



LLS TAP

THERAPY ACCELERATION PROGRAM

LORE GRUENBAUM, VP, TAP
JAVEED FROOZAN, VP, BD & SA

December 2021

BEATING CANCER IS IN OUR BLOOD.



LEUKEMIA &
LYMPHOMA
SOCIETY®

The mission of The Leukemia & Lymphoma Society (LLS) is to cure leukemia, lymphoma, Hodgkin's disease and myeloma, and improve the quality of life of patients and their families.

We fund **RESEARCH** to advance lifesaving treatments.

We provide patients, survivors, caregivers, families and healthcare professionals with hope, guidance, **EDUCATION** and **SUPPORT**.

We drive **ADVOCACY** for policies that protect patient access to lifesaving treatment.



Approximately every **3 minutes** someone in the U.S. is diagnosed with blood cancer



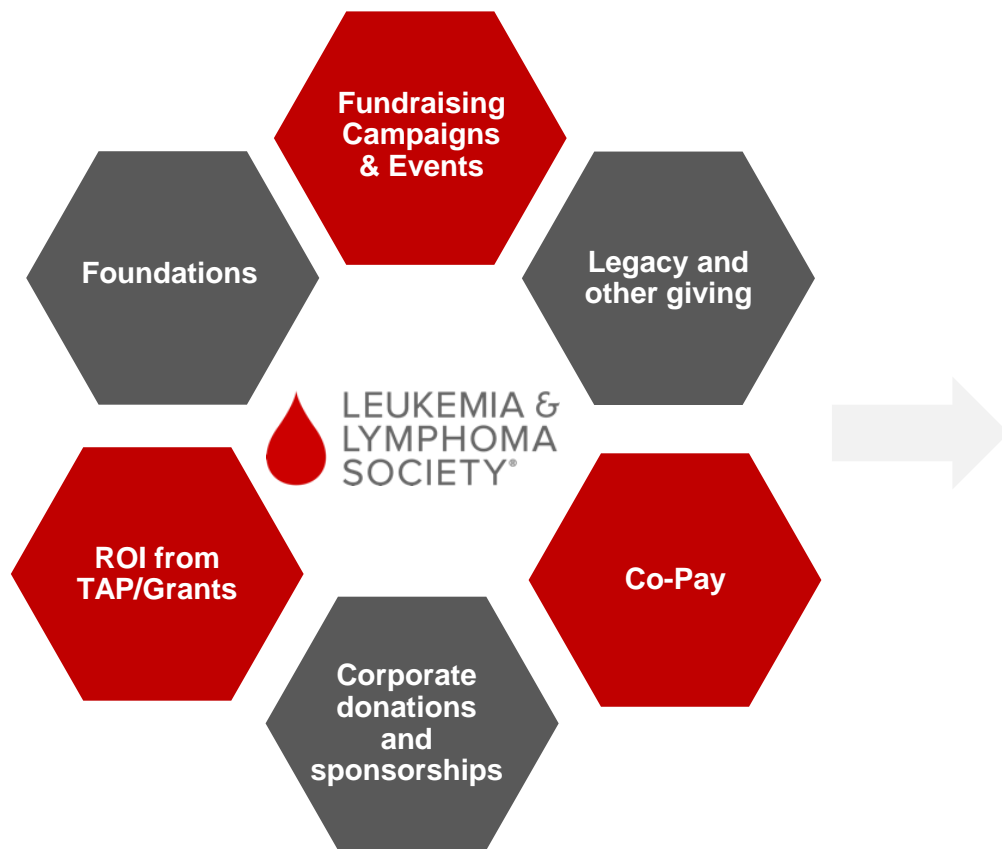
Nearly **1.4 million** people in the U.S. are living with or in remission from leukemia, lymphoma or myeloma



About **30 percent** of blood cancer patients still do not survive five years after diagnosis



About **40 percent** of all pediatric cancers are blood cancers



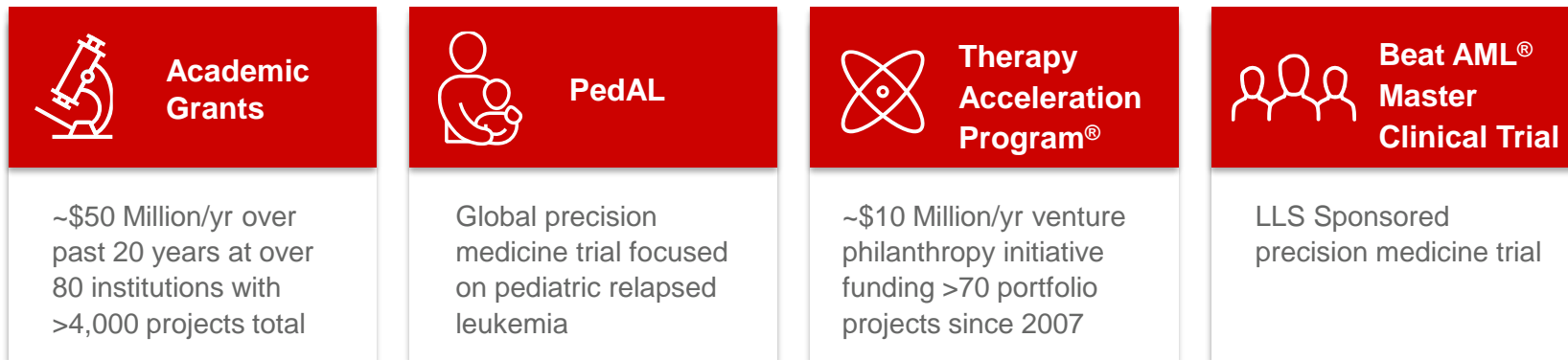
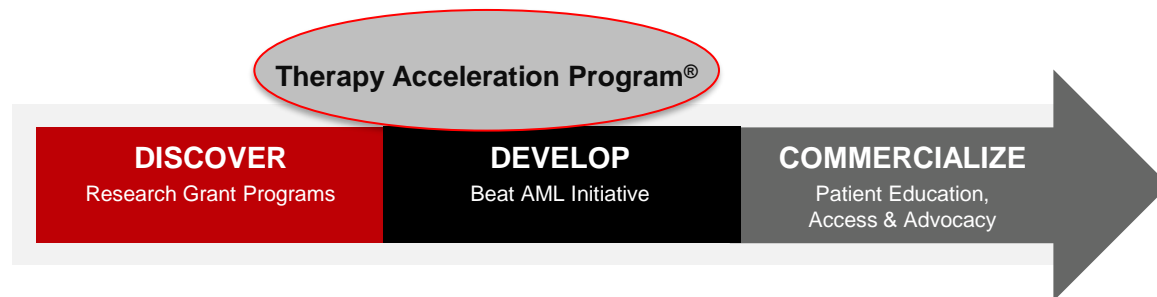
OUR IMPACT

