UNCANCER THE WORLD

Engineering the Best T-cell Medicines for Solid Tumor Patients
This presentation contains forward-looking statements. All statements other than statements of historical facts, including statements regarding our future results of operations or financial condition, business strategy, and plans and objectives of management for future operations, are forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as “believe,” “will,” “may,” “estimate,” “continue,” “anticipate,” “intend,” “should,” “plan,” “expect,” “predict,” “could,” “potentially,” or other similar expressions. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends, which we believe may affect our financial condition, results of operations, business strategy, and financial needs.

These statements involve known and unknown risks, uncertainties, and other factors that may cause our actual results of operation, financial condition, levels of activity, performance or achievements to be materially different from the information expressed or implied by these forward-looking statements. Although we believe that the expectations reflected in the forward-looking statements contained in this presentation are reasonable, we caution you that these statements are based on a combination of facts and factors currently known by us and our projections of the future, about which we cannot be certain. Moreover, we operate in a competitive and rapidly-changing industry in which new risks may emerge from time to time, and it is not possible for management to predict all risks.

We cannot assure you that the forward-looking statements in this presentation will prove to be accurate. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified time frame, or at all. We do not undertake to update any of the forward-looking statements after the date of this presentation, except to the extent required by law.
The T cell is the body’s most powerful defense. The role of CAR T* in hematological cancers is proven. We are engineering the next generation of CAR T cells for solid tumors.

We are positioned to deliver cures due to our:

- People
- Platform
- Pipeline & Products

* CAR T - Chimeric antigen receptor T cell
Differentiated pipeline & programs

- Tmunity has the most diverse solid tumor CAR T cell therapy pipeline, including first in class assets
- Along with our partners at U Penn* we have
  - significant experience in treating solid tumor patients with CAR T
  - deep understanding of solid tumor safety and efficacy challenges
  - good insights into potential solutions

Proprietary technology & cell engineering

- Tmunity has accessed and developed innovative technologies and capabilities
  - in house cell and vector manufacturing
  - cellular engineering – co-stimulators, armor, switches, payloads
  - gene editing/multiplexing capabilities
  - amassed significant intellectual property

* U Penn- University of Pennsylvania
Tmunity is a private, clinical stage, vertically integrated biotech company focusing on developing the next generation of engineered T-cell therapies for solid tumor patients.

**Foundation**
Founded in 2015 with exclusive license to UPenn cell therapy technologies (targets and platforms)

**People**
- ~80 employees; 70% with cell and gene therapy experience

**Preclinical**
- Licensed 12+ additional assets from UPenn, UCSF, and CHOP

**Clinical**
- PSMA CAR-T
- TnMUC1 CAR-T
- Meso CAR-T

**Manufacturing**
- Built viral vector and cell therapy product manufacturing

**Financing**
- $231MM raised to date
  - $21MM seed
  - $135MM A round
  - $75MM B round
An Unsurpassed Dedication to Curing Solid Tumors.
Our Founders are CAR T Pioneers from Penn...

Carl June, MD
Bruce Levine, PhD
James Riley, PhD
Anne Chew, PhD

- We share a unique bidirectional collaboration with the Cancer Cellular Immunotherapy (CCI) team at the University of Pennsylvania (Penn)
- Access to discoveries, clinical programs, cell engineering and manufacturing
- Together, a diverse and highly experienced team of translational experts

Pioneering work in HIV and CAR-T
Developed the first commercially approved CAR-T in oncology
AN UNSURPASSED DEDICATION TO CURING SOLID TUMORS.

Our Management Team is Purpose-built for Success

- Usman “Oz” Azam, MD
  President
  Chief Executive Officer

- Vijay Reddy, MD
  Executive Vice President
  Chief Research & Development Officer

- Simona King
  Executive Vice President
  Chief Financial Officer

- Jason Krentz
  Executive Vice President
  Chief Technology Officer and Head of Technical Operations

- Moji James, Esq.
  Executive Vice President
  Chief Legal and Compliance Officer

- Michael Christiano
  Executive Vice President
  Chief Business Officer

> 50 years combined experience in cell and gene therapy
Tmunity & Penn Agreement
- Exclusive T cell therapy platform and product licenses
- Selectively exclusive collaboration with June Lab
- Access to existing and new technology innovations to support advancement of current and next generation solid tumor products

Penn Center for Cellular Immunotherapies (CCI)
- Deep expertise in cell and gene therapies and tumor biology
- 193 full-time employees
- $86 million in non-industry funding over last 5 years

Infrastructure
- Penn: pre-clinical and translational research, clinical POC manufacturing
- Tmunity: development and manufacturing (vector + cell)
UNIQUE COLLABORATION BETWEEN TMUNITY & PENN UNLOCKS FUTURE PRODUCT INNOVATION.

