HONORHEALTH RESEARCH INSTITUTE CARE FUNDED PROJECTS

2008 - 2011

Breast & Prostate Cancer Research

Clinical trials (mostly Phase 1):

- Patients had slowed disease progression when treatment addressed abnormal proteins in tumor
- Demonstrated promise of molecular profiling
- Evaluated new treatments that remove the "cloak" surrounding breast CA cells
- Studied efficacy vs toxicity
- Studied new oral medications

2012 - 2014

Rapid Detection & Assessment of Response

- Identified early markers for CA
- Determined if a patient's treatment is working
- Characterized the biological makeup of a patient's tumor
- Studied the energy requirements and structural changes that occur as normal cells transform into CA

2015 -2016

Early Detection Program

- Funded CARE Medical Director of the Early Detection Program
- Identified an individual's risk factors for CA to prevent disease and improve patient's responses to treatment
- Gathered vital data in REDcap database

2017

Continued Investment in Early Detection Program

- Enhanced rapid, large-scale next generation DNA sequencing through purchase of a key instrument for the core HHRI facility
- Leveraged critical talent in support of the major multi-institutional center grant proposal to NIH
- Seeded innovation in the Early Detection Program

2018

Cellular Therapy Research

Initial investment in Cellular Therapy Research Program enabled:

- Recruitment of nationally recognized research scientists and physicians in targeted therapeutic areas
- Capital resource investment in biobanking and lab equipment
- Accelerated progress in applying cellular research advances to individual patient treatment:
  - establishment of cutting-edge organoid program
  - launch of novel Tumor Infiltrating Lymphocytes (TILs) therapy program

2019 - 2020

Cellular Therapy Research

- Scientists and physicians recruited in 2018 oversaw the development of a translational laboratory and biorepository, enabling the prospective collection, storing and analysis of bio specimens from individuals at risk of developing CA
- Laboratory and biobanking was further expanded to include early detection of pancreatic, breast, ovarian and colorectal CA
- TIL therapy program launched in 2018 expanded, enabling patients to be treated with their own sensitized TILs

HONORHEALTH RESEARCH INSTITUTE CARE FUNDED PROJECTS

2021

Arizona Rare Cancer Initiative

The purpose of this effort will be to launch what is anticipated to be the first year of a two-year investment in this program.

The explicit intent of this donation is that no less than 75% of funds be used to seed fund pilot projects and research studies and that no more than 25% of this donation may be used to fund labor and benefit costs for the Rare Cancer Initiative key talent.

2022 - 2023

Funding Two Projects

Uveal Melanoma (UM):

UM is a rare subtype that arises typically in the choroidal body of the eye .

HHRI's goal is to identify novel biomarkers for disease monitoring and diagnosis with the expectation that such biomarkers can be used to identify patients at highest risk for recurrence and utilize these biomarkers as a surrogate endpoint in the adjuvant setting.

2022 - 2023

Funding Two Projects

Tenosynovial Giant Cell Tumor (TGCT):

TGCT is a rare sarcomatous proliferation of the synovium lining the joints. This disorder typically occurs in young men and women and most often impact the large joints, particularly the knees.

HHRI is proposing to subject new diagnosed and untreated patients to a joint effusion aspiration as well as the necessary surgical biopsy (if not already performed) to develop an effusion-driven biomarker analysis allowing an alternate mechanism for securing the diagnosis of TGCT.

2024 - 2025

Funding Two Rare Cancer Initiatives

Uveal Melanoma (UM): Continuing Research for the Treatment of Uveal Melanoma with an Emphasis on Understanding the Relationship of Uveal Melanoma Cancer Metastasis to the Liver and as applied to other Cancers.

Plant Extracellular Vesicles Initiative (pEVs): HonorHealth is advancing a unique program exploring the therapeutic uses of plant extracellular vesicles. These vesicles can enwrap drugs and transport them directly to cancer cells, offering a more targeted and effective treatment approach.

MAYO CLINIC IN AZ CARE FUNDED PROJECTS

1998 - 2006

Breast Cancer Research

Funded breast CA research directed by Dr. Svetomir Markovic Gendler

CARE "seed money" helped Dr. Gendler obtain SPORE (Specialized Program of Research Excellence) Grant from the National Institutes of Health to "develop a MUC1 glycopeptide vaccine," an early immunotherapy

2007 - 2009

Breast and Genitourinary Cancer Research

Continued funding of Dr. Gendler's research including Phase I & II clinical trials for MUC1 glycopeptide vaccine, which could effectively treat as many as 90% of breast CAs

Launched investment in research and infrastructure to support Drs. Alan Bryce, Erik Castle and Thai Ho's multifaceted prostate CA research enabling:

- creation of genitourinary biobank
- recruitment and hiring members of the research support team
- maintenance of CA cell lines

2010

Breast Cancer Research Programs

Funded two initiatives of Dr. Barbara Pockaj in Breast CA

Translational Breast CA Research Program: Evaluated AR expression in triple negative breast CA finding immunotherapy benefit; substantiated efficacy of combination therapy with JAK-2 inhibitors; funded breast CA biobanking

