on which Dr. Patel was senior author. Dr. Patel was also senior author of the poster discussion presentation, "A randomized phase 2 study of trametinib with or without GSK2141795 in patients with advanced uveal melanoma," which was presented by Alexander Noor Shoushtari, M.D., of Memorial Sloan Kettering Cancer Center.

Former MD Anderson Melanoma Medical Oncology research fellow **Dae Won Kim, M.D.**, now of Moffitt Cancer Center, presented a poster, "Pathological and clinical features of non-acral cutaneous melanoma (CM) patients (pts) with TP53 and BRAF Non-V600 (NonV600) mutations (muts)" based on work he did at MD Anderson; **Dr. Davies** was senior author.


Dr. Rodabe Amaria

Melanoma Medical Oncology Assistant Professor **Rodabe Amaria, M.D.**, presented a poster, "A phase I/II study of lymphodepletion plus adoptive cell transfer (ACT) with T cells transduced with CXCR2 and NGFR followed by high dose interleukin-2 (IL-2) in patients with metastatic melanoma (MM)," in the Trials in Progress Section.


Dr. Hussein Tawbi

Melanoma Medical Oncology Associate Professor **Hussein Tawbi, M.D., Ph.D.**, made an oral presentation, "Safety and efficacy of PD-1 blockade using pembrolizumab in patients with advanced soft tissue (STS) and bone sarcomas (BS): Results of SARCO28-A multicenter phase II study," based on his previous work at the University of Pittsburgh School of Medicine.

Dr. Alexander Menzies of Melanoma Institute Australia (coauthors **Drs Davies** and **McQuade**), presented a poster, "Anti-PD-1 therapy in patients with advanced melanoma and preexisting autoimmune disorders (AD) or major toxicity with ipilimumab (IPI)."

Dr. Paul Chapman of Memorial Sloan Kettering Cancer Center (coauthor **Dr. Patel**), presented a poster, "Safety data from an expanded access program (EAP) of nivolumab (NIVO) in combination with ipilimumab (IPI) in patients with advanced melanoma (MEL)."

Dr. Ryan Joseph Sullivan of Harvard Medical School (coauthor **Dr. Davies**), presented a poster, "Functional characterization of non-V600 BRAF mutations and their response to Trametinib (Tram)."

Dr. Jean-Jacques Grob of Aix Marseille University (senior author **Dr. Davies**), presented a poster, "Pooled analysis of safety over time and link between adverse events and efficacy across combination dabrafenib and trametinib (D+T) registration trials."


Dr. Adi Diab

Dr. Omid Hamid of The Angeles Clinic and Research Institute (coauthor Melanoma Assistant Professor **Adi Diab, M.D.**), presented a poster, "First in human (FIH) study of an OX40 agonist monoclonal antibody (mAb) PF-04518600 (PF-8600) in adult patients (pts) with select advanced solid tumors: preliminary safety and pharmacokinetic (PK)/pharmacodynamic results."

Dr. Michael B. Atkins of Georgetown-Lombardi Comprehensive Cancer Center (coauthor **Dr. Wen-Jen Hwu**), presented a poster discussion, "Pembrolizumab (pembro) plus ipilimumab (ipi) or pegylated interferon alfa-2b (PEG-IFN) for advanced melanoma or renal cell carcinoma (RCC)."

Clinical Trials in Melanoma Medical Oncology

For more information on these trials, call the toll-free AskMDAnderson number, 1-877-632-6789. The print version of this list was up to date as of our July 5, 2016 copy deadline. To see all the MD Anderson Melanoma Department clinical trials that are current at any given time, visit the MD Anderson Melanoma Medical Oncology department website and click on the Clinical Trials link.

Neoadjuvant

Neoadjuvant and Adjuvant Dabrafenib and Trametinib Compared to Upfront Surgery in Patients with Clinical Stage III or Oligometastatic Stage IV Melanoma (Combi-Neo) (2014-0409) (NCT02231775)

Principal Investigator: Jennifer Wargo, M.D.

Co-Principal Investigator: Rodabe Amaria, M.D.

The goal of this clinical research study is to compare receiving the combination of dabrafenib and trametinib before surgery to having surgery alone in patients with melanoma. The safety of the study drug combination will also be studied.

Neoadjuvant and Adjuvant Checkpoint Blockade in Patients with Clinical Stage III or Oligometastatic Stage IV Melanoma (2015-0041) (NCT02519322)

Principal Investigator: Rodabe Amaria, M.D.

