

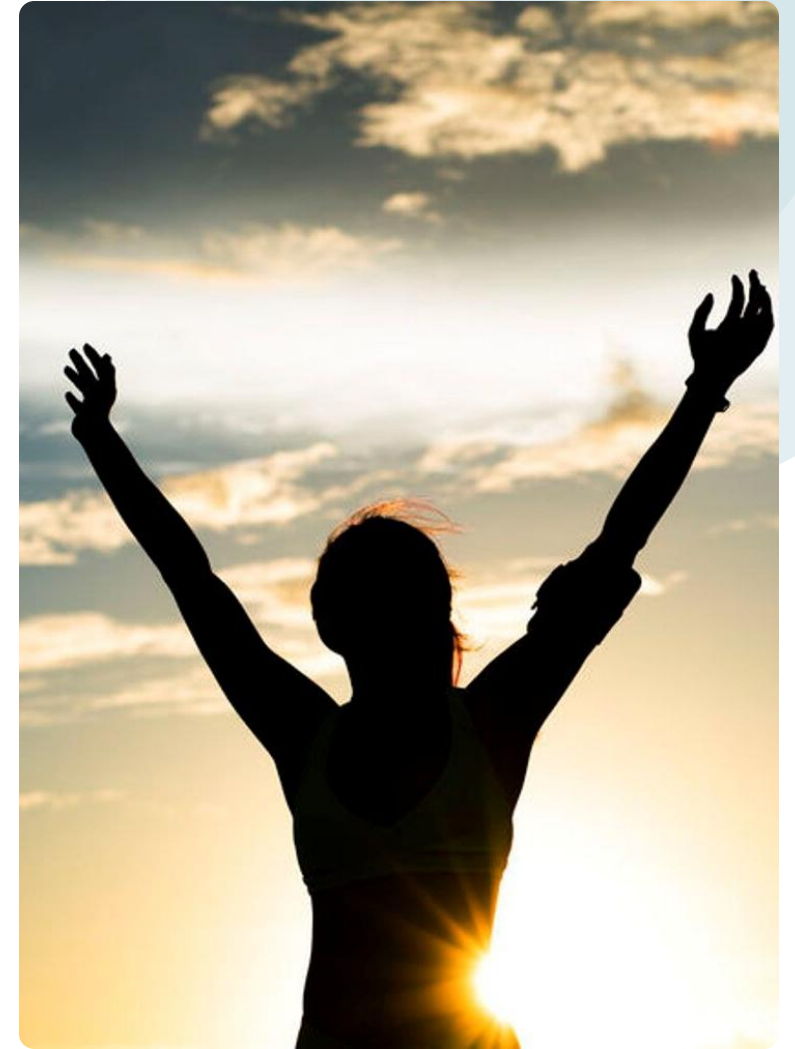
CORES IN THE COMMUNITY

The Power of Shared Resources

A Patient's Story of Hope, Survival,
and the People Behind the Cores Who Made It Possible

Kristin Kleinhofer

Acute Lymphoblastic Leukemia (ALL) Survivor
Treated at Kaiser Permanente, Stanford, and Fred Hutch
Patient Advocate and Speaker



THE BIGGER PICTURE

Putting a Face to the Work You Do

Across Shared Resources, your work helps move science forward. Some of it reaches patients. Some of it builds knowledge for the future.

Every contribution matters.

An estimated 18.6 million people in the U.S. are cancer survivors.*

I am one of them.

*Source: National Cancer Institute, Office of Cancer Survivorship, May 2025.



Work like yours helped make my survival possible—before I even knew this work existed.



AUGUST 5, 2010

The Cyst I Thought Was Harmless

Acute Lymphoblastic Leukemia (ALL)

An aggressive blood cancer

My life exploded—I was in complete shock

I learned about my disease, went through more testing, and sought a second opinion

A central line was placed to deliver chemotherapy, and treatment began

In one phone call, my life changed completely



I may be changed by what happens to me, but I refuse to be reduced by it.