- Invested nearly \$1.3 billion in research and development worldwide since founded in 1949
- Helped advance 52 of 60 FDA approved blood cancer drugs
- Supported >93,000 patients since inception
- Responded to 20,000 inquiries in 2019

LLS GLOBAL RESEARCH AND DEVELOPMENT FOCUS

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Research and development programs and clinical trials using LLS resources



LLS THERAPY ACCELERATION PROGRAM (TAP)

Venture philanthropy funding to support novel therapies

Established in 2007

>\$125 Million invested to date

- Biotech: >\$90 Million
- Institutions: ~\$35 Million
- >70 financings of companies and assets
- >20 assets currently in active development

3 FDA-Approved Therapies

- Vyxeos (AML)
- Yescarta (DLBCL, tFL, PMBCL)
- Elzonris (BPDCN)

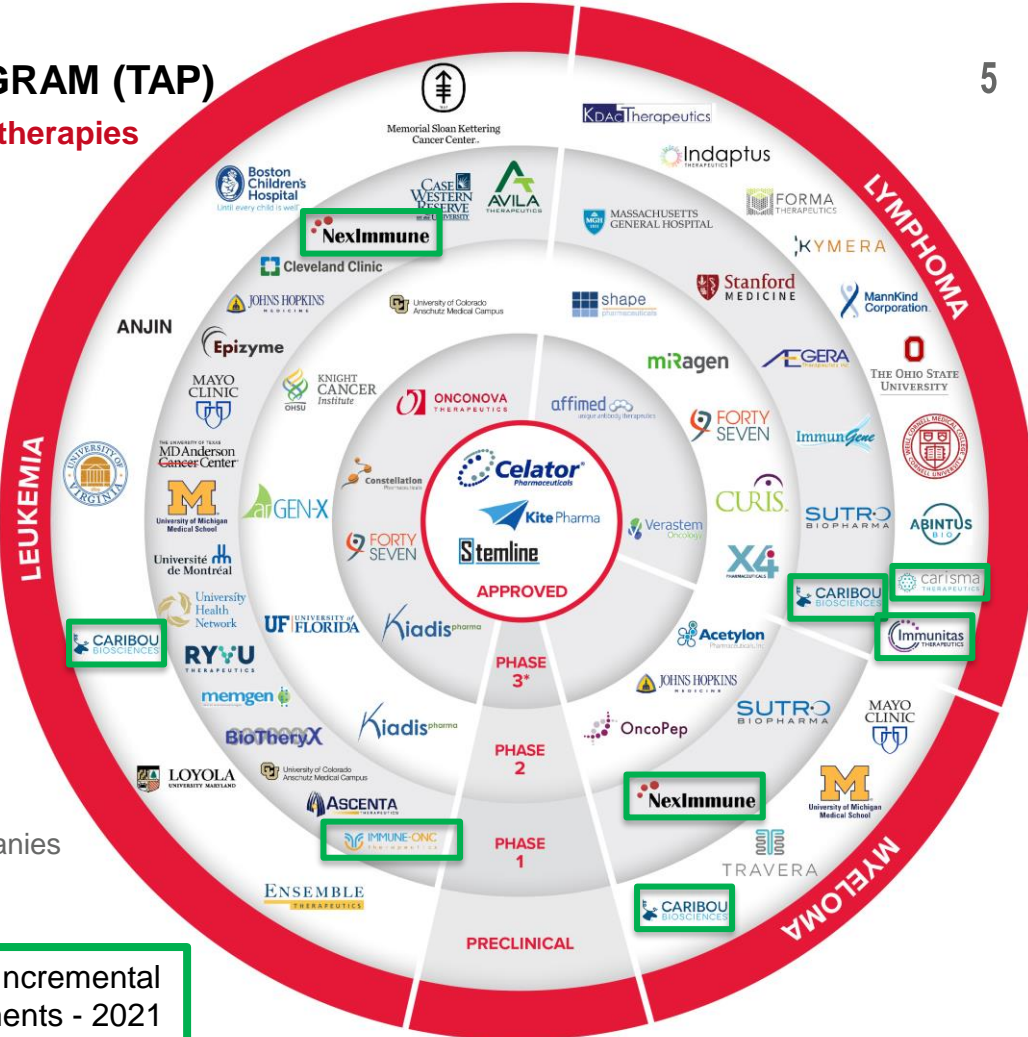
ROI Focus:

- FDA Approvals
- Assets in clinical development
- Strategic transactions & financing for portfolio companies
- Financial ROI to LLS

www.LLS.org/therapy-acceleration-program

BEATING CANCER IS IN OUR BLOOD.

