



2019 MMRF IMPACT REPORT



MULTIPLE MYELOMA
Research Foundation

YOUR SUPPORT MADE PROGRESS POSSIBLE



As I look back on 2019, I am inspired by and grateful for the MMRF community. Our relentless pursuit of a smarter, faster cure for multiple myeloma continues, and your support has been vital.

The MMRF has made unparalleled progress on our strategic plan by leading the way in three key areas—immunotherapy breakthroughs, the launch of the Myeloma Investment Fund®, and data-driven decision making through the MMRF CureCloud®. We know a cure is within reach.

This impact report outlines all the areas in which we've made advances in 2019. As we continue forging ahead with the many exciting initiatives in the works, we want to pause and give thanks for all that you do. We cannot do this important work without you, and we appreciate your steadfast support. I hope you'll review this report to learn more about all the breakthroughs you've already made possible.

In partnership,

A handwritten signature in black ink that reads "Paul Giusti". The signature is fluid and cursive, with a long horizontal stroke at the end.

Paul Giusti
President and CEO
Multiple Myeloma Research Foundation

BLAZING NEW TRAILS IN PURSUIT OF A CURE

The MMRF has consistently paved the way for progress by:

- 1. Building the first multi-center tissue bank**
in myeloma from over 4,000 patients' tissue samples
- 2. Becoming the first organization**
to sequence the myeloma genome
- 3. Launching 80+ clinical trials**
with thousands of patients
- 4. Stewarding FDA approval**
for 11 drugs
- 5. Leading efforts that have improved the five-year survival rate by 40%** and tripled the life expectancy of multiple myeloma patients

“Now, MMRF has taken it one step further, which I think is absolutely incredible, with CureCloud®. It's almost overwhelming to think with all of the research with thousands of patients that have this disease, CureCloud is going to find a way to make it individual.”

— Sage Steele
ESPN SportsCenter Anchor
MMRF Honorary Board Member

SMARTER

Breakthroughs in immunotherapy.

Immunotherapy is one of the most exciting and rapidly evolving areas of cancer research and treatment today. Now, we are bringing this firepower to multiple myeloma. In 2019, our team worked relentlessly to harness the most promising immune agents that advance breakthroughs for patients.

Immune Atlas Initiative Partners

Beth Israel Lahey Health
Beth Israel Deaconess Medical Center



LAUNCH OF IMMUNE ATLAS PILOT:

The gold standard in immune profiling platforms.

In 2019, the MMRF launched the groundbreaking [Immune Atlas](#) initiative in collaboration with research teams from five top medical centers. The goal of the pilot is to create a highly detailed map of the immune system in multiple myeloma patients by analyzing samples from MMRF CoMMpassSM Study participants. This information will be integrated with genomic and clinical data to create a comprehensive picture of the disease. Ultimately, it will inform clinicians and scientists more about each patient's immune system, genomics, and disease risk and prevention, and it will drive the discovery of new therapeutic targets.

“The work we’re doing at the precursor stage is vital to a patient’s myeloma journey. Understanding the intricacies of the earlier stages will allow us to recommend treatments and potentially prolong the progression to full myeloma.”

— Irene Ghobrial, MD
Dana-Farber Cancer Institute



2019 IMMUNE SUMMIT:

Bringing the brightest minds together.

Organized by the MMRF and convened in Norwalk, we brought together top experts from academia, the pharma and biotech industries, and the FDA to share data and insights to advance immunotherapies. The top priorities of the summit included prevention, clinical acceleration, and Immune Atlas development.

IMMUNE NETWORKS OF EXCELLENCE:

Studying patient immunity.

The Immune Networks of Excellence brings together best-in-class national and international academic medical centers to collaboratively study key changes in patient immunity and the effect of therapy during disease development and progression. The goal is to understand the connection between immunity changes, disease risk, and responses to treatment and ultimately to develop new therapies and strategies for treating multiple myeloma.

RESEARCH FELLOW AWARDS FOR 2019

- **Benjamin Barwick, PhD**
Emory University
"Epigenetic Analysis of Multiple Myeloma CoMMpass Specimens"
- **Ibai Goicoechea, PhD**
Universidad de Navarra
"Circulating myeloma cells: a new model to understand disease dissemination"
- **Emine Gunes, PhD**
City of Hope
"Targeting CD84 immunosuppression in Multiple Myeloma"
- **Osiun Jung, PhD**
University of Wisconsin-Madison
"Targeting immunosuppression in Multiple Myeloma"
- **Helen Tanton, PhD**
Dana-Farber Cancer Institute
"Investigating the role of the Cyclophilin A-CD147 axis in multiple myeloma"

2019 INTERNATIONAL MYELOMA WORKSHOP



Presented 24 research abstracts:

- 18 driven by MMRF CoMMpass Study data
- 6 driven by MMRC trials, the MMRF Answer Fund, and the MMRF Immunotherapy Initiative
- Shed new light on mechanisms of resistance, biomarkers for patient selection, and identification of ancillary targets

FASTER

Accelerating progress with the Myeloma Investment Fund®.