— *Maya Angelou*

AUGUST 2010–JULY 2012 • STANDARD OF CARE, NOT A CLINICAL TRIAL

Hyper-CVAD Chemotherapy: What I Experienced and What I Couldn't See

THE TREATMENT I EXPERIENCED

Intensive treatment

FIRST 6 MONTHS

- Week-long hospital stays for **five-drug** chemotherapy, including intrathecal
- Scans, bone marrow biopsies, and lumbar punctures
- Blood draws, blood transfusions, and central line care
- Infections and side effects

Maintenance

NEXT 18 MONTHS

- Daily oral chemotherapy and monthly infusions

WHAT MADE IT POSSIBLE

The community behind my care

- Decades of research and clinical trials—supported by cores like yours—shaped the Hyper-CVAD protocol
- Calibrated instruments and validated methods behind every result that guided my care

OUTCOME • Treatment successful. Remission for 1.5 years.



I saw the chemotherapy.

I couldn't see the people behind it.

FEBRUARY–MARCH 2014

The Cancer I Thought Was Behind Me Came Back

WHAT HAPPENED

- Neck biopsy confirmed **ALL had returned**—new chromosomal abnormality (trisomy 9)
- Inpatient salvage chemotherapy—three-drug MEC regimen
- Treatment failed. **Leukemia tripled.**

WHAT IT MEANT

My life on hold again—job, home, and pets

Standard chemotherapy options exhausted

Only path forward: a clinical trial



MARCH 2014 · A NEW MANTRA TO GUIDE ME FORWARD



Once you choose hope, anything is possible.

— *Christopher Reeve*

APRIL 2014

New Hope: My First Clinical Trial

PHASE II TRIAL FOR RELAPSED/REFRACTORY ALL • STANFORD • PROTOCOL 25596

THE BRIDGE TO TRANSPLANT

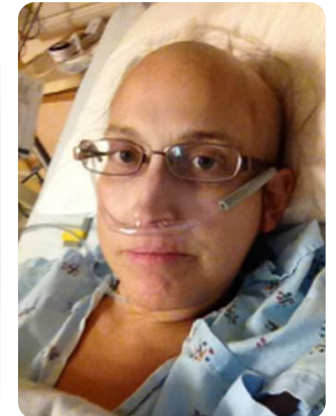
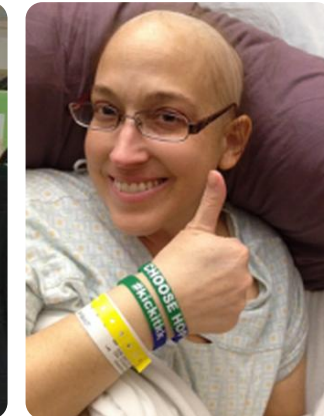
- Four-week inpatient stay; six-drug chemotherapy
- Goal: remission, then bone marrow transplant
- **Temporary remission**—but treatment wreaked havoc on my body

THE ROADBLOCK

- **No matched bone marrow donor** in my family or the registry

A DIFFERENT APPROACH

- My doctor introduced **CAR T-cell immunotherapy**—using my own immune system to fight cancer
- My mom researched it and we got excited
- My doctor contacted **three trial sites**—Fred Hutch responded



MAY 2014

Finding Out Whether I Qualified

CAR T-CELL CLINICAL TRIAL • FRED HUTCH • SEATTLE, WA

THE CONVERSATION AND TESTING

- Principal investigator (PI) discussed benefits, potential risks, and common side effects
- PI shared stories of earlier patients achieving **remission** after CAR T therapy
- More testing to determine **eligibility**

THE COLLECTION

- Leukapheresis—four hours to collect my white blood cells
- Collected T cells would become my CAR T-cell therapy

THE WORK I COULDN'T SEE

Fred Hutch's **Therapeutic Products Program** manufactured and cryopreserved my CAR T cells.