New + Incremental
Investments - 2021

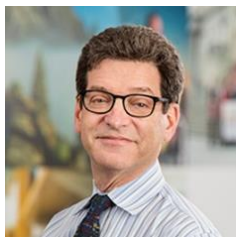


*Includes Phase 2 registration-enabling studies



Lore Gruenbaum, PhD
VP, TAP

- 20 years drug discovery & clinical development
- VP, Gotham Therapeutics; Exec Dir, Applied Biomath
- Biomarker Head, Virology, Roche; Group Leader, BI
- Yale postdoctoral work, principal investigator and collaborator on several SBIR grants



Lee Greenberger, PhD
SVP, Chief Scientific Officer

- 20 years big pharma and biotech
- Oversight responsibility for >\$50 M annual research budget
- Advanced > 10 oncology therapeutics into the clinic
- Search & due diligence experience with big pharma



Javeed Froozan, MBA, BS
VP, Business Development

- 25 years biopharma and health technology value creation
- Sr. Dir, Emergent BioSolutions, Multiple start-ups/exits, 2 IPOs
- Business lead on EBS-Trubion M&A transaction. Alliance Manager for Pfizer relationship
- Strategic Investments, M&A, Business Development, Asset Management, and Economic Development



Blaine Robinson, PhD
Executive Director, TAP

- 15 years research & clinical development in blood cancer
- Search & Diligence on 100+ projects
- Scientific lead for over 20 TAP projects including Constellation, Kymera, Ryvu & most recently Abintus, Caribou & Immune-Onc
- Pediatric leukemia researcher, Children's Hospital of Philadelphia



Jun Xu, PhD
Executive Director – TAP Lead

- 20 years oncology/immunology drug discovery/development
- Search & Diligence on 100+ projects
- Scientific lead for over 20 TAP projects including multiple high impact ones, such as Stemline, Kite, argenX, Forty Seven & most recently Carisma

Therapy Acceleration Program Committee: <https://www.lls.org/therapy-acceleration-program/oversight>

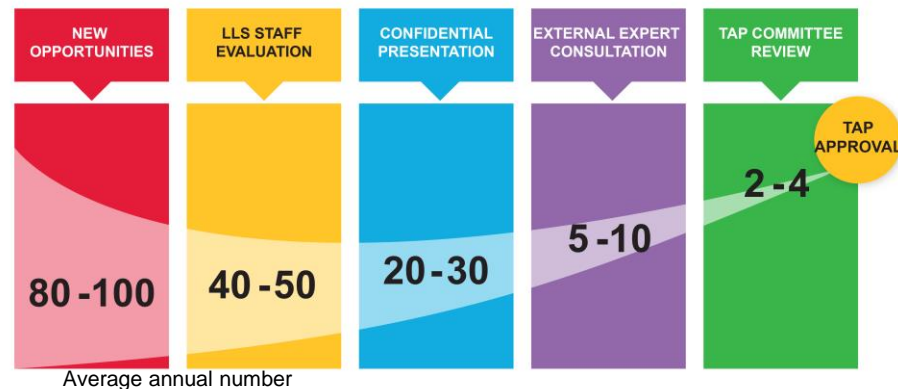
TAP GOALS & INVESTMENT STRATEGY

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Accelerate innovative blood cancer therapies and generate ROI for LLS mission

Focus on high-value assets:

- Existing and emerging populations with high unmet needs
- Gaps in current and emerging treatment landscape
- Innovative science, first-in-class assets
- First-in-heme/onc and registration trials
- Strong intellectual property, management, and finances



2 PATHS TO CO-INVEST WITH INVESTORS AND VENTURE PHILANTHROPIES



Strategic

- Range of Investment: \$2 Million to \$10 Million
- Presentation to TAP Committee
- Typically, 3-6 months to reach TAP Committee



Opportunistic

- Target Investment: \$500,000
- LLS TAP team briefs TAP Committee Chair
- Transaction completion in 1-3 months

Investment Side Letter & Research Advisory Committee

Key features of LLS TAP Investment Side Letter

- Cites LLS Mission focus and company's focus and assets in blood cancer
- Investment amount on same terms and conditions as other investors, and use of proceeds (less detail for public companies)
- Exclusion of fees on LLS proceeds to investment banks and other intermediaries (via waiver, decreased total load, or refund to company)
- Information & observer rights (private firms)
- Research Advisory Committee (RAC) structure for recurring meetings between TAP team and company to discuss corporate and program progress – Company retains control of program
- Company participation in LLS events, publication review, and evaluate providing research materials to PI's.

