Forward-looking statements

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.
Tmunity is creating the best T cell medicines for solid tumor patients

We are a private, clinical stage, vertically integrated biotech company developing the next generation of cutting-edge CAR-T\* immunotherapies to cure cancer and save lives

Our focus is on developing products to address some of the most challenging solid tumors

We are restoring hope for patients

*CAR-T - Chimeric Antigen Receptor T cell
**Built on a world-class foundation**

**Clinical Portfolio**
PSMA CAR-T
TnMUC1 CAR-T

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

**Foundation**
Founded in 2015 with exclusive license to UPenn cell therapy technologies

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

**Financing**
$10M seed
$135M A round
$75M B round
$231M raised to-date

**Manufacturing**
Building viral vector and cell therapy product manufacturing
Tmunity leads, others follow

✓ **First** to generate human data with an armored CAR in metastatic castrate resistant prostate cancer
  ✓ CAR targeting prostate specific membrane antigen (PSMA)
  ✓ Armor-targeting checkpoint of transformation growth factor beta (TGFβ dominant negative receptor)

✓ **First** to dose a patient with a CAR targeting a unique antigen in solid tumors (TnMUC1)
  ✓ Ovarian, pancreatic, non-small cell lung, triple negative breast

✓ **First** to safely dose patients in the U.S. with a CRISPR-engineered TCR product and demonstrate persistence of edited cells
  ✓ Initial cohort of first-in-human in sarcoma and myeloma

Nov 2020
Tmunity’s competencies:

*Positioned to overcome the problems with current therapies*

**EXPERTS IN SYNTHETIC BIOLOGY AND CELL AND GENE ENGINEERING**

**INDUSTRY LEADING AND HIGHLY INNOVATIVE PIPELINE**

**MANUFACTURING THE RIGHT PRODUCT**

**EXECUTION OF PIPELINE VIA UNIQUE MODEL**

Expanding cell therapies to patients *earlier* in the treatment paradigm of *every* cancer

*Radically reducing costs* associated with current therapies

Nov 2020
Tmunity’s innovation to disrupt the tumor microenvironment

- Optimizing how the CAR-T/TCR ‘sticks to the target’
- Making T-cells express more than one targeting ‘warhead’

- Novel co-stimulators energizing cells
- Additional signal boosting that supercharges cells

- Using CRISPR gene-editing to knock-out checkpoints
- ‘Armoring’ cells to concurrently target checkpoints
- Adding payloads to make cells persist and endure

- Breaching the protective matrix surrounding the tumor
# Building a Solid Tumor CAR T Pipeline*

<table>
<thead>
<tr>
<th>Target</th>
<th>Description</th>
<th>Pre-Clinical</th>
<th>Phase I</th>
<th>Phase II/III</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PSMA</strong> (Prostate specific membrane antigen); Prostate Cancer</td>
<td>TmPSMA 01 CAR-T</td>
<td></td>
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<tr>
<td><strong>TnMUC-1</strong> (Tn Mucopolysaccharide1); Non-Small Cell Lung, Pancreatic, Triple Negative Breast, Ovarian Cancers</td>
<td>TmTN-MUC 01 CAR-T</td>
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<tr>
<td>Undisclosed Target – Multiple solid tumors</td>
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<tr>
<td><strong>FR α</strong> (Folate receptor alpha); Ovarian cancer</td>
<td>TmFRα01 CAR-T</td>
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<tr>
<td><strong>GPC2</strong> (Glypican 2); Neuroblastoma, Small cell Lung/Neuroendocrine</td>
<td>TmGPC2 01 CAR-T**</td>
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<tr>
<td><strong>EGFR &amp; IL-13Rα2</strong> (Epidermal growth factor receptor/ interleukin 13 Receptor subunit alpha 2), Glioblastoma</td>
<td>TmEGFR/IL13Ra2 01 CAR-T</td>
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</tr>
<tr>
<td><strong>FAP</strong> (Fibroblast Activation Protein); Pancreatic, Ovarian, Lung Cancer, Breast Cancer, Head &amp; Neck Cancer</td>
<td>TmFAP 01 CAR-T</td>
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</tbody>
</table>

The table illustrates our research and development programs and opportunities as of September 2020 * Full pipeline not shown ** In collaboration with CHOP & UPenn

Nov 2020
Potential for multiple solid tumor therapeutic franchises

- **CNS Franchise**
  - GPC2
  - H3.3K27M TCR
  - EGFR/IL13 Ra2

- **Lung Franchise**
  - TnMUC1
  - Undisclosed

- **Pancreatic Franchise**
  - TnMUC1
  - Undisclosed

- **Prostate Franchise**
  - PSMA
  - PSCA

- **Ovarian Franchise**
  - TnMUC1
  - Undisclosed
  - Folate receptor α
PSMA*: Opportunity in metastatic castrate-resistant prostate cancer

175K
New cases in U.S. per year

30%
5 year overall survival in metastatic patients

Challenge:
• ~20% of prostate cancer patients develop mCRPC within 5 years of diagnosis

Program status:
• 12 patients dosed across 5 cohorts (enrollment in cohort 4 and cohort 5 ongoing)
• Opened Tmunity-sponsored trial with additional dosing options and sites

Future milestones
• Identify phase 2 dose (4Q20) and commence phase 2 trial (2021)
• Explore path to progress PSMA CAR-T therapy rapidly in the earlier treatment paradigm
• Life-cycle: humanized CAR-T, multivalency

* Prostate Specific Membrane Antigen
https://cancerstatisticscenter.cancer.org
PSMA-TGFβDN* CAR-T: Structure of the clinical CAR

- **antigen recognition**
  - Single chain variable fragment (scFv) from murine scFv domain J591 recognizing the PSMA antigen
  - Extracellular targeting domain