Then I flew home—and waited



JUNE–NOVEMBER 2014

Waiting for My Chance at CAR T

SCREENED—NOT YET ENROLLED

JUNE 2014

- **Couldn't enroll**—the trial required measurable leukemia, and mine was undetectable

SEPTEMBER 2014

- My leukemia returned—for the **third time**
- My doctor reached out—**Fred Hutch said yes**

SEPTEMBER–NOVEMBER 2014

- **Serum shortage** delayed enrollment until November

I had found a path—but the timing was beyond my control

STILL CHOOSING HOPE



A weekend away with my family—and a word to hold onto

NOVEMBER 2014 • FRED HUTCH • SEATTLE, WA

My CAR T-cell Clinical Trial Begins

TRIAL PROTOCOL 2639

Phase I/II study of immunotherapy using defined subsets of autologous T cells engineered to express a **CD19-specific chimeric antigen receptor**

Formulated at a precise **1:1 ratio** of CD4 helper to CD8 killer T cells

Eligible advanced blood cancers: ALL • CLL • NHL

THE WORK I COULDN'T SEE

Years of research and collaboration had made this trial possible—so that after months of waiting, I could finally enroll.

WHAT CAME NEXT

Several days of outpatient **lymphodepleting chemotherapy** to prepare my body for CAR T-cell infusion



Dr. David Maloney
PRINCIPAL INVESTIGATOR



Dr. Stan Riddell
PIONEERING CAR T-CELL
RESEARCHER AND DEVELOPER



Dr. Cameron Turtle
CO-PRINCIPAL
INVESTIGATOR

#13

13TH PATIENT WITH
ALL ENROLLED IN THE
TRIAL

NOVEMBER 19, 2014 • FRED HUTCH • SEATTLE, WA

The Day I Received My CAR T Cells

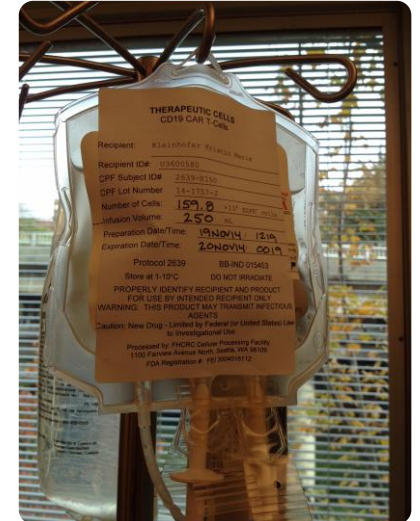
THE INFUSION

- My CAR T cells arrived **in a cooler** from the cell manufacturing lab
- Small, clear bag holding millions of my own T cells—**engineered** to recognize CD19 and kill my leukemia cells
- **20–30-minute** infusion; vitals monitored throughout
- One of the trial's **first two outpatient CAR T-cell infusions**

HOW IT FELT

- Excited—the day was finally here
- Hopeful my participation would help patients after me
- Grateful for decades of research making my treatment possible

We wore our “Choose Hope” shirts—on purpose



NOVEMBER–DECEMBER 2014 • FRED HUTCH • SEATTLE, WA

The Reaction—and the Recovery

WHAT HAPPENED

- Day 1: **Infusion reaction**—high fever; **hospitalization for 3 days**
- Day 5: **Cytokine release syndrome (CRS)**—high fever; **readmitted for 6 days**

HOW IT FELT

- Fever over 102°, chills, muscle aches, and night sweats
- Dropping blood pressure and blood counts
- Brain fog and migraines
- **Thanksgiving** in the hospital—Mom brought dinner

THE WORK I COULDN'T SEE

Behind the scenes, the Immune Monitoring team detected signs of CRS and alerted my doctors.