The goal of this clinical research study is to learn if giving nivolumab alone or in combination with ipilimumab before and after surgery can help to control metastatic melanoma. The safety of these drugs will also be studied.

Adjuvant

A Phase III Randomized Trial Comparing High Dose Interferon to MK-3475 (Pembrolizumab) in Patients with High Risk Resected Melanoma (S1404) (NCT02506153)

Principal Investigator: Sapna P. Patel, M.D.

This randomized Phase III trial studies how well high-dose recombinant interferon alfa-2B works compared with pembrolizumab in treating patients with stage III-IV melanoma that has been removed by surgery but is likely to come back or spread. High-dose recombinant interferon alfa-2B may help shrink or slow the growth of melanoma. Monoclonal antibodies, such as pembrolizumab, may block tumor growth in different ways by targeting certain cells. It is not yet known whether high-dose recombinant interferon alfa-2B is more effective than pembrolizumab in treating patients with melanoma.

Chemotherapy-Naive Patients (no previous chemotherapy)

Phase II Study of Abraxane Plus Ipilimumab in Patients with Metastatic Melanoma (2011-1157) (NCT01827111)

Principal Investigator: Adi Diab, M.D.

The goal of this clinical research study is to learn if the combination of ipilimumab and ABI-007 (abraxane) can help to control metastatic melanoma. The safety of this drug combination will also be studied. Ipilimumab is designed to increase the immune system's ability to fight cancer. ABI-007 is designed to stop cancer cells from making new DNA (the genetic material of cells.) This may stop the cancer cells from dividing into new cells.

A Phase Ib, Open-label Study of the Safety and Pharmacology of MPDL3280A Administered in Combination with Vemurafenib in Patients with Previously Untreated BRAFV600-Mutation Positive Metastatic Melanoma (2012-0588) (NCT01656642)

Principal Investigator: Patrick Hwu, M.D.

The goal of this clinical research study is to find the highest tolerable dose of MPDL3280A that can be given in combination with vemurafenib (Zelboraf) to patients with locally advanced or metastatic melanoma that has a BRAF mutation. The safety of the drug combination will also be studied. MPDL3280A is designed to help the immune system recognize the tumors and may help stop their growth. Vemurafenib is designed to block the BRAF gene mutation. This mutation causes cancer cells to grow and multiply. By blocking this mutation, the drug may kill the cancer cells with the mutation and/or stop the tumor from growing.

Patients with Previous Chemotherapy

A Multi-Center Phase 2 Open-Label Study to Evaluate Safety and Efficacy in Subjects with Melanoma Metastatic to the Brain Treated with Nivolumab in Combination with Ipilimumab Followed by Nivolumab Monotherapy (2015-0696) (NCT02320058)

Principal Investigator: Hussein Tawbi, M.D., Ph.D.

The goal of this clinical research study is to learn about how treatment with the combination of Opdivo (nivolumab) and Yervoy (ipilimumab) may affect the disease that has spread to the brain. Researchers will also test if the drugs can control the disease outside the brain and the safety of the drugs.

A Phase I/II Study to Assess the Safety and Efficacy of Intratumoral IMO-2125 in Combination with Ipilimumab in Patients with Metastatic Melanoma (2015-0530) (NCT02644967)

Principal Investigator: Adi Diab, M.D.

The purpose of this clinical research study is to find the highest tolerated dose of the study drug IMO-2125 that can be given in combination with ipilimumab to patients with metastatic melanoma. Researchers also want to learn if the study drug combination can help to control the disease. The safety of the drug combination will also be studied.

A Phase 1/2, Open-Label, Multicenter, Dose Escalation and Dose Expansion Study of NKTR-214 in Subjects with Locally Advanced or Metastatic Solid Tumor Malignancies (2015-0573)

Principal Investigator: Adi Diab, M.D.

The goal of this clinical research study is to find the highest tolerable dose of the study drug NKTR-214 that can be given to patients with advanced or recurrent solid tumors. Researchers also want to learn if NKTR-214 can help to control the disease. This is the first study using NKTR-214 in humans.

Phase I/II Study of Dabrafenib, Trametinib, and Navitoclax in BRAF Mutant Melanoma and Other Solid Tumors (2014-0020) (NCT01989585)

Principal Investigator: Michael A. Davies, M.D., Ph.D.

