

IMPACT REPORT

Saving Lives and Creating Hope Through Cancer Research

Presented to:

Desert Mountain CARE

August 2024

Your Generosity Improves, Extends and Saves Lives

Desert Mountain CARE (Cancer Awareness Research and Education) impacts the lives of countless patients with cancer and their loving families through your valued partnership with HonorHealth Foundation.

Your gifts totaling more than \$4 million over the years have funded world-class cancer research, giving our patients the most precious gift—time. Time for new discoveries, time with improved quality of life during treatment, time with family.

You enable our nonprofit, community-based healthcare system to provide compassionate, expert care, state-of-the-art facilities and leading-edge research to discover new cures and treatments to improve and save lives.

And for that, we thank you!



DESERT MOUNTAIN MEMBERS'

CARE



“I am incredibly grateful that you believe in our mission and give from the heart to help us advance the health and well-being of our community.”

—TODD LAPORTE
CEO

Making Great Care Possible is Only the Beginning!

2023-24

As we enter the final year of funding for the Rare Cancer Initiative partnership between Desert Mountain CARE and HonorHealth Research Institute, we're excited to align our progress with the vision of making a difference in the lives of our patients and their families.

DISCOVERY LAB

Because of you, we have outfitted and initiated work in our Discovery Laboratory once again. The Discovery Lab is a platform that allows investigators to activate and participate in a range of translational trials. Included in the activities is the investigation of cellular therapy opportunities such as advancing the role of **ORGANOIDS and ASTEROIDS** in the care and management of patients with cancer. We have increased our experience in the use of organoids to define a range of options for patients with cancer and are now in the process of applying for CAP and CLIA certification to allow outcomes from analysis to be considered in the clinical care and management of patients. Using advanced genomics and transcriptomics to drive cellular analysis enhances decision making in these complex clinical settings. Our hope is to use these technological advances, including the incorporation of the asteroid platform to understand and ultimately make recommendations for therapy in the setting of difficult-to-treat diseases, such as brain tumors like glioblastoma multiforme (GBM).

In the coming year, we plan to establish an organoid program in GBM to better study and understand the complex pathophysiology of this disease and use this platform as a foundation for a comprehensive strategy in the care and management of patients who otherwise lack sophisticated treatment options.

The Discovery Lab is also focused on piloting several new initiatives focused on diagnostics in cancer. Having led the goal of developing pilot data in UVEAL MELANOMA/UM (extracellular vesicle or EV data), we are working to recapitulate the experiment in the setting of another rare cancer, notably gastrointestinal stromal tumor.

The **UM EV PROJECT** took a significant turn forward with the review of data from the ASU Proteomics Laboratory that confirmed the ability to identify a series of extracellular vesicles that are associated with the presence and degree of UM, thereby setting the potential that we will be able to identify a circulating biomarker for persistent malignancy (after surgery) that can be used for efficacy of new cellular therapies in high risk individuals following definitive primary treatment.

We view the Discovery Lab as a foundational element of advancements, which will impact identification of new targets in cancer, new molecular pathways to target and that these insights will drive decision-making in both rare cancers and resistant/refractory disease in the future.

We have already identified our first potential drug target in the setting of UM and will use the resources in the Discovery Lab to test the importance and relevance of "knocking down" this target in the management of UM in the laboratory.

Our projects in UM have emanated from the Discovery Lab having started with the assessment of circulating tumor DNA (ctDNA) as a blood-based biomarker (BBM). Having identified specific signals in UM, we have expanded this to include analysis of blood plasma to identify EV signals with ASU that have identified differential signals in patients with or without active disease. We are continuing to work on this platform, using samples accumulated in our UM bank. This research will further uncover its potential use as a relevant biomarker to identify the highest risk individuals and to hopefully use the resolution of this signal as a favorable indicator of benefit in patients who have undergone potentially curative primary treatment.

Because of UM's propensity to be resistant to the effects of immunotherapy, we consider it to be a prototypical disease to inform us about the mechanisms of resistance arising from the presence of hepatic metastases. To this end, we have worked with the UA Proteomics Lab in Tucson to examine the spatial proteogenomics of uveal melanoma liver metastases. This work has promise to not only identify the mechanisms of resistance in UM, but also unlock elements that differentiate between responding and non-responding cancers in the setting of systemic immunotherapy, a critical issue as we are approaching the first immunotherapy treatment in colorectal cancer exclusively for those patients who do not have liver metastases.

These advances, and the identification of the HRI UM program as one of the most active clinical and translational programs in the US, has led to the early adoption of a newly FDA-approved hepatic perfusion therapy and increased the number of new clinical trials in this arena.



Desert Mountain CARE Check Presentation to HRI – October 2023

POINT OF CARE DIAGNOSTICS

With your help, we have developed a point-of-care tool that uses a Vertical Flow Immunoassay (VFI) to measure proteins or selected biomarkers. In the setting of cellular therapy, such as CAR-T treatment of leukemia/lymphoma or bispecific antibody therapy in both hematologic and solid tumor cancer, we see a percentage of patients who develop the complication of Cytokine Release Syndrome (CRS) or ICANS (immune effector cell-associated neurotoxicity syndrome).

It is not currently possible to predict with accuracy which patients may develop these potentially life-threatening syndromes. Both are associated with modulations of a variety of cytokine levels. At this time, measurement of cytokines requires "send out" tests, which can take days to return.

We are developing a VFI system for point-of-care use, which can be employed to accurately measure cytokine levels and changes and therefore offer the option of identifying patients both at risk for, and suffering from, CRS or ICANS.

We believe that with a range of immunotherapy options available and increasingly complex immunotherapies targeting cancer, that such a technology coupled with genomic single nucleotide polymorphisms (sNPs) and molecular imaging (PET CT scans) will enhance the safety of these highly effective treatments.

2024-2025

In the final year of the rare cancer initiative, we hope to complete the above tasks and, using the pilot data from the past three years' worth of activities, apply for and secure funding for definitive studies, resulting in the establishment of intellectual property, resulting in commercialization of these developments.

*Desert Mountain
CARE
Thank you for your
continued kindness,
generosity and support!*