Modular vector & cell engineering strategy + High throughput manufacturing

PSMA
- TmPSMA 01: PSMA 41bbz + dnTGFβR2
- TmPSMA 02
- TmPSMA 03: Allo

Mesothelin
- TmMSTN 01: MSTN 41bbz
- TmMSTN 02
- TmMSTN 03: Allo

TmMUC1
- TmMUC1 01: TmMUC1 CD2z
- TmMUC1 02
- TmMUC1 03: Allo
Patients are rarely cured and get caught in a costly cycle of disease progression and re-treatment

Traditional linear drug development focuses on delaying disease progression, not on a cure

Selective targeting of solid tumor cells without significant toxicity is challenging

Solid tumor microenvironments are highly complex and immuno-inhibitory, compared with hematologic malignancies

Manufacturing capabilities are limited, resulting in long vein-to-vein times and high costs
WAYS TMUNITY OVERCOMES SOLID TUMOR COMPLEXITY.

**SCIENTIFIC APPROACH**

- Selective tumor targeting
- Prolonged antitumor activity
- Defenses against immunosuppressive microenvironment
- Capacity for optimal trafficking and infiltration into tumor

**ENGINEERING PROCESS**

- Continuous innovation in process and analytical development to optimize T-cell manufacturing
- Universal platform suitable for multiple products
- Enables next-generation engineering enhancements to further optimize targeting and trafficking

**Equip T cells with a diverse and robust suite of capabilities**

**Implement highly iterative and adaptive processes**
UNIQUE PLATFORM DELIVERS MULTIPLE PRODUCTS.

Vector systems

Autologous engineering

Allogeneic engineering

Targets/Binders

Products & Franchises

Prostate
- PSMA
- PSCA

Ovarian
- TnMUC1
- Mesothelin
- Folate receptor α

Pancreatic
- TnMUC1
- Mesothelin

Breast (TNBC)
- TnMUC1

Lung
- TnMUC1
- Mesothelin

CNS
- GPC2
- EGFR/IL13 Ra2

GPC2 = Glypican 2; EGFR/IL13 Ra2 = Epidermal growth factor receptor/interleukin 13 receptor alpha2; TnMUC-1 = Tn Mucopolsaccharide-1; PSCA = Prostate stem cell antigen; PSMA = prostate specific membrane antigen
EVOLVING GENE EDITING EXPERIENCE TO ALLOGENEIC PRODUCTS.

Tmunity & U Penn/PICI: First CRISPR-based product tested in humans *

- Tmunity has developed in-house gene-editing capabilities, including multiplexing via CRISPR
- Tmunity has proven ability to manufacture a CRISPR-based product
- Tmunity is building upon current in-house gene-editing platform for translation to manufacture of future allogeneic therapies

*Stadtmauer E. et al; CRISPR-engineered T cells in patients with refractory cancer; Science. 2020 Feb 28;367(6481) PICI: Parker Institute for Cancer Immunotherapy
TECHNOLOGY ROADMAP

2021 - 2023

• Next gen product realization
• Optimization for scale
• Short vein-to-vein time
• Allogeneic Platform
  • Advanced gene editing
  • Non-viral gene delivery

• 85,000 ft² GMP multi-product facility
• 50+ employees and growing in 2021
• Vector and Cell manufacturing
• Design and operating plans reviewed with FDA
• Digital Quality system established
• Digital Manufacturing systems foundation
• Scalable to meet commercial needs
### Our pipeline:

**A RANGE OF TARGETS AND TUMOR TYPES.**

<table>
<thead>
<tr>
<th>Target Type</th>
<th>Preclinical</th>
<th>Phase 1</th>
<th>Phase 2/3</th>
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<tbody>
<tr>
<td><strong>PSMA – Prostate Cancer</strong>&lt;br&gt;• TmPSMA 01: PSMA 41bbz + dnTGFbR2</td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>TmMUC1 Positive – Lung, Pancreatic, Triple-Negative Breast, and Ovarian Cancer</strong>&lt;br&gt;• TmTnMUC1 01: TnMUC1 CD2z</td>
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<td></td>
<td></td>
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<td><strong>Mesothelin Positive – Pancreatic, Mesothelioma, Lung, and Ovarian Cancer</strong>&lt;br&gt;• TmMSTN 01: MSTN 41bbz (UPenn)</td>
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<td></td>
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<tr>
<td><strong>Folate Receptor Positive – Ovarian Cancer</strong>&lt;br&gt;• TmFRa 01: FRa 41bbz (UPenn)</td>
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<td><strong>GPC2 – Neuroblastoma</strong>&lt;br&gt;• TmGPC2 01</td>
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<td><strong>EGFR and IL-13Rα2 – Glioblastoma</strong>&lt;br&gt;• TmEGFRIL13Rα2 01</td>
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<tr>
<td><strong>Fibroblast Activation Protein Positive – Pancreatic, Ovarian, and Lung Cancer</strong>&lt;br&gt;• TmFAP 01</td>
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<tr>
<td><strong>Allogeneic programs – PSMA, TnMUC1, Meso</strong></td>
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</tbody>
</table>

*The table illustrates our research and development programs and opportunities as of December 2020. *Full pipeline not shown. **In collaboration with CHOP.
Prostate cancer may spread to other organs despite androgen deprivation therapy (ADT).

~20% of prostate cancer patients develop mCRPC within 5 years of diagnosis.

175k new cases USA per year

30% 5-year overall survival

cancer in men in the United States

Clinical Responses Observed In Patients.

Tmunity the first to demonstrate signal in a 2nd generation armored CAR T cell targeting prostate cancer.

PSMA* antigen

1. Targeting the Tumor

2. Targeting T cell inhibition

PSMA - dnTGFβR2 = Prostate-specific membrane antigen - dominant negative transforming growth factor beta receptor 2

**CRS: Cytokine release syndrome, *** PSA: Prostate specific antigen
PSMA 01 UPENN: INITIAL CLINICAL SIGNAL OBSERVED IN mCRPC.

- A first-in-human study to assess safety and preliminary efficacy
- 10 patients dosed
- A dose-dependent and LD-dependent relationship was observed with CART cell expansion, cytokine expression, CRS*, and PSA** decline

<table>
<thead>
<tr>
<th>Cohort</th>
<th>Patient numbers</th>
<th>Dose</th>
<th>Lymphodepletion (LD)</th>
<th>Dose limiting toxicity (DLT)</th>
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<tr>
<td>3</td>
<td>1</td>
<td>$1-3 \times 10^8/m^2$</td>
<td>Yes</td>
<td>1 DLT</td>
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<tr>
<td>-3</td>
<td>3</td>
<td>$1-3 \times 10^7/m^2$</td>
<td>Yes</td>
<td>None</td>
</tr>
</tbody>
</table>

- Tmunity study PSMA 02 is exploring safety and efficacy at higher doses

*CRS: Cytokine release syndrome, ** PSA: Prostate specific antigen
**EXPANSION KINETICS IN FIRST 3 COHORTS.**

Compared with CD19-based CAR T-cell expansion

The first patient in cohort 3 (first to receive LD) demonstrated increased expansion kinetics, comparable to expansion of CTL019 (CAR-T CD19) in acute lymphoblastic leukemia patients.

Source: Unpublished data, University of Pennsylvania.
Patient 1 Cohort 3.

PSA reduction of >99% with PSMA armored CAR T

- Dose 500-700 million cells with lymphodepletion
- >99% reduction in PSA noted
  - Potential for a good RECIST response
- Grade 4 CRS resolving but the patient developed enterococcal septicemia
  - The patient passed away due to sepsis
- Prostate specific immune toxicity signature decoded
- Enhanced prophylactic immune toxicity management guidance instituted
- Potential to safely dose patients at high doses with manageable toxicity and high probability of clinical response

RECIST = Response evaluation criteria in solid tumors; CRS = Cytokine release syndrome. | Source: Unpublished data, University of Pennsylvania.
PSMA 02 TMUNITY.