The purpose of the second part of this study (Phase II) is to compare the good and bad effects of navitoclax in combination with dabrafenib and trametinib to using the usual approach of dabrafenib and trametinib in patients with BRAF-mutant melanoma. This study will allow the researchers to know whether this different approach is better, the same, or worse than the usual approach.

A Phase I, Open-Label, Dose Escalation Study of PF-04518600 in Patients with Locally Advanced or Metastatic Hepatocellular Carcinoma (HCC), Melanoma, Clear Cell Renal Cell Carcinoma (RCC) or Squamous Cell Head and Neck Cancer (SCCHN) (2014-0996) (NCT02315066)

Principal Investigator: Adi Diab, M.D.

The goal of this clinical research study is to find the highest tolerable dose of the study drug PF-04518600 that can be given to patients with advanced cancer. Researchers also want to learn more about the effects of the study drug. The safety of the drug will also be studied.

A Phase II Open-Label, Two-Arm Study of the MEK Inhibitor, Trametinib, to Investigate the Safety and Anti-Cancer Activity in Subjects with Melanoma with BRAF non-V600 Mutations (2014-0766) (NCT02296112)

Principal Investigator: Michael Davies, M.D., Ph.D.

Some types of melanoma have a kind of BRAF mutation called a BRAF V600 mutation. A drug called trametinib is FDA-approved and commercially available to treat these types of melanoma. The goal of this clinical research study is to learn if trametinib can help to control melanoma with a BRAF mutation that is not a BRAF V600 mutation. The safety of this drug will also be studied.

Phase II Study of MK-3475 in Conjunction with Lymphodepletion, TIL, and High or Low Dose IL-2 in Patients with Metastatic Melanoma (2014-0922) (NCT02500576)

Principal Investigator: Rodabe Amaria, M.D.

The goal of this clinical research study is to learn if pembrolizumab, an infusion of T-cells, chemotherapy (cyclophosphamide and fludarabine), and either high- or low-dose interleukin-2 (IL-2) can help to control metastatic melanoma. The safety of this drug combination will also be studied. T-cells are white blood cells in your body that are important to the immune system. The T-cells used in this study will be collected and grown in a separate study (MD Anderson Protocol 2004-0069.)

An Open-Label, Multicentre, Corollary Study of Pre-Operative Therapy with Dabrafenib and the Combination of Dabrafenib with Trametinib in Subjects with BRAF Mutation-Positive Metastatic Melanoma to the Brain (2012-0208) (NCT01978236)

Principal Investigator: Michael Davies, M.D., Ph.D.

The goal of this clinical research study is to learn how much of the study drugs dabrafenib and trametinib get into the brain tumor, any tumor(s) outside the brain, and the blood stream. This will be tested in patients who have melanoma that has spread to the brain. Researchers also want to learn if and how long dabrafenib and trametinib may be able to help control the disease. Lab research will be done that may benefit future patients.

An Open-Label, Multicenter, Dose-Escalation, Phase 1b/2 Study of the Safety, Efficacy, Pharmacodynamics, and Pharmacokinetics of RTA 408 in Combination with Ipilimumab in the Treatment of Patients with Unresectable or Metastatic Melanoma (2014-0613) (NCT02259231)

Principal Investigator: Sapna Patel, M.D.

The goal of Part 1 of this clinical research study is to find the highest tolerated dose of RTA 408 that can be given with ipilimumab to patients with unresectable or metastatic melanoma. The safety of this drug combination will also be studied. The goal of Part 2 of this study is to learn if giving RTA 408 with ipilimumab can help to control unresectable or metastatic melanoma.

Lymphodepletion Plus Adoptive Cell Transfer with TGF-beta Resistant (DNRII) and NGFR Transduced T-Cells Followed by High-Dose Interleukin-2 in Patients with Metastatic Melanoma (2012-0758) (NCT01955460)

Principal Investigator: Rodabe Amaria, M.D.

The goal of this clinical research study is to find the highest tolerable dose of T-cells injected with the genes TGFb-DNR and NGFR that can be given in combination with chemotherapy (cyclophosphamide and fludarabine) and aldesleukin to patients with metastatic melanoma.This study involves gene therapy. T-cells are types of white blood cells that help your body fight infections. They may recognize and kill melanoma cells. Researchers want to grow your T-cells in a laboratory, inject them with TGFb-DNR and NGFR genes which may help them recognize tumor cells, and then give them back to you by vein. This may help to control melanoma. Cyclophosphamide is designed to block cancer cells from dividing, which may slow or stop their growth and spread throughout the body. This may cause the cancer cells to die. Fludarabine is designed to interfere with the DNA (genetic material) of cancer cells, which may cause the cancer cells to die. Aldesleukin is designed to block the activity of cells that may decrease the immune system's ability to fight cancer.