Side letter captures the mission-driven collaborative nature of the relationship between LLS TAP and the partner companies

TAP VALUE ADD TO BIOTECH COMPANIES

TAP-funded companies benefit from LLS blood cancer insight

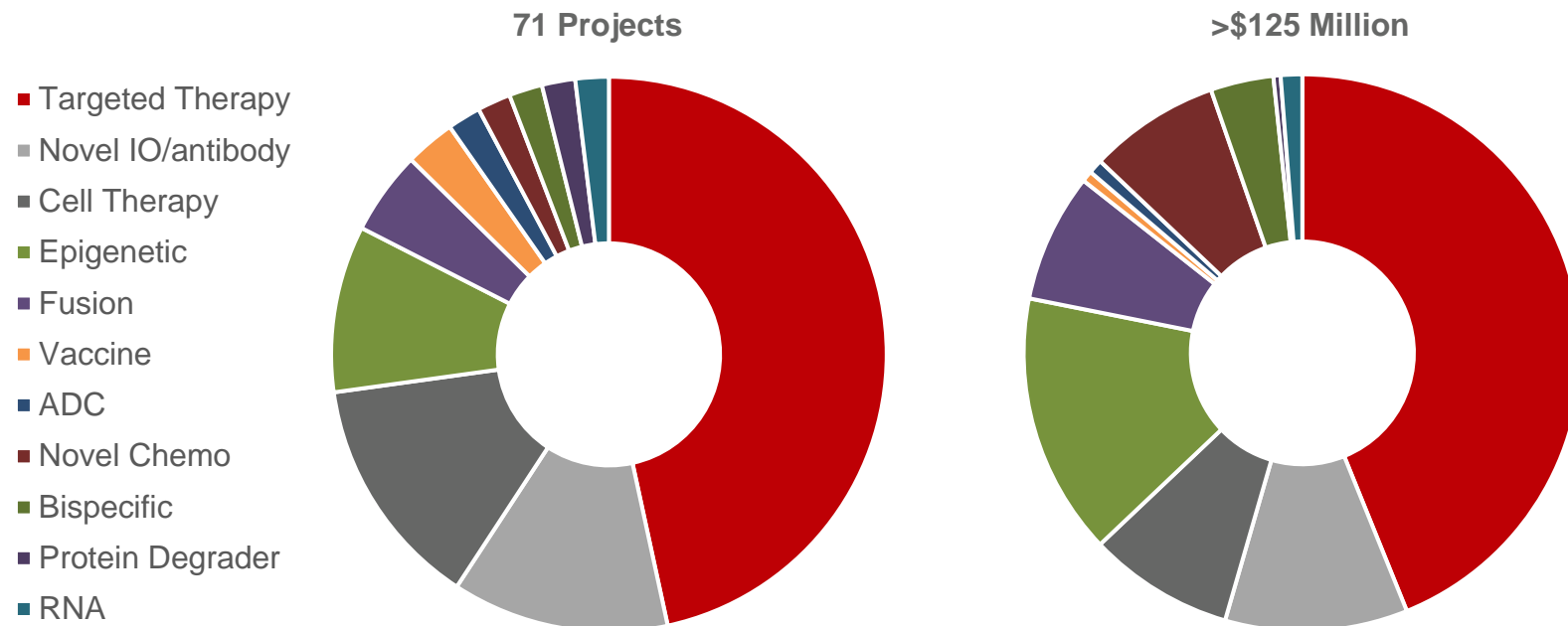
- Deep knowledge of indications and rapidly changing SoC
- Unique scientific, clinical, and drug development expertise
- Patient access services to enable understanding of patient needs
- Immediate access to extensive KOL network
- Pharmaceutical, biotech, and research institution partner connections
- Regulatory insight through LLS initiatives (Beat AML Master Clinical Trial®)

TAP record of success provides scientific & investment credibility, and visibility enabling companies to raise additional funds.

TAP PORTFOLIO THERAPEUTIC PLATFORMS FUNDED (2007-2021)

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Portfolio is aligned with strong industry focus on Targeted Therapy and reflects growing interest in Cell and IO Therapies in blood cancer



TAP PORTFOLIO INVESTMENTS IN ACUTE MYELOID LEUKEMIA (AML)

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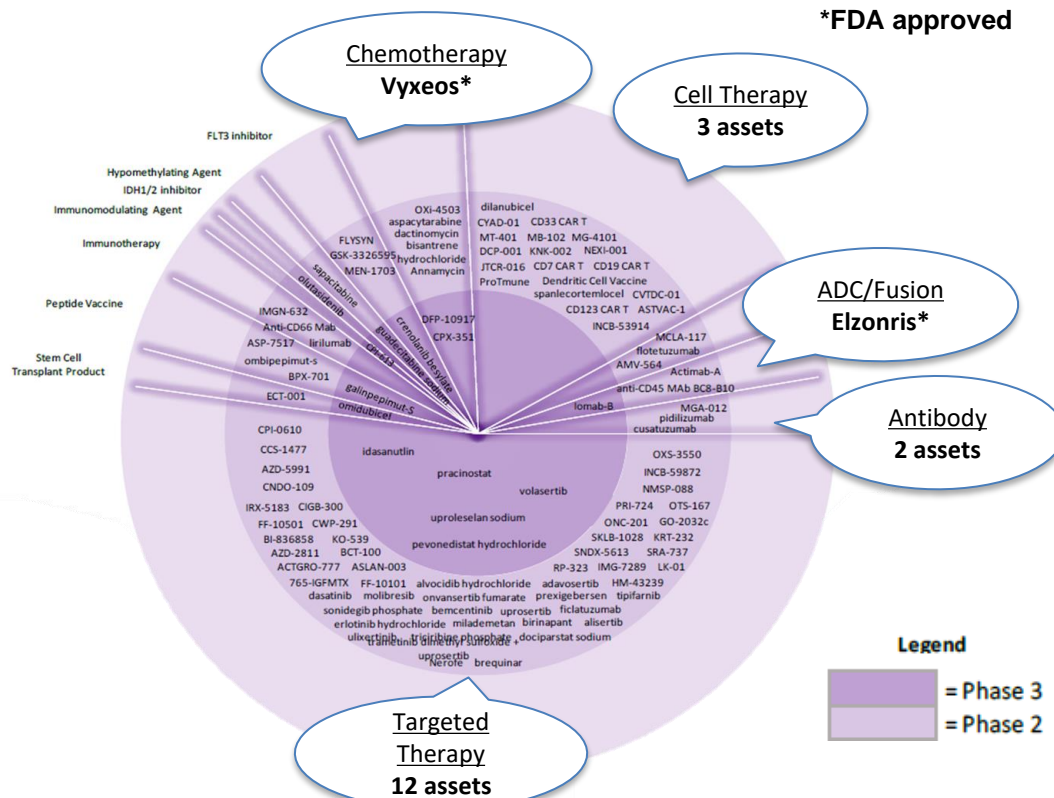
TAP team understands & successfully invests in complex therapeutic areas