Two weeks after infusion—back on my feet and out in the city



Three Weeks Later: No Evidence of Cancer

THE RESULT

- Bone marrow biopsy showed **no evidence of cancer**
- The CAR T treatment also caused **B-cell aplasia**—the loss of healthy B cells

WHAT CAME NEXT

- **Bone marrow transplant**—my next step toward lasting remission
- With no matched donor, **cord blood became the path forward**

THE WORK I COULDN'T SEE

Behind that result were teams who performed the testing and interpreted the data. Their work confirmed the remission that changed my life.

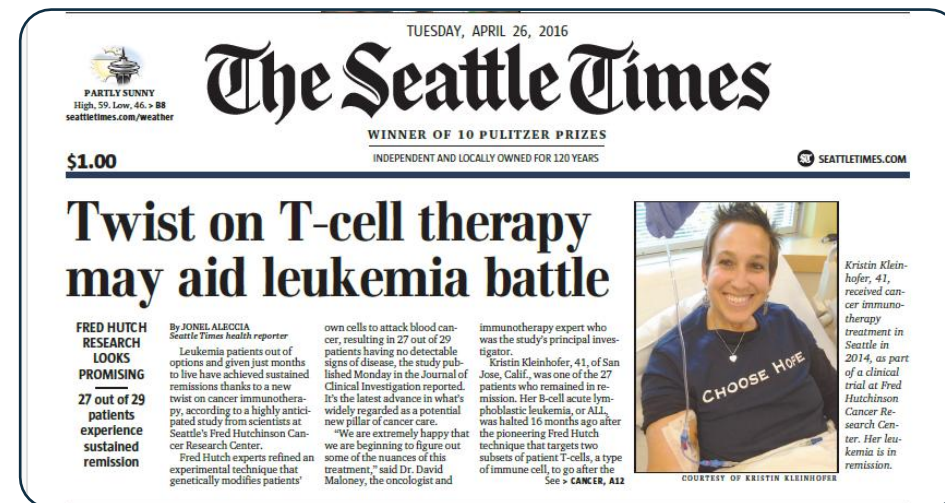


Home for one week at Christmas—celebrating remission with family and friends

LATER TRIAL RESULTS

93%

27 of 29 patients with ALL achieved remission



The Seattle Times, April 26, 2016

The Lifesaving Gift of Cord Blood

TRIAL PROTOCOL 2603

I enrolled in a multicenter, randomized Phase II study of **single- or double-unit** cord blood transplantation, with or without an infusion of off-the-shelf, lab-expanded cord blood progenitor cells

*My third clinical trial—**another chance** at a lasting cure*

WHAT CAME NEXT

Myeloablative (high-intensity) conditioning—three days of chemotherapy followed by four days of total body irradiation delivered over eight sessions—to prepare my body for transplant

#51

51ST PATIENT
ENROLLED IN THE
TRIAL



With Drs. Colleen Delaney and Filippo Milano—investigators at the time of my transplant

FEBRUARY 4, 2015 • FRED HUTCH • SEATTLE, WA

Transplant Day: Receiving the Gift

THE INFUSION

- Received **two umbilical cord blood units**—one from a baby boy and one from a baby girl
- Each came from a family who donated their **baby's cord blood at birth**
- The infusion lasted **two hours**—with vital signs monitored throughout

Day Zero—the start of my new blood and immune system

HOW IT FELT

- Hopeful after months of treatment
- Deeply grateful to donors I can never thank
- Ready for the long recovery ahead

THE WORK I COULDN'T SEE

Before the units reached my room, teams behind the scenes had collected, banked, shipped, and prepared them for infusion.