A Phase I/II Study of Lymphodepletion Plus Adoptive Cell Transfer with T-Cells Transduced with CXCR2 and NGFR Followed by High-Dose Interleukin-2 in Patients with Metastatic Melanoma (2009-0471) (NCT01740557)

Principal Investigator: Rodabe Amaria, M.D.

The goal of this clinical research study is to learn the side effects of T-cells injected with CXCR2 and NGFR when given in combination with chemotherapy (cyclophosphamide and fludarabine) and aldesleukin to patients with metastatic melanoma in an attempt to allow them to better localize the tumor. The safety of this combination will also be studied.

BRF117277: A Phase II, Open-Label, Multicentre Study of Dabrafenib plus Trametinib in Subjects with BRAF Mutation-Positive Melanoma that Has Metastasized to the Brain (2013-1020) (NCT02039947)

Principal Investigator: Michael Davies, M.D., Ph.D.

The goal of this clinical research study is to learn if the combination of dabrafenib and trametinib can help to control BRAF V600 positive melanoma that has spread to the brain. The safety of the study drugs will also be studied.

T-Cells +/- Dendritic Cells (2004-0069) Phase II (NCT00338377)

Principal Investigator: Patrick Hwu, M.D.

In this study, T-cells capable of recognizing and killing melanoma will be isolated from tumor biopsies and expanded in the laboratory. The T-cells will then be reinfused into the patients with or without dendritic cells, which are immune cells capable of potently activating T-cells. This study is for patients with a good performance status, with measurable metastatic melanoma, and a site that can easily be biopsied.

A Phase Ib/II, Multicenter, Open Label, Study of LEE011 in Combination with MEK162 in Adult Patients with NRAS Mutant Melanoma (2013-0185) (NCT01781572)

Principal Investigator: Rodabe Amaria, M.D.

The goal of this clinical research study is to find the highest tolerable dose of LEE011 that can be given with MEK162.

Induction of antitumor response in melanoma patients using the antimicrobial peptide LL37 (2013-0422) (NCT02225366)

Principal Investigator: Rodabe Amaria, M.D.

The goal of this clinical research study is to find the appropriate dose of LL37 that can be given to patients with melanoma. Researchers also want to learn if LL37 can stimulate the immune system to help control the disease.

Phase II Study of Cellular Adoptive Immunotherapy Using Autologous CD8+ Antigen-Specific T Cells and Anti-CTLA4 for Patients with Metastatic Melanoma (2012-1055) (NCT02027935)

Principal Investigator: Cassian Yee, M.D.

The goal of this clinical research study is to learn about the safety of giving CD8+ T cells with ipilimumab, cyclophosphamide, and IL-2 (aldesleukin). Researchers also want to learn if this combination can help to control metastatic melanoma.

A Phase 1/2 Dose Escalation and Cohort Expansion Study of the Safety and Tolerability of Urelumab Administered in Combination with Nivolumab in Advanced/Metastatic Solid Tumors and B Cell Non-Hodgkins Lymphoma (2014-0651) (NCT02253992)

Principal Investigator: Vali Dimitrakopoulou, M.D.

Co-Principal Investigator: Adi Diab, M.D.

The goal of Part 1 of this study is to find the highest tolerable dose of urelumab and nivolumab when given in combination to patients with advanced solid tumors or B-cell NHL. The goal of Part 2 is to learn if the dose found in Part 1 can help to control melanoma, NSCLC, SCCHN, and/or DLBCL. The safety of this drug combination will be studied in both parts of the study. The goal of this part of the study (called "Continuation of Therapy") is to continue to study the effects of the study drug after the disease has appeared to get worse.

Patients with Uveal Melanoma

A Phase 2 Study of CDX-011 (Glembatumumab Vedotin) for Metastatic Uveal Melanoma (NCI9855) (NCT02363283)

Principal Investigator: Sapna P. Patel, M.D.

The primary objective of this study is to characterize the clinical anti-tumor activity of CDX-011 (glembatumumab vedotin) as a single agent in the treatment of patients with metastatic uveal melanoma. Secondary objectives include a description of the clinical safety and benefit of CDX-011 and pharmacodynamics changes in glycoprotein NMB (GPNMB) expression. Exploratory objectives include characterization of the anti-tumor immunophenotype of patients receiving treatment. Post hoc, correlation of rash with clinical benefit, or lack of rash with lack of benefit, will also be explored.

