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THE CAMPAIGN for UW MEDICINE

November 20, 2017

Dear Friends of Merkel cell carcinoma Research,

As we enter the season of festivity and celebration, all of us at UW Medicine would like to express our gratitude for your support of our Merkel cell carcinoma program. This letter brings you the latest developments in MCC research and treatment, many of which were made possible through your generosity.

FDA APPROVES FIRST DRUG FOR METASTATIC MCC

In March, 2017, the U.S. Food and Drug Administration approved the first drug for the treatment of Merkel cell carcinoma. This immunotherapy drug, avelumab (Bavencio), has shown impressive responses in patients who were previously expected to live just months after their cancer spread extensively. The patients who have responded to avelumab are seeing their cancers shrink or disappear, and some may be considered cured. This breakthrough in MCC research is a game changer for many patients. In fact, Douglas Lowy, M.D., Acting Head of the National Cancer Institute, used the approval of avelumab for MCC as an example of a major success in cancer research while addressing members of the US Congress in April, 2017.

Our lab was heavily involved in each stage of this success. Our early work on the important role of the immune response in helping patients survive MCC set the stage for immunotherapy as a treatment option. We also enrolled many patients in the clinical trials, and we advocated with drug companies and the FDA to push forward with these drugs.

12TH ANNUAL MERKEL CELL CARCINOMA DINNER

It was very special to celebrate this drug approval with our guests at our 12th annual Merkel cell carcinoma dinner on September 11th. We hosted 275 patients, family members, clinicians, scientists, and trainees from across the country. Attendees enjoyed a lovely buffet dinner, live music, lab tours, and a presentation on the status of MCC research and clinical trials, sponsored by generous patients and donors. Highlights of this evening can be found by visiting the news section of www.merkelcell.org.

A Program Project Grant

Our lab led the submission of a Program Project grant to the National Institutes of Health to support MCC research across six institutions. This 715-page grant was my biggest undertaking since graduating from medical school and represented a huge team effort. If funded, this grant will support two dozen scientists from six institutions to improve our ability to use the immune system to fight MCC.

Global Impact

Using several metrics, our Seattle MCC team has become the most prominent MCC research group in the world, as assessed by number of publications (over 60), how often those publications are 'cited' in the literature (over 3000 times), and by the global interest in our research. As the leader of the Seattle MCC research program, I am often asked to present our work at international meetings. This year, I presented news surrounding MCC and the advances made in the latest therapeutic trials at the 13th Congress of the European Association of Dermato-Oncology (EADO) in Athens, Greece and the 9th World Congress of Melanoma in Brisbane, Australia. I also delivered the keynote address at a symposium called “New

Frontiers in the Multidisciplinary Management of Merkel Cell Carcinoma", hosted by the University of Rochester in NY. It was thrilling to have an entire symposium focused on MCC and we were able to delve deeply into details as well as establish new collaborations.

OUR FUTURE GOALS

Although the approval of avelumab is a game changer for many patients with Merkel cell carcinoma, about half of patients do not respond to this drug. In the coming years, we plan to tackle the following projects, to improve the care of MCC patients:

Get more drugs approved (there are currently two others in the pipeline)

We are leading an ongoing trial of pembrolizumab (Keytruda) for patients with advanced MCC that has not previously been treated with chemotherapy. Based on our study published in the New England Journal of Medicine, pembrolizumab was recently listed as a treatment option for patients with metastatic MCC in the 2017 National Comprehensive Cancer Network guidelines. The NCCN publishes annual guidelines for managing cancer, including MCC, based on expert opinions from all major cancer centers in the United States. We hope that pembrolizumab may receive FDA approval in 2018.

We are working as part of the team leading studies of nivolumab for MCC that seems to work well by itself as well as together with another immune stimulating drug called ipilimumab. We have seen nivolumab eliminate the cancer in a few weeks so that the surgeon finds no cancer cells and only an immune battlefield, with the killer lymphocytes left behind as the victors. This 'neo-adjuvant' approach may be a new and effective way to treat MCC in the future.

Develop a test to predict which patients will respond to immunotherapy drugs

A major goal within our recently proposed grant is to be able to use a patient's tumor biopsy sample to predict which drug (or combination of drugs) should be given to maximize the chance of long-term control of their MCC. Although several tests we explored were not helpful, we have now identified an approach that uses computer-analyzed microscopic imaging that is showing significant promise. This approach will be tested on an additional group of patients to see how well it predicted who did and did not respond to pembrolizumab.

Create brand new treatments, such as vaccines which target a specific portion of the Merkel cell polyomavirus as well as a personalized vaccine for virus-negative MCC

Because 80% of all MCC tumors are driven by a virus, we hope to create a therapeutic vaccine which will target a specific portion of the virus that is required for the cancer to grow. For 20% of patients whose tumors are “virus negative” we may be able to generate personalized vaccines based on their cancer’s unique mutation signature, something that can now be determined in a couple weeks, for less than $2000. A custom vaccine could then be quickly made to try to teach the immune system to see the unique mutations present in the tumor but nowhere else in the patient's body.

Reprogram a patient’s own T cells to target multiple parts of the cancer, thereby increasing the likelihood of eliminating the tumor cells

We aim to provide patients who don’t have sufficiently effective or numerous killer T cells with a broader immune response by reprogramming their own T cells to target multiple parts of the cancer, thereby increasing the likelihood of eliminating the tumor cells.

OUR FRIEND, GREGG SCHIMMEL

This year, we established the Dr. Gregg Schimmel Fund for Merkel Cell Carcinoma Research Fellows to honor the memory of Dr. Gregg Schimmel. Gregg was a Merkel cell carcinoma patient advocate who touched the lives of many patients. He founded and led a MCC support group based in Seattle and believed that it was important to continue to help others through their cancer journey.

The Dr. Gregg Schimmel Fund for Merkel Cell Carcinoma Research Fellows supports young dermatologists who have graduated from medical school and completed their residency. Their role is to participate in research and respond to patients' questions, needs, and concerns throughout the difficult journey of diagnosis, referral to Seattle and treatment. Our extended team misses Gregg dearly and we are pleased to work with his wonderful family to honor his legacy through this fund.

PERSONAL UPDATES

2017 was also a great year for my family. I think many of you know that my wife, Stephanie Lee, is a hematologist at the University of Washington and Fred Hutchinson Cancer Research Center. She recently took on some new duties, so she's busier than ever. My older son, Alex, is a senior in high school, so we've been busy with college applications. My younger son, Max, made his violin debut at this year's Merkel cell carcinoma dinner and has a budding interest in cooking. We are eager to squeeze in as much family time as we can before Alex graduates, so we enjoyed our annual cruise to Alaska and we are headed to the Galapagos for a vacation in late December.

THANK YOU

My colleagues and I are grateful for your support of our work in Merkel cell carcinoma research. This is an amazing time to be working in MCC research, and we are optimistic that we will continue to make meaningful strides in the next few years. Please consider making a donation to our Merkel cell carcinoma effort and know that 100% of donations go directly to our MCC research and educational efforts and are fully tax deductible. Although the funds are directed to UW, they also support research at Fred Hutch and the high quality patient care/clinical trials at SCCA. Have a wonderful holiday season and a joyful new year.

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Photos from our 2017 MCC Dinner