High Unmet Medical Need

- 72,000 newly diagnosed in 8 major markets (2019)
- >10,000 deaths per year in US
- Complex, heterogeneous disease
- Ineffective long-term disease control with current therapies
- Elderly patients not fit for chemo
- Growing use of targeted therapies and combinations



































Significant Market Opportunity




- Global AML market \$1.4 Billion (2019)
- CAGR 13.6% (projected to 2029)



TAP PORTFOLIO ASSETS IN DEVELOPMENT

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Therapy	Target/Modality	Indications	Preclinical	Phase 1	Phase 2	Phase 2 Reg / Phase 3	FDA status
Magrolimab + Azacitidine	CD47 antibody	MDS				 FortySeven ¹	  
AFM13	CD30/CD16A bispecific engager	PTCL					
Pelabresib + Ruxolitinib	BET small molecule	MPN				 Constellation ²	 
Duvelisib	PI3Kδ/γ small molecule	PTCL				 Verastem ³ Oncology	 
Magrolimab + Rituximab	CD47 antibody	DLBCL			 FortySeven ¹		
Cusatuzumab + Azacitidine	CD70 antibody	AML			 argenx		
KO-539	Menin small molecule	AML		 KURA ⁴ ONCOLOGY			
STRO-001	CD74 antibody drug conjugate	NHL/MM		 SUTRO BIOPHARMA			 (MM)
Mavorixafor + Ibrutinib	CXCR4 small molecule	Waldenström macroglobulinemia		 X4 THERAPEUTICS			
RVU120	CDK8/19 small molecule	AML/MDS		 RYVU THERAPEUTICS			
PVX-410 + ACY-241 +/- Len	XBP1/CD138/CS1 vaccine	Smoldering myeloma		 OncoPep			
NEXI-001	T cell therapy	AML		 NexImmune			
NEXI-002	T cell therapy	MM		 BioTherX			
BTX-A51	CK1-α/CDK7/CDK9 small molecule	AML/MDS		 IMMUNE-ONC THERAPEUTICS			
IO-202	LILRB4 antibody	AML/CMML		 CARIBOU BIOSCIENCES			
CB-010	CD19/PD1 KO allogeneic CAR	NHL					
KT-413	IRAK1MiD degrader	DLBCL	 KYMERA				
KT-333	STAT3 degrader	Heme malignancies	 Immunitas THERAPEUTICS				
IMT-009	CD161 antibody	NHL					
TBD	<i>in vivo</i> CAR	TBD	 ABINTUS				
TBD	CAR macrophage	TBD	 carisma THERAPEUTICS				

 Orphan Drug Designation
 Fast Track Designation
 Breakthrough Therapy Designation

1: Acquired by Gilead ♦ 2: Acquired by Morphosys ♦ 3: Duvelisib acquired by Secura Bio ♦ 4: Licensed from University of Michigan

Updated August 2021

TAP FUNDED ASSETS CREATE VALUE

TAP portfolio partners have had successful M&A, collaboration and licensing transactions

Transactions
>\$20 Billion

SIGNIFICANT EQUITY FINANCING RAISED CONCURRENT WITH OR POST- LLS TAP FUNDING

Equity since TAP Funding*	TAP Portfolio Company
>\$1 Billion	argenx Epizyme
>\$500 Million	Constellation ¹ Kura ² Kymera ²
\$250-\$500 Million	Caribou ² Curis Forty Seven ³ Sutro
\$100-\$250 Million	Affimed BioTheryx ² Neximmune ² X4 ²
\$50-\$100 Million	Carisma ² Immune-Onc ² Immunitas ² Ryvu WindMIL ²
<\$50 Million	Abintus ² Indaptus ² OncoPep ²

KEY POINTS

LLS TAP has established record of success

- Targeting unmet medical needs
- Leading to FDA approvals of life changing therapeutics
- Creating value for patients, companies and ROI for the LLS mission

LLS would like to expand the reach & impact of the TAP program

- Leverage its unique expertise in novel collaborations
- Attract more companies and investors to blood cancer indications
- Expand TAP capacity to support the most promising assets

For more information, contact:

Lore Gruenbaum, PhD 914.821.8361 | Lore.Gruenbaum@LLS.org

Javeed Froozan, MBA 914.821.8817 | Javeed.Froozan@LLS.org



TAP SUCCESS STORIES

BEATING CANCER IS IN OUR BLOOD.