Phase II Study of Nivolumab in Combination with Ipilimumab for Uveal Melanoma (2011-0919) (NCT01585194)

Principal Investigator: Sapna P. Patel, M.D.

The goal of this clinical research study is to learn if ipilimumab and nivolumab can help to control uveal melanoma. Ipilimumab is designed to increase the immune system's ability to fight cancer. Nivolumab is an antibody (a protein that attacks foreign cells) that is designed to allow the body's immune system to work against tumor cells.

A participant's perspective of world's biggest cancer conference

By Jennifer McQuade, M.D.

Every June, the entire oncology community comes together in Chicago to hear about the latest blockbuster clinical research, present their own studies, and network with other physicians and scientists at the American Society of Cancer Oncology (ASCO) Annual Meeting, the largest clinical oncology conference in the world.

Last year at ASCO, I was honored to receive an ASCO/Conquer Cancer Foundation Young Investigator Award for my project examining the impact of energy balance and obesity on outcomes in melanoma. This 1-year grant has funded my research over the past year.

This year, I received a Merit Award to cover my travel to ASCO to present initial findings from this work. My presentation was of our analysis of the association of body mass index with outcomes in patients with BRAF-mutant metastatic melanoma treated with the FDA-approved targeted therapy combination, dabrafenib and trametinib. Contrary to our hypothesis, we found that obesity was associated with *improved* outcomes in this population!

I presented this work at the Melanoma/Skin Cancer poster session, in which about 100 posters were presented. This is a great forum for really engaging with the other attendees. Physicians and scientists working on melanoma, pharmaceutical companies engaged in this space, patient advocates, and the press all walk through the poster session, usually scanning the titles and stopping at those that interest them. Given how unexpected our findings were, people were very interested in my project, and I stayed engaged in presenting our work and speculating about the reasons for our surprising findings for the entire 3-hour session.

My mentor, **Dr. Michael Davies**, introduced me and my work to some of the senior researchers in the field, and we gained some potential new collaborators. I was even interviewed, and a lengthy article on my work was published online by Targeted Oncology June 9.

The only downside to this experience was that I missed seeing the posters of my colleagues, who I understand were equally busy. There was an MD Anderson author on at least 1 of every 10 posters in the Melanoma session!

MD Anderson Melanoma Medical Oncology researchers were also well represented at the oral session, which showcases the major prospective clinical trials. **Dr. Wen-Jen Hwu** was the MD Anderson site lead on two major immunotherapy trials, and **Dr. Michael Davies** was the MD Anderson site lead on a major targeted therapy trial. These sessions highlighted how dramatically the prognosis of metastatic melanoma has shifted, with the 3-year overall survival in the updated dabrafenib and trametinib targeted therapy study and the pembrolizumab immunotherapy study both reaching over 40%.

Dr. Sapna Patel was the senior author on a multi-institutional trial of a targeted therapy combination in uveal melanoma. Although the trial was negative, importantly, there were integrated biopsies which will allow her team to interrogate the mechanisms of resistance to therapy and work towards better therapeutic options for this disease. Dr. Patel also led an educational session reviewing systemic therapy in uveal melanoma. Our division chief, **Dr. Patrick Hwu**, was also recognized as a pioneer in immunotherapy with an invited talk on adoptive T-cell therapy.

Overall, ASCO 2016 was a great experience, and left me with many new ideas and new connections to pursue.

Melanoma Chair a key contributor to Cancer Moonshot Summit

Cancer Medicine Division Head and Melanoma Department Chair **Patrick Hwu, M.D.**, was a key contributor to the national conversation when MD Anderson joined institutions across the country that participated in the inaugural national Cancer Moonshot Summit on June 29.

Convened at the request of Vice President Joe Biden, the summit united the entire cancer community - patients, survivors, researchers, physicians, advocates, philanthropists, data and tech experts - under the national charge to brainstorm ways to double the rate of progress toward a cure.

MD Anderson's event featured an introduction from President **Ronald DePinho, M.D.**; live-streamed remarks from Biden from Howard University; and a panel discussion featuring Dr. Hwu and other cancer experts, leaders, and survivors. Participants were asked to share their ideas for enhancing collaboration, which will be submitted to the national Cancer Moonshot for consideration.