Two babies and their families gave me a second chance



FEBRUARY–MARCH 2015 • FRED HUTCH • SEATTLE, WA

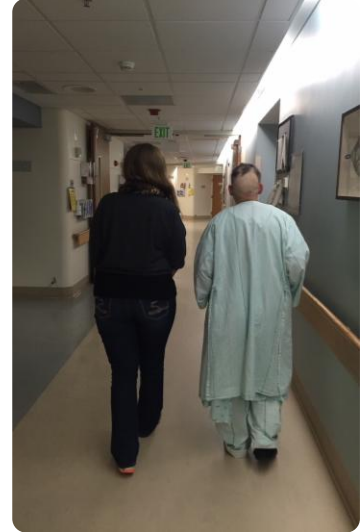
29 Days on the Transplant Unit: Waiting for Engraftment

WHAT MY BODY WENT THROUGH

- **Viral and bacterial infections**—including cytomegalovirus (CMV) and *C. difficile*—causing frequent fevers
- **Mucositis, nausea, and vomiting**—requiring IV nutrition (TPN)
- **Dangerously low blood counts**—requiring frequent blood transfusions and causing persistent fatigue
- **Acute graft-versus-host disease (GVHD)**—donor immune cells attacking my body
- **Severe edema, fainting, and loss of strength**—from fluid overload, low blood counts, and medication effects

Every small win counted—a walk down the hall, the return of my appetite

Discharged knowing recovery would be long—but not what still lay ahead



FEBRUARY–MAY 2015 • FRED HUTCH • SEATTLE, WA

The First 100 Days: Constant Care, Successful Engraftment

RECOVERY NEAR THE TRANSPLANT CENTER

- Pete Gross House—housing for transplant patients near clinic and hospital
- Near-daily trips to the clinic for labs, blood transfusions, and appointments
- Around-the-clock medications and infusions—including immunosuppressants
- Multiple readmissions for acute GVHD

A NEW IMMUNE SYSTEM TAKES HOLD

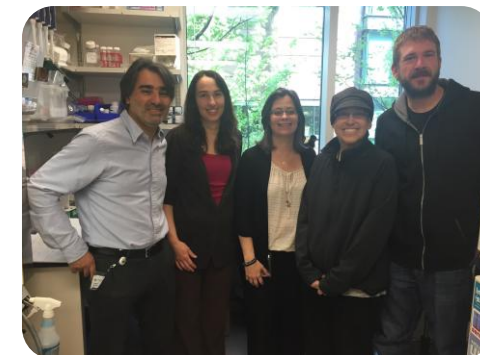
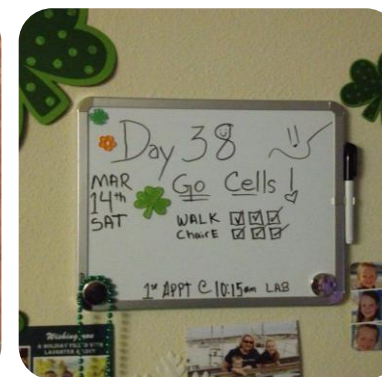
Successful engraftment—the baby boy's cord blood unit became dominant

Blood type changed—from A+ to O+

Rebuilding from the ground up—vulnerable to infection; childhood vaccinations repeated one and two years after transplant

Before leaving Seattle, I toured the **Delaney cord blood lab** and saw the research behind my trial

After 100 days, I returned to California for post-transplant care at Stanford



The Recovery I Wasn't Prepared For

THE FIRST YEAR AFTER TRANSPLANT

- **Frequent viral, bacterial, and fungal infections**—with almost no immune defenses
- **CMV reactivation**—triggering a severe neurologic complication
- **ADEM diagnosis**—widespread inflammation damaged myelin in my brain and spinal cord
- **Quadriplegia**—loss of movement and independence

THE ROAD BACK

Months of hospitalization—bedbound and fully dependent on others

Intensive rehab—inpatient at a spinal cord injury center, then at home, relearning to move

Long recovery—many abilities returned; some impairments remain



The years since have brought healing, adaptation, and post-traumatic growth



Grateful for Each New Day

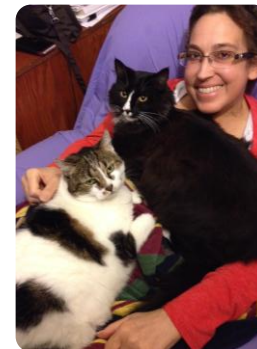
Celebrating life—milestones, family, travel, and everyday moments