Genomic Knowledge Generation Breast Cancer Research Program (GKGBCR): Funded classification of breast CA subtypes leading to new therapeutic strategies and search for additional markers and genetic targets allowing for additional therapies

2011- 2015

Breast and Genitourinary Cancer Research

Year two funding of Dr. Pockaj's GKGBCR and renewed funding for genitourinary CA research:

- bladder CA and glycan metabolism study
- prostate CA stage 1 - bioinformatics of treated CA cell lines
- prostate CA phase 1 trial design
- novel research in testicular CA and sequencing
- neoadjuvant trial for prostate CA

2011- 2015

Breast and Genitourinary Cancer Research

Continued

- minority outreach for prostate CA
- circulating tumor cell project in kidney CA
- publication of epidemiologic study in prostate CA metabolomics

2016-2017

Liquid Biopsies & Optimizing Drug Delivery to Tumors

Invested in seed funding of research by Dr. Muhammed Murtaza to explore potential of liquid biopsies

- the potential for this minimally invasive technology would enable early detection of CA, monitoring of treatment response and early detection of therapy resistance

Invested in seed funding of research by Dr. Alan Bryce to match the right medicine to each CA patient:

- will cell lines respond to predicted targeted therapies?
- will cell lines validate novel drug combinations?

MAYO CLINIC IN AZ CARE FUNDED PROJECTS

2018

INTERCEPT Project

Invested in funding of Dr. Niloy Jewel Samadder's **INTERCEPT** study of >3500 CA patients in 4 cities focused on under-studied cohort whose CA is seemingly not explained by familial occurrence but whose incidence of gene mutation (thus familial) in the general population is thought to be as high as 20%.

Exploration of the risks of sporadic CA that may be inherited are not captured by current treatment guidelines.

Goal: Help expedite the personalization of current immunotherapies and transform clinical guidelines nationally

2019

INTERCEPT INHERIT

Continued funding of Dr. Samadder's INTERCEPT study to strengthen data by increasing enrollment of minority patients beyond the <5% enrolled in the INTERCEPT pilot

INHERIT is an expansion of the same protocols used in INTERCEPT. It will enroll 400 African American (AA) CA patients from a site where the patient population is 30% AA. Background community work will take into account the history of distrust in the AA population with medical research – e.g. Tuskegee and Henrietta Lacks

2020

INHERIT GEMINI

GEMINI is yet a further expansion of the original INTERCEPT & INHERIT program. GEMINI will enroll 400 Hispanic-Latino and Native American and other minority populations cancer patients in Maricopa county. The expansion to these newly targeted populations will help buttress the data accrual in an effort to make a substantial difference in the care of cancer patients nationwide and have the greatest impact on national guidelines.

2021

Multiple Myeloma adoptive T-Cell Therapy Clinical Trial

Phase 1 clinical trial, to be conducted at Nyberg Human Cellular therapy lab. Enroll 18 patients with relapsed or refractory multiple myeloma. Primary objectives are to determine the toxicity, feasibility and success rate of in-house manufacturing and administration of MUC1-specific T-cells in patients with multiple myeloma. End goal is creation of a clinical protocol and manufacturing components for submission as an Investigational New Drug (IND) application to the Food and Drug Administration

2022

Funding Two Projects

Predicting Metatasic Potential Cutaneous Squamous Cell Carcinoma Using Gene Expression Profiling:

Cutaneous squamous cell carcinoma (cSCC) affects more than one million individuals annually in the United States.

There is a great need for more accurate identification of tumors with metastatic potential to truly characterize cSCC patients that are at high risk

2022

Funding Two Projects

Targeting Metastatic Prostate Cancer With Novel Fn14 Inhibitory Compound:

Prostate cancer (PCa) is the second leading cause of cancer related death in American men. Like normal prostate tissue, which requires androgen hormones produced by the body to function, so do prostate cancer cells. Thus, treatment for PCa frequently involves either reducing the supply of androgens by blocking androgen synthesis in the body or disrupting the stimulation of cancer cells through blockade of androgen receptor signals in cancer cells

MAYO CLINIC IN AZ CARE FUNDED PROJECTS

2023

Tapestry Project

Invested in expanding multicancer early detection testing to Tapestry patients study led by Dr. Jewel Samadder.

The tapestry project recognizes that novel genomic technologies ability to identify cancers early in the blood that shed from tumor cells and tumor cell free DNA would result in substantial gains and progress in cancer treatment and survival rates.

The Tapestry program study, with over 60,000 participants has been ongoing at Mayo Clinic and is expected to become part of a larger NIH study.

2024- 2025

Funding Two Projects

Pancreatic Cancer Research: We are supporting the development of novel therapeutic approaches, addressing the urgent need for improved outcomes for pancreatic cancer patients.

Prostate Cancer Research: Our funds aid in the creation of effective CAR-T cell-based therapy to enhance the quality of life and survival rates for those with prostate cancer, the most common cancer found in males in Arizona.