"It's an exciting time right now in cancer research," Dr. Hwu said, noting that "every patient wants to be here 10 years from now. The question is, in everything we do, how can we get more patients onto that curve?" Getting and sharing patient data is "critical," he said.

"We've made huge progress in melanoma therapy over the last few years, but we have a long way to go. What we really need to know is what's going on inside that tumor on a molecular level and to do that, tumor samples are required from the onset of treatment" he said. "Acquiring and sharing data is vital to getting everybody into what I call our 10-year club. MD Anderson has worked very hard to move these programs forward."

Dr. Hwu also emphasized the importance of MD Anderson sharing information with its network partner hospitals, the broader cancer community, and beyond in order to enhance understanding, overcome barriers to creative new solutions, and expedite research. "We need to do things to try to get the message out," he said. "When we make a change in our therapeutics, we could make a huge difference in the field, and others should implement this quickly."

"We need to strive to make progress, to take the drugs that we know and do a better job with new drug combinations, and get these therapies out there to the cancer community," he urged.

Updated information about MD Anderson's Moon Shots Program, as well as the national Cancer Moonshot, will appear in the next issue of Melanoma Horizons.

Awards and honors

Melanoma Medical Oncology postdoctoral fellow **Jodi A. McKenzie, Ph.D.**, won the Bayer HealthCare Pharmaceuticals Inc. Award in Translational Research for her oral presentation in that category at MD Anderson's 2016 Trainee Research Day, May 16.

Dr. McKenzie and Melanoma Instructor **Cara Haymaker, Ph.D.**, won awards at the Second Annual Immuno-Oncology Young Investigators' Forum, March 10-13, 2016 in Houston. Dr. McKenzie won 1st place in the fellows' basic science research category for her oral presentation, while Dr. Haymaker received 3rd place in the junior faculty clinical category for her presentation.

Melanoma Medical Oncology Professor **Elizabeth A. Grimm, Ph.D.**, accepted the 2016 MD Anderson President's Leadership Award for Advancing Women Faculty on March 24.

Melanoma Medical Oncology Senior Research Nurse **Srisuda (Mou) Lecagoonporn** received the Clinical Research Nurse Excellence Award from the MD Anderson Clinical Research Nurse Committee on June 22.

Melanoma research on stage at AACR 2016

In addition to ASCO 2016, MD Anderson melanoma research was extensively represented at the American Association for Cancer Research Annual Meeting, April 16-20 in New Orleans, where about 19,000 scientists, clinicians, advocates and others gathered to discover and discuss advances in the field.

Scientific Program opening and closing remarks were presented by Cancer Immunology Working Group Chairperson-elect **Patrick Hwu, M.D.**, MD Anderson Melanoma Department chair and Cancer Medicine Division head, in a town hall meeting focusing on the impact of the microbiome on the immune system and tumor development.

Dr. Cassian Yee

Melanoma Professor **Cassian Yee, M.D.**, presented "Adoptive T-cell therapy: personalized therapy for common cancers," in a Methods Workshop session. Melanoma Research Instructor **Sun-Hee Kim, Ph.D.**, presented a poster, "Microsomal PGE2 synthase-1 regulates melanoma cell survival and associates with melanoma disease progression" (senior author Melanoma Professor **Elizabeth Grimm, Ph.D.**)

Dr. Sun-Hee Kim

Melanoma Instructor **Jennifer McQuade, M.D.**, then a Cancer Medicine Division fellow, made the oral presentation, "A phase II trial of high-dose Interleukin-2 (HDIL-2) with recombinant MAGE-A3 protein combined with adjuvant system AS15 in patients with unresectable or metastatic melanoma" (senior author Melanoma Professor **Wen-Jen Hwu, M.D., Ph.D.**) in a minisymposium. Dr. McQuade, who was mentored and recommended by **Dr. Wen-Jen Hwu**, was selected for an AACR/Women in Cancer Research Scholar Award based on the exceptional quality and significance of her abstract.