TAP SUCCESS: NOVEL LIPOSOMAL CYTOTOXIC THERAPY

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Vyxeos® is the first FDA-approved treatment for two types of poor-prognosis AML (2017)

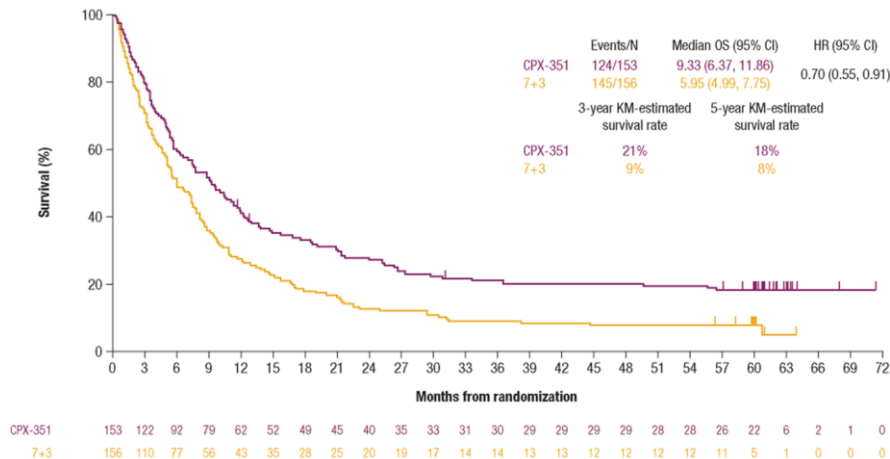


**ACQUIRED BY JAZZ PHARMA
FOR \$1.5 BILLION IN 2016**

LLS TAP PROVIDED:

\$9.15 MILLION ASSET FUNDING

ROI: \$25.3 MILLION



Five-year final results of a phase 3 study of CPX-351 versus 7+3 in older adults with newly diagnosed high-risk/secondary AML

J. Lancet et al., ASCO 2020

TAP SUCCESS: CD19 CHIMERIC ANTIGEN RECEPTOR (CAR) T-CELL THERAPY

PAGE 19

Yescarta® is the first FDA-approved CAR-T Therapy in NHL (2017)

LLS has invested > \$80 M in Cellular Immunotherapy since 1998

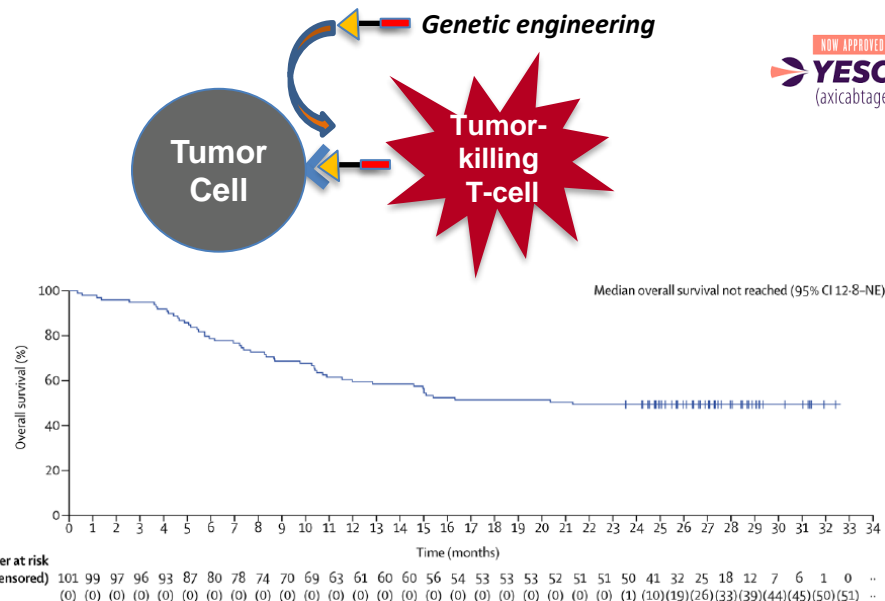


**ACQUIRED BY GILEAD
FOR \$11.9 BILLION IN 2017**

LLS TAP PROVIDED:

\$2.5 MILLION ASSET FUNDING

ROI: \$6.25 MILLION



Long-term safety and activity of axicabtagene ciloleucel in refractory large B-cell lymphoma (ZUMA-1): a single-arm, multicenter, Ph 1-2 trial

Locke et al. 2019. Lancet Oncology

TAP SUCCESS: NOVEL TARGETED CD123 FUSION PROTEIN

PAGE 20

Elzonris® is the first approved therapy for rare blood cancer indication BPDCN (2018)



**ACQUIRED BY MENARINI GROUP
FOR \$677 MILLION IN 2020**

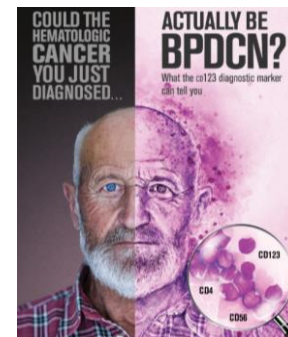
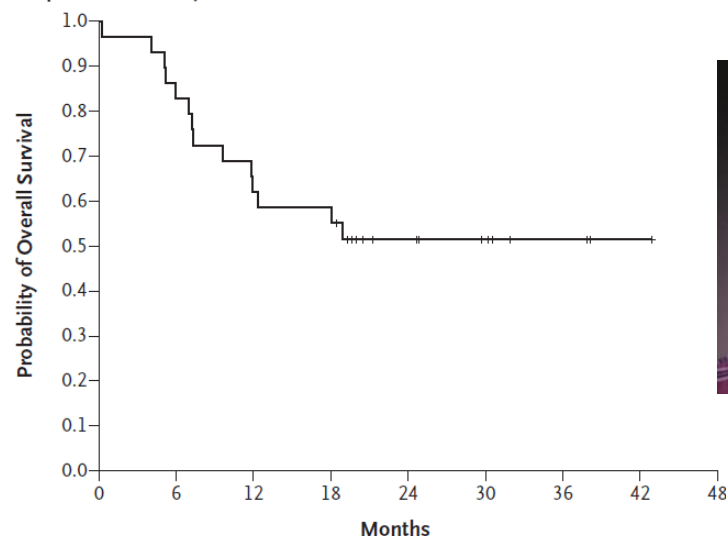
LLS TAP PROVIDED:

\$2.9 MILLION NET ASSET FUNDING

ROI: \$7.25 MILLION TO DATE



B Kaplan–Meier Analysis of Overall Survival



Treatment outcomes of 29 patients with blastic plasmacytoid dendritic cell neoplasm (BPDCN) who received first-line treatment with tagraxofusp: Probability of overall survival

Pemmaraju et al., 2019. NEM

TAP SUCCESS: MAGROLIMAB (ANTI-CD47 ANTIBODY)

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Magrolimab + Azacitidine induces high response rates in MDS and AML

Initiation of registration-enabling studies in 2020

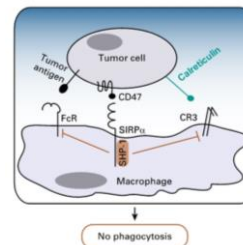


ACQUIRED BY GILEAD
FOR \$4.9 BILLION IN 2020

LLS TAP PROVIDED:

\$4.175 MILLION ASSET FUNDING
\$3 MILLION EQUITY INVESTMENT

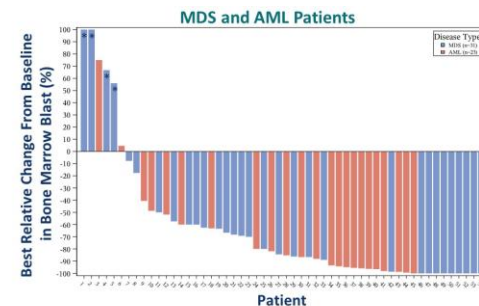
ROI: >\$40 MILLION



Magrolimab blocks the
'don't eat me' signal
on tumor cells

Best Overall Response	1L MDS N=33	1L AML N=25
ORR	30 (91%)	16 (64%)
CR	14 (42%)	10 (40%)
CRi	NA	4 (16%)
PR	1 (3%)	1 (4%)
MLFS/marrow CR	8 (24%) 4 with marrow CR + HI	1 (4%)
Hematologic improvement (HI)	7 (21%)	NA
SD	3 (9%)	8 (32%)
PD	0	1 (4%)

Response assessments per 2008 IWG MDS criteria and 2017 AML ELN criteria. Patients with at least 1 post-treatment response assessment are shown; all other patients are on therapy and are too early for first response assessment, except for 2 MDS patients not evaluable (withdrawal of consent) and 3 AML patients (1 AE, 2 early withdrawal).



- Magrolimab + AZA induces a 91% ORR (42% CR) in MDS and 64% ORR (56% CR/CRi) in AML
- Responses deepened over time with a 56% 6-month CR rate in MDS patients (assessed in all patients 6 months after initial treatment)
- Median time to response is 1.9 months, more rapid than AZA alone
- Magrolimab + AZA efficacy compares favorably to AZA monotherapy (CR rate 6-17%^{1,2})

1. Azacitidine USPL 2. Fenaux P, et al. *Lancet Oncol*. 2009;10(3):223-232.

PRESENTED AT: 2020 ASCO
ANNUAL MEETING

#ASCO20
ON BEHALF OF THE AMERICAN SOCIETY OF CLINICAL ONCOLOGY

PRESENTED BY: DAVID A. SALLMAN, MD

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TAP SUCCESS: KO-539 (MENIN INHIBITOR)

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First-in-class inhibitor of the menin-MLL interaction in Ph1 trial for patients with relapsed/refractory AML



**PRECLINICAL COMPOUNDS
RELATED TO KO-539 LICENSED
TO KURA ONCOLOGY IN 2015**

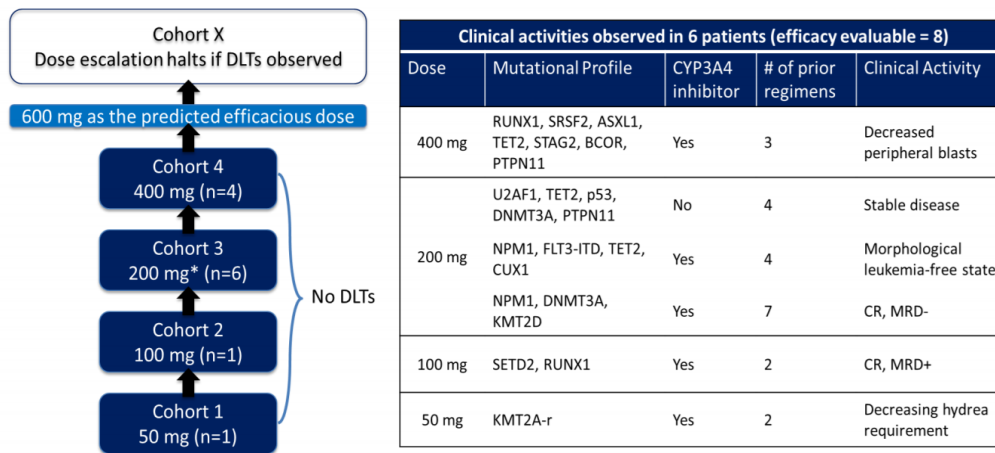
LLS TAP PROVIDED:

**\$6.31 MILLION ASSET FUNDING
TO U MICHIGAN**

**ROI: EQUITY: 26,000+ SHARES
+ \$26,000+ CASH TO DATE**

BEATING CANCER IS IN OUR BLOOD.