In 2019, the MMRF launched the Myeloma Investment Fund® (MIF), a venture philanthropy fund that invests in promising companies, clinical assets, and technologies in oncology to accelerate the delivery of precision medicine and a cure for every patient. The MIF collaborates closely with select companies to help them advance multiple myeloma research, providing access to longstanding relationships with pharmaceutical companies and academic medical centers, a clinical network of 24 sites, and data from the largest genomics data set of any cancer.



“We created the Myeloma Investment Fund to leverage the MMRF’s formidable assets and advance new therapies for our patients — while generating a return to reinvest in even more research.”

— Peter Kosa, PhD
Managing Director, Myeloma Investment Fund

2019'S GROUNDBREAKING INVESTMENTS



The MIF investment in NexImmune will help support the initial clinical development of NEXI-002—one of the company's lead product candidates. It will also help further develop the company's proprietary Artificial Immune Modulatory (AIM) nanotechnology platform, which has the potential to benefit high-risk refractory patients who have limited treatment options and significant unmet needs.



The MIF invested in Tidal Therapeutics, which has proprietary technology to modify T-cells directly in a patient's blood, targeting multiple myeloma. They are using this technology to develop novel CAR T therapies suited for myeloma treatment.

“MMRF’s capabilities and expertise around myeloma and the MIF investment will help to ensure Tidal is able to succeed in bringing our technology into the clinic.”

— Ulrik Nielson
President & CEO, Tidal Therapeutics



PAVING THE WAY FOR OTHER DISEASE ORGANIZATIONS

The MIF is the first and only mission-driven, self-sustaining, scalable venture philanthropy fund focused on multiple myeloma. In 2019, we were cited in the *Wall Street Journal* article, “[In Quest for Cures, Medical Nonprofits Seek to Wield Their Own Venture Funding Power](#),” alongside the American Cancer Society as being at the forefront of nonprofits launching venture funds to drive disease research.

The MIF is an integral part of our strategic plan and will continue making investments in promising companies that are leading the way to a cure for multiple myeloma.

CURE

Democratizing data with the MMRF CureCloud®.

We are proud to have made progress on the MMRF CureCloud—a centralized data hub that aggregates, links, and visualizes longitudinal genomic, immune, and clinical patient data. It's an innovative and bold new initiative that empowers patients to easily share their information and promotes data-driven treatment decisions and optimized outcomes for myeloma patients.

As patients join the MMRF CureCloud, the information we gather will help everyone push closer to a cure for multiple myeloma. With this data, researchers can identify smarter treatments for every subtype and every patient, physicians will be provided with lifesaving insights, and patients can share, access, and learn from comparative data. We are democratizing access to smart, data-driven care.



MMRF CURECLOUD® RESEARCH PILOT

Q2 2019



- 1. Direct-to-Patient** enrollment launched
- 2. Liquid biopsy targeted gene panel** (blood-based targeted gene sequencing panel)
- 3. Electronic medical record** abstraction and curation

THE IMPACT OF SHARED DATA

93% of multiple myeloma patients are willing to share their data to advance treatment. With the MMRF CureCloud, they will be able to—directly, safely, and securely.

ACCESSIBLE DATA FOR ALL PATIENTS:

The MMRF CureCloud will increase data accessibility and engagement for patients.

- All MMRF CureCloud aggregated data will be available for free—fostering conversations between patients and physicians
- The MMRF CureCloud visualization tools will allow patients to review their data and compare the information with data from similar patients
- The MMRF CureCloud will help efficiently match patients with the right clinical trials and targeted treatments

SMARTER DECISIONS

For physicians and researchers.

The MMRF CureCloud aims to deliver data-backed decision making from physicians and researchers. The data will support physicians as they evaluate their patients' specific information in relation to patients who share similar characteristics. Researchers will be able to accelerate vital drug development because of the access to MMRF CureCloud data—which is critical to identifying new targets and hypotheses for treatment.

BUILDING ON DATA LEADERSHIP:

The lasting impact of the CoMMpass Study.

The MMRF CoMMpassSM Study, which was designed to provide researchers with as much information as possible about multiple myeloma from more than one thousand patients throughout the course of their disease, is still yielding breakthroughs in understanding five years later.

1,150 PATIENTS

Enrolled 1,150 patients from
90 sites worldwide.

100+ PUBLICATIONS

Influenced 100+ publications,
including 41 in 2019.



CoMMpass to Clinic

The CoMMpass Study identified that myeloma is not just one disease—there are multiple subtypes. In 2019, we tested drugs designed for each subtype in our MyDRUG clinical trial. There were 17 sites enrolled and active in this trial.

MYDRUGTM



DONOR SPOTLIGHT

After Kathy Elsey was diagnosed with multiple myeloma in 2007, she and her husband, Dr. Bruce Elsey, DVM, started Dr. Elsey's Fund to Cure Cancer through their successful cat care product company. Since 2009, Dr. Elsey's Fund has contributed more than \$12 million to the MMRF's efforts to accelerate a cure.