Program status:

- Phase 1 study – dose finding ongoing
- Despite COVID19, 10 clinical trial centers initiated in 2020 across the USA
- 6 patients dosed in 2 cohorts (including lymphodepletion)
- Evaluating split doses and modified CRS management

Future milestones:

- Identify phase 2 dose (1H 2021) and commence phase 2 trial (Q4 2021)
- Data to be presented at a major scientific conference in 2021
- Tmunity Manufacturing Platform (vector and cell) ready for phase 2 (Q2-3 2021)
- Ongoing research focused on improved safety and efficacy
  - 3rd Gen double armored CAR-T ready for IND submission (Q4 2021)
TnMUC1: IDENTIFIED AS A HIGH-VALUE TARGET.

TnMUC1 01 Program status:

- A first-in-human study to assess safety and preliminary efficacy
- 10 clinical sites initiated in 2020 across USA
- 6 TnMUC1 positive patients dosed in 2020- initial safety and cell expansion established
- Cohort 3 commenced
- Data readout (2H 2021)
Gastric epithelial cell: TnMUC1 only found in the Golgi complex as a precursor to the epithelial lining (mucin1) 

Normal tissue heavily glycosylated mucin1

Normal glycosylated mucin1

Normal carbohydrate chains

Cancer with aberrant “stumpy” TnMUC1

Ovarian cancer cell: Stumpy mucin1 (TnMUC1) generated as the enzyme process to glycosylate the mucin1 protein backbone is disabled

COSMC mutations thought to enhance the process of metastasis by permitting easy slippage of transformed cells to the extracellular space

Underglycosylated mucin1

Abnormal carbohydrate chains

TnMUC1 TARGETING ABNORMAL GLYCOSYLATION.
Program status:

• Two phase 1 studies ongoing at U Penn
  • Study 1 – Basket trial (Ovarian cancer, Lung cancer, Mesothelioma)
    • 14 patients treated, with and without lymphodepletion (LD)
    • Study 2 – 3 Pancreatic cancer patients treated
  • Expansion and trafficking of CAR-T cells demonstrated,
    • 2 Dose limiting toxicities observed at highest dose of $1-3 \times 10^9/m^2$
    • Dose, route of administration, and preconditioning optimization ongoing

Future Milestones:

• Ongoing research focused on improved safety and efficacy
  • 3rd Gen double armored CAR-T for Tmunity IND
NEXT-GENERATION PRODUCT STRATEGY.

- Increase safety
  - Cellular engineering & optimized target engagement

- Increase efficacy
  - Double armor (dnTGFβ & PD1)
  - Humanized binders (scfv)
  - Additional co-stimulation
  - Lower exhaustion and increase persistence

- Next-generation manufacturing (vector and cell)
- Allogeneic platform introduction 2022+
$231MM RAISED TO DATE.
MILESTONES FOR 2021.

Clinical Program
PSMA 02
• Phase 1 dose finding (1H 2021)
• Phase 2 initiation (Q4 2021)

Clinical Program
TnMUC1 01
• Dose expansion (2H 2021)
Meso 01
• Phase 1 completion (2H 2021)

cGMP Manufacturing Readiness
• Initiate internal cell product manufacturing (Q2-Q3 2021)

Preclinical New Targets
New IND filings (2H 2021)
• GPC2
• EGFR/IL13Ra2
LEADING THE RACE TO CURE SOLID TUMORS.

• Leaders in the field of CAR T and solid tumors
  • Unique team (Penn & Tmunity)
  • Deep domain expertise & proven track record

• Strategy that is delivering to patients
  • Deep pipeline of customized, highly engineered CAR T products in solid tumors
  • First human proof of principle data in a 2nd generation armored CAR T in solid tumors

• Rich next generation pipeline
  • Multiple customized, improved next generation CAR Ts addressing safety, efficacy, and immuno-inhibitory challenges in solid tumors
  • Establish allogeneic platform in solid tumors
UNCANCER THE WORLD

Make cures for solid tumors available to all who need them