Melanoma postdoctoral fellow **Zhe Wang, Ph.D.**, presented a poster, "Systems-level interrogation of resistance mechanisms to immunotherapy through pooled shRNA screens" (senior author **Patrick Hwu, M.D.**) Melanoma Instructor **Manisha Singh, Ph.D.**, presented a poster, "Induction of systemic immunity through single-site intratumoral CD40 activation and checkpoint blockade eradicates melanoma in the brain" (senior author **Willem Overwijk, Ph.D.**)

Surgical Oncology postdoctoral fellow **Alexandre Reuben, Ph.D.**, presented a poster, "Genomic and immune heterogeneity in synchronous melanoma metastases is associated with differential tumor growth and response to therapy," (senior author Surgical Oncology Associate Professor **Jennifer Wargo, M.D.**) Melanoma postdoctoral fellow **Jodi McKenzie, Ph.D.**, presented the poster, "Enhancing the tumor efficacy of immunotherapy by using the topoisomerase I inhibitor MM398," (senior author **Patrick Hwu, M.D.**)

Melanoma Research Assistant II **Leila Williams, M.S.**, presented the poster, "Identification of novel targeted and immunotherapy combinations by a high throughput assay of T cell-mediated cytoxicity," (senior author **Patrick Hwu, M.D.**) Pathology Instructor **Nitin Chakravarti, Ph.D.**, presented the poster, "Differential expression of the melanoma inhibitor of apoptosis protein (ML-IAP)/Livin in patients with ulcerated and non-ulcerated melanomas," (senior author Pathology Chair **Victor Prieto, M.D., Ph.D.**)

Melanoma graduate research assistant **Rina Mbofung, B.S.**, made the oral presentation, "Inhibition of HSP90 enhances T cell-mediated antitumor immune responses through expression of interferon-alpha response genes" (senior author **Patrick Hwu, M.D.**), in a minisymposium. Ms. Mbofung was selected to receive the AACR-Aflac Inc. Scholar-in-Training Award based on the high quality of her abstract. Melanoma Assistant Professor **Weiyi Peng, M.D., Ph.D.,** made the oral presentation, "Loss of PTEN promotes resistance to T cell-mediated immunotherapy" (senior authors **Patrick Hwu, M.D.**, and **Michael Davies, M.D., Ph.D.**) in a minisymposium.

Melanoma Assistant Professor **Jason Roszik, Ph.D., M.B.A.**, (Translational Molecular Pathology Assistant Professor **Lawrence Kwong, Ph.D.**, senior author), presented the poster, "Somatic copy number alterations at oncogenic loci show diverse correlations with gene expression."

Melanoma Philanthropic Funding

Special appreciation is extended to the following donors, who were reported by MD Anderson's Development Office as among those recently contributing $1,000 or more:

Mr. and Mrs. Mark W. Albers
Anonymous
Mr. Joseph E. Batson, Jr.
Howard and Wendy Berk
Mr. and Mrs. G. Alex Bernhardt, Sr.
Bernhardt Design
Blue Grass Community Foundation
Mr. and Mrs. Jay B. Boudreaux
Mr. and Mrs. Don J. Brown
The Andy Caress Melanoma Foundation
ClubCorp, Inc.
Mr. and Mrs. Bernard L. Cohn
Concierge Services of Atlanta, Inc.
Mrs. Mary Lynn Talbot-Davidson and Mr. William F. Davidson
Mr. Benno J. Deltz
Mr. and Mrs. Richard Parr Doss, Jr.
Mr. and Mrs. John Erskine
Mr. and Mrs. Richard T. Farmer
The Farmer Family Foundation
Leland Fikes Foundation
Mr. and Mrs. Mel Flamenbaum
Mr. and Mrs. Jerry W. Freeman, Jr.
Mr. and Mrs. Robert C. Froman
The Robert and Lynne Grossman Family Foundation
Mr. and Mrs. Michael Gunter
Ms. Karla Hertzog
Catherine H. Jacobus
Mr. and Mrs. Michael S. Juden
Mr. Barry R. Kessler
Ms. Jane C. Kingsbury
Mr. and Mrs. Bob Ladd
Dr. and Mrs. Charles A. LeMaistre
Charles and Margaret Levin Family Foundation
Linn Energy
Mr. and Mrs. Jeff B. Love
The Jeff B. and Katherine B. Love Foundation
Peggy and Lowry Mays
Mays Family Foundation
Ms. Penny Morriss
Miriam and Jim Mulva
Mr. and Mrs. Rudolph K. Olson
Dr. Carl Plager
Plano Land Trust Corporation
Jack Robertson and Joanne Havner
Mr. and Mrs. James M. Roe
Mr. and Mrs. Leo R. Schuster, Jr.
Scripps Howard Foundation
Mr. and Mrs. Mel A. Shaftel
Mr. and Mrs. Cory Slagle
Mr. and Mrs. R. John Stanton, Jr.
Swalwell-Connor Family Foundation Inc.
Mrs. Juanita E. Sword
Mr. and Mrs. Steven H. Wasserman
Mr. and Mrs. Joe K. Wright

Gifts fuel MD Anderson melanoma mission: To donate by mail to our melanoma research efforts, please send a check made out to "MD Anderson Cancer Center" specifying "Melanoma Vaccines" in the memo line to Dr. Patrick Hwu, Chair, Melanoma Medical Oncology Department, 1515 Holcombe Blvd., unit 430, Houston TX 77030. Thank you!