- **subcellular localization**
  - CD8 Transmembrane linker

- **signaling**
  - 4-1BBζ T cell signaling and amplification domain delivers signal 2 in the CAR-T
  - Intracellular signaling 2
  - CD3ζ costimulatory domain delivers initial activation signal in the CAR-T
  - Intracellular signaling 1

- **TGFβDN receptor** Renders the T cell “uninhabitable” by a key immunosuppressive pathway linked to the myeloid compartment “The Armor”

*PSMA-TGFβDN: Prostate Specific Membrane Antigen-Transforming Growth Factor beta Dominant Negative*
Key differentiator: TGFβ (Transforming growth factor beta)

A potent immunosuppressor of T-Cells expressed in prostate cancer tumor microenvironment

TGFβ receptor type I and II couple to complete signaling mechanism leading to T-cell immunosuppression and anergy
PSMA CAR-T & TGFβ dominant negative receptor type II

A dual mechanism of action targeting approach in prostate cancer

The lentiviral vector contains coding for both a PSMA CAR-T and a TGFβ DNR-II

The TGFβ DNR-II has a truncated component preventing coupling with TGFβ R-I and blocking signaling within T-cell

Prostate Cancer Tumor Cell

PSMA antigen

Prostate Cancer Tumor Cell

PSMA CAR

T Cell

TGFβ signaling

Blocked

Ectodomain

Spacer

Endodomain

Signal

Linker

scFv

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Expansion kinetics in first three cohorts compared with CD19 based CAR-T expansion

The first patient in cohort 3 (first to receive LD) demonstrated increased expansion kinetics when compared to the expansion of CTL019 (CD19 CAR-T) in acute lymphoblastic leukemia patients with CD19 CAR-T

Source: Unpublished data, University of Pennsylvania
72 year old male originally diagnosed with non-metastatic prostate cancer in 2006 and diagnosed as metastatic in 2014

Treatments included: surgery, radiation and four lines of standard therapy

Patient had a low disease burden with bone-only disease (non-measurable by ^RECIST criteria) at presentation

Although the Grade 4 CRS was resolving, the patient developed enterococcal septicemia

The patient passed away due to sepsis

^ RECIST= response evaluation criteria in solid tumors; CRS= cytokine release syndrome

Source: Unpublished data, University of Pennsylvania
TnMUC1: Potential high-value target
First patient dosed safely

NON-SMALL CELL LUNG CANCER
Incidence (U.S.): 194K
5 yr OS (metastatic): 6%

PANCREATIC CANCER
Incidence (U.S.): 57K
5 yr OS (metastatic): 3%

OVARIAN CANCER
Incidence (U.S.): 22.5K
5 yr OS (metastatic): 29%

TRIPLE NEGATIVE BREAST CANCER
Incidence (U.S.): 41K
5 yr OS (metastatic): 11%

MULTIPLE MYELOMA
Incidence (U.S.): 32K
5 yr OS (R/R*): 22%

Program status:
• Clinical sites initiated in 4Q19
• First patient dosed; Expect to dose 3 cohorts in 2020

* R/R: relapsed / refractory
**TnMUC1 targeting abnormal glycosylation**

**Normal tissue heavily glycosylated mucin1**

**Normal glycosylated mucin1**

**Normal carbohydrate chains**

**Cancer with aberrant “stumpy” TnMUC1**

**Under-glycosylated mucin1**

**Abnormal carbohydrate chains**

Gastric epithelial cell: TnMUC1 only found in the Golgi complex as a precursor to the epithelial lining (mucin1)

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
Building next-generation manufacturing

Reduced costs and improved reliability

2018
- Clinical CAR-T/TCR manufacturing @ UPenn
- CRISPR-edited T-cell manufacturing capability @ UPenn

2019
- T-cell manufacturing platform technology transfer to Tmunity completed

2020
- Tmunity proprietary lentiviral manufacturing platform developed
- Next-gen T-cell manufacturing platform developed

2021
- Tmunity in-house clinical vector manufacturing operational
- Tmunity in-house clinical T-cell manufacturing operational

2022+
- Scale to meet global clinical and commercial development and supply

Capabilities

- Fully integrated product and process development
- Manufacturing expertise: Vector and T-cell
- Technology innovation and integration: cell and vector processing + analytics + automation + digital applications
Oct ‘19 Series B Closed: $75M Untranchsed

$231M raised-to-date

- Penn
- University of Pennsylvania
- Westlake Village Biopartners
- Andreessen Horowitz
- Ping An Ventures
- Lilly Asia Ventures
- Parker Institute for Cancer Immunotherapy
- Gilead
- The Match BioTherapies
- Kleiner Perkins
- American Cancer Society
- BrightEdge
Milestones for 2021

- Clinical Programs
  - PSMA (Prostate Cancer)
    - Identify safe and effective dose and phase 2 readiness (1H 2021)
  - TnMUC-1 (Pancreatic, Ovarian, Non-Small Cell Lung, Triple Negative Breast cancers)
    - Confirm safety of target, signal generation (2H 2021)

- Preclinical New targets & Lifecycle
  - Complete data packages for INDs (Next Gen PSMA, TNMUC-1, GPC2 and EGFR/IL13Ra2) (2H 2021-1H 2022)

- cGMP Manufacturing Readiness
  - Initiate internal cell product manufacturing (Q3 2021)
Our approach: Developing next-generation cancer therapies

- Create the best T cell medicines for solid tumor patients
- Forming vertically integrated company with manufacturing capability and early commercial insights
- Build rich pipeline with broad coverage of tumor type that lends to many franchises
- Established translational engine & best-in-class research and unique model with UPenn
- Assembled winning team with unique experiences: Founders & Management with track record in developing and commercializing CAR-T therapies