“It is certainly critical that researchers continue to share information between themselves. I think it's wonderful that the MMRF has been instrumental in getting that to happen. Because I think it's a group effort to cure cancer and if we don't get people operating in unison, then we're never going to find a cure.”

— Dr. Bruce Elsey, DVM

EMPOWERING

Patients in their journey.

In 2019, the MMRF blazed new trails in myeloma research and reinforced our commitment to providing critical education and arming patients with the tools they need to fight this disease.

PREVENTION EFFORTS

We worked tirelessly to understand myeloma at every stage, especially for patients managing the two precursor, pre-cancerous stages: MGUS and Smoldering Multiple Myeloma.

Perelman Family Foundation Early Disease Translational Research Program

This is the first-ever research program dedicated to early detection and prevention. Since its launch in 2017, it has contributed major breakthroughs to the field:

- Identifying biomarkers and microenvironmental changes as strong predictors of progression from early disease to overt myeloma
- Creating new diagnostic approaches, such as liquid biopsy
- Uncovering new directions of research, such as the connection between chronic inflammation and stimulation of the gut and myeloma



Clinical Trial Launched

Daratumumab Smoldering Multiple Myeloma

A Phase II study of a treatment for patients with high-risk MGUS and low-risk Smoldering Multiple Myeloma.

PATIENT EDUCATION

Through our newly established Patient Navigation Center and patient education programming, we are working directly with patients and caregivers to ensure they have the tools they need to navigate this disease while we drive research that ultimately leads to a cure.

11,000+
PEOPLE

registered for patient education webinars in 2019.

2,200+
QUESTIONS

from patients addressing referrals, testing and results, therapies and drugs, the MMRF CureCloud, and general myeloma support.

98%
PATIENT
satisfaction rating.

MMRF PATIENT NAVIGATION CENTER

With the MMRF [Patient Navigation Center](#), nurses help patients get on the Right Track.



RIGHT TEAM

We connect patients with experts and centers with extensive experience treating their specific type of cancer



RIGHT TESTS

We provide information and precise diagnosis so that patients can make effective treatment decisions



RIGHT TREATMENT

We support decision making around the best treatment plan

ORGANIZATIONAL UPDATES

In 2019, the MMRF grew internally as well. We know that with a strong team and smart stewardship of funds, we will bring patients one step closer to a cure.

WELCOMED NEW LEADERS TO THE MMRF TEAM

Executive Leadership



Michael Andreini
Chief Operating Officer



Hearn Jay Cho, MD, PhD
Chief Medical Officer

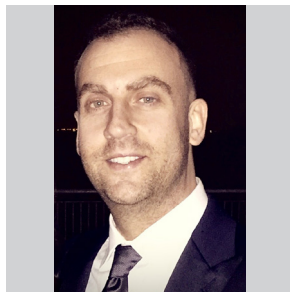


Sage Steele
ESPN SportsCenter Anchor

Honorary Board



Peter Kosa, PhD
Managing Director, MIF



Greg Rubenstein
Vice President, Marketing

Continued Responsible, Transparent Stewardship of Funding

**\$50M
RAISED**

annually to accelerate precision medicine.

**90% OF
FUNDS**

go to research.

15TH YEAR

with four stars (highest rating) from Charity Navigator.

GuideStar 2019

PLATINUM

Seal of Transparency.

**“BEST IN
AMERICA”**

Seal of Excellence from the Independent Charities of America.

“A+”

RATING

from the American Institute of Philanthropy.

ABOUT THE MMRF

A pioneer in precision medicine, the Multiple Myeloma Research Foundation (MMRF) seeks to find a cure for multiple myeloma by relentlessly pursuing innovation that accelerates the development of next-generation treatments to extend the lives of patients. Founded in 1998 by Kathy Giusti, a multiple myeloma patient, and her twin sister Karen Andrews as a 501(c)(3) nonprofit organization, the MMRF is a world-recognized leader in cancer research, launching over 80 clinical trials and leading to 13 FDA-approved drugs.

Together with its partners, the MMRF has created the only end-to-end solution in precision medicine. With this, the MMRF continues to disrupt the industry today, building CoMMpass Study, the single largest genomic dataset for any cancer, and launching MyDRUG, the first platform trial in multiple myeloma. Since its inception, the organization has collected over 10,000 samples and tissues in its database, which is shared among 24 academic institutions. The MMRF has raised nearly \$500 million and directs nearly 90% of the total funds to research and related programs.

To learn more, visit themmrf.org.



OUR MISSION: CURE MULTIPLE MYELOMA

The Multiple Myeloma Research Foundation (MMRF) drives discoveries for new treatments, accelerates groundbreaking clinical trials, and fuels the most robust data-driven initiatives in cancer research. Our goal is to find a cure for each and every patient diagnosed with multiple myeloma.

Multiple Myeloma Research Foundation
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TheMMRF.org