KO-539 Demonstrates Encouraging Early Clinical Activity



*Expanded to characterize PK

Data as of 02 November 2020



American Society of Hematology

Wang et al. ASH 2020 #115

- Grants initially and then TAP supported preclinical development (including chemistry) of menin-MLL interaction inhibitors by Jolanta Grembecka at University of Michigan and licensing of assets to Kura Oncology in Dec 2014
- Phase 1/2a trial for R/R AML with MLL fusions/NPM1 mutations
 - First patient dosed in Sept 2019
 - Initiated expansion cohorts in July 2021



TAP SUCCESS: PELABRESIB (BET INHIBITOR)

Pelabrelib + Ruxolitinib induces high spleen volume response rates in JAK-naïve myelofibrosis

Initiation of registration-enabling study in 2020



**ACQUIRED BY MORPHOSYS
FOR \$1.7 BILLION IN 2021**

LLS TAP PROVIDED:

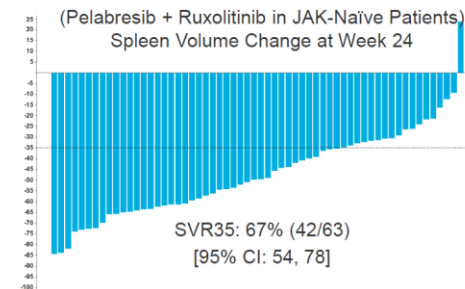
\$7.35 MILLION ASSET FUNDING

ROI: \$7.35 MILLION TO DATE

First Novel Mechanism Beyond JAK Inhibitors to Demonstrate POC in 1L MF

- Robust response rate to date in trial of > 60 1L patients
- Strong activity observed as a monotherapy and add on to ruxolitinib 2L+ patients
- Translational data and improvement in anemia supports disease-modifying potential
- Pelabresib has been generally well-tolerated to date
- Phase 3 trial (MANIFEST-2) under way

Data cutoff September 29, 2020 of MANIFEST trial
SVR35 = ≥35% spleen volume reduction from baseline



	1L setting (Arm 3)			
	Upfront combo with ruxolitinib	COMFORT-1*	COMFORT-2**	SIMPLIFY-1***
24-Week SVR35 Rate	67% (42/63)	41.9%	32%	29%

SVR35 response = ≥35% spleen volume reduction (Measured at 24 Weeks)

* COMFORT-1: A Double-blind, Placebo-controlled Trial of ruxolitinib for Myelofibrosis. Verstovsek, S., et al; N Engl J Med 2012;366:799-807.

** COMFORT-2: A Double-blind, Placebo-controlled Trial of ruxolitinib vs. Best Available Therapy (BAT) for Myelofibrosis. Harrison, C., et al; NEJM 2012; 336: 787-798.

*** SIMPLIFY-1: A Phase III Randomized Trial of Mometinib Versus ruxolitinib in Janus Kinase Inhibitor-Naïve Patients With Myelofibrosis. Mesa, R., et al. J Clin Oncol 2017; 35(34):3844-3850.

THERAPY ACCELERATION PROGRAM COMMITTEE

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Casey Cunningham, MD (Chair) +
Santé Ventures

Stephen Ansell, MD, PhD
Mayo Clinic Rochester

Madhav Dhodapkar, MBBS
Emory University

Courtney DiNardo, MD
The University of Texas MD Anderson Cancer Center

Giulio Draetta, MD, PhD
The University of Texas MD Anderson Cancer Center

Christopher Flowers, MD +
The University of Texas MD Anderson Cancer Center

Patrick Fortune, PhD, MBA
Partners Healthcare Systems

Tapan Kadia, MD
The University of Texas MD Anderson Cancer Center

Laura Kaufman, PhD, DABT
Private Consultant

Ronald Levy, MD
Stanford University School of Medicine

Fred Locke, MD
Moffitt Cancer Center

Ruben Mesa, MD +
UT Health San Antonio

Vern Norviel, JD
Wilson Sonsini Goodrich & Rosati

Daniel Pollyea, MD
University of Colorado

Jim Reddoch, PhD
Royalty Pharma

Robert Rosen, JD +
Grewhawke Capital Advisors

Steven Rosen, MD
City of Hope

Robert Spiegel, MD
Spiegel Consulting LLC

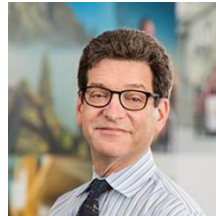
Keith Stewart, MD
Princess Margaret Cancer Centre

David Weinstock, MD
Dana-Farber Cancer Institute

THANK YOU!

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LLS Research Grants and TAP



Lee Greenberger, PhD
CSO & SVP Research



Michael Yaffe, PhD
VP of Research



Erik Nelson, PhD
Exec. Dir. Research



James Kasper, MS
Exec. Dir. Research



Orsi Giricz, PhD
Dir. Research



Lore Gruenbaum, PhD
VP of TAP



Jun Xu, PhD
Exec. Dir. TAP Lead



Blaine Robinson, PhD
Exec. Dir. TAP



Javeed Froozan, MBA
VP of BD & Alliance