The University of Texas
MD Anderson Cancer Center
Melanoma HORIZONS

EDITOR
Leslie Loddeke, B.J.
Publications Coordinator,
Melanoma Medical Oncology

EDITORIAL ADVISER
Michael A. Davies, M.D., Ph.D.
Deputy Chair and Associate Professor,
Melanoma Medical Oncology

DESIGN
Limb Design, Houston, TX

Email: Melanoma@mdanderson.org

The University of Texas
MD Anderson Cancer Center
Department of Melanoma
Medical Oncology
1515 Holcombe Blvd., unit 430
Houston, TX 77030

ADDRESS SERVICE REQUESTED

Non-Profit Org.
U.S. Postage
PAID
Houston, TX
Permit No. 7052

Managing 'the New Melanoma Landscape'

"The Art and Science of Managing the New Melanoma Landscape: A Case-Based Multidisciplinary Approach," an MD Anderson continuing medical education conference, will take place Sept. 16-17, 2016 at the Houston Marriott Medical Center. Cancer Medicine Head and Melanoma Department Chair **Patrick Hwu, M.D.**, Surgical Oncology Professor **Merrick Ross, M.D.**, and Melanoma Department Deputy Chair **Michael Davies, M.D., Ph.D.**, are conference co-chairs.

Besides these three faculty, MD Anderson speakers and panelists will include Surgical Oncology Professor **Jeffrey Gershenwald, M.D.**; Surgical Oncology Professor **Richard Royal, M.D.**; Surgical Oncology Associate Professor **Jennifer Wargo, M.D.**; and Melanoma Medical Oncology Assistant Professor **Sapna Patel, M.D.** Guest speakers will include **Robert Andtbacka, M.D.**, of Huntsman Cancer Institute; **Michael Atkins, M.D.**, of Georgetown-Lombardi Comprehensive Cancer Center; and **Mario Sznol, M.D.**, of Yale Cancer Center.

The knowledge gained from this conference is expected to benefit medical oncologists, dermatologists, surgical oncologists, dermatopathologists, and all other health-care providers who manage patients with melanoma. Sessions will encompass initial management; current and emerging strategies of management of regional disease; managing metastatic melanoma with immunotherapy, targeted therapy and multidisciplinary care; coordination of care and managing toxicities. To register and obtain more information, visit the MD Anderson Conferences website page and scroll down to the conference title, or phone 713-792-2223 or toll-free at 866-849-5866.

'Great Day' forecast for Walk with Deborah Duncan

A fine forecast for Saturday, Sept. 17, would seem to be a foregone conclusion when delightful Deborah Duncan, host of KHOU-TV's morning talk show, "Great Day Houston," emcees the 2016 AIM for the CURE 5-K Melanoma Walk and Fun Run. Cancer Medicine Division Head and Melanoma Department Chair **Patrick Hwu, M.D.**, and AIM cofounder Jean Schlipmann will be guest speakers.

Each year, AIM at Melanoma Foundation partners with MD Anderson for this popular event, which not only raises funds for research aimed at improving melanoma treatment, but raises public awareness of the risks from exposure to ultraviolet radiation from the sun as well as from sunbeds. Last year, our evening walk, accompanied by an array of food and entertainment, attracted more than 1,400 participants and 210 volunteers, including our clinical professionals who provided 126 free skin cancer screening exams.

Registration sign-in starts at 6 p.m.; the opening ceremony begins at 7:15 p.m; and the walk/run kickoff will be at 8 p.m. Participants may register in advance on the AIM at Melanoma website at https://www.aimatmelanoma.org, and see the latest information on the event.

To Schedule an Appointment

Phone: 1-877-632-6789
MD Anderson website (https://www.mdanderson.org): Click "Request an Appointment"

Please "Follow Us" on Facebook and Twitter

http://www.facebook.com/MDAMelanomaMedicalOncology

http://www.twitter.com/MDAMelanomaOnc