Advances in cancer care—researchers, Shared Resources teams and core facilities, technology, and funding that helped save my life



My village—my mom and my partner Benny, my two amazing caregivers, and the family and friends who carried me through



The people who got me here—my teams at Kaiser, Stanford, and Fred Hutch, together with the cord blood donors and their families—gave me the gift of more time



Turning My Experience into Impact

Supporting patients and caregivers through education, mentorship, and advocacy



Blood Cancer United

BMTinfonet.org
BLOOD & MARROW TRANSPLANT INFORMATION NETWORK

TRIAGE
CANCER

nmdp
FIND CURES. SAVE LIVES.

ACCC
Association of Community Cancer Centers

cure®

CANCER SUPPORT
COMMUNITY

nbmtLINK
National Bone Marrow Transplant Link
30 YEARS 1988-2018

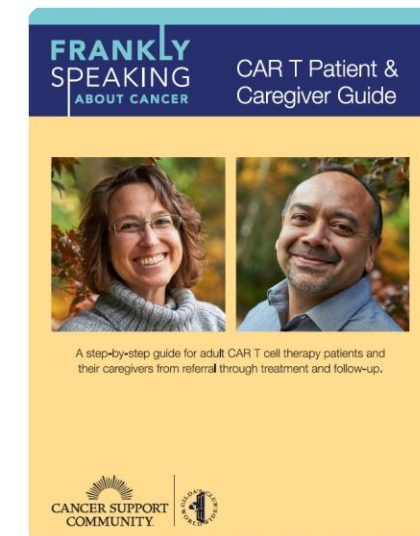
GRYT
HEALTH

IMERMAN
ANGELS

CANCER
RESEARCH
INSTITUTE

CANCER
HOPE
NETWORK

Bloodworks
Northwest



The People Behind the Science

Meeting some of the Shared Resources teams connected to my trials,
and honoring the many others who advance discovery

X150: Product #150



Cores Supporting Breakthrough Science

Fred Hutch Shared Resources

Antibody Technology	Electron Microscopy	Immune Monitoring
Biospecimen Processing & Biorepository	Experimental Histopathology	Preclinical Imaging
Cellular Imaging	Flow Cytometry	Proteomics & Metabolomics
Clinical Research Specimen Processing	Genomics & Bioinformatics	Therapeutic Products Program
Comparative Medicine		

Cancer Consortium Partner Institutions

Biostatistics Consulting & Collaboration Center
Collaborative Data Services
Prevention Center
Metabolomics
Translational Bioimaging Core

Fred Hutch Scientific Divisions

Co-Operative Center for Excellence in Hematology	Epidemiology
Cellular Bioenergetics	Nutrition Assessment
Clinical Research Support	Specialized Pathology
Infectious Disease Innovation Center	Translational Pathology
Mouse Development Lab	Vector Production

I Saw the Treatment. Later, I Saw the Work Behind It

WHAT I SAW—AND WHAT I COULDN'T SEE

- As a patient, I saw only **one part of the story**. I saw my doctors, nurses, treatments, and test results
- **Shared Resources teams** supported the laboratory and research work behind my clinical trials

WHAT I LEARNED LATER

- The Shared Resources teams I met brought **specialized expertise**
- Many other teams contribute in ways patients **may never see**

I didn't see their work then, but it helped make my survival possible



Thank You

Grazie

Shukran

Danke

Merci

Gracias

Mahalo

Work like yours helped give me the gift of more time.

Every contribution helps move science forward,
whether it reaches a patient's bedside or builds knowledge for the future.

To the heroes behind the scenes, thank you.

Shared Resources teams make discovery possible.

I am living proof.

Questions? I'd love to hear from you.

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