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 developing the next generation of cutting-edge cancer therapies

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

Our focus is on developing products to address some of the most challenging solid tumors and underserved hematological cancers.

We are restoring hope for patients.
Built on a world-class foundation

- **Clinical Portfolio**
  - PSMA CAR-T
  - TnMUC1 CAR-T
  - NY-ESO-1 TCR-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**
  - ~60 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’s competencies:
Positioned to overcome the problems with current therapies

Expanding cell therapies to patients earlier in the treatment paradigm of every cancer
Radically reducing costs associated 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

March 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
## Innovative pipeline of potentially transformative therapies*

<table>
<thead>
<tr>
<th>Program</th>
<th>Indication</th>
<th>Preclinical Development</th>
<th>IND-Enabling</th>
<th>Phase 1</th>
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<tbody>
<tr>
<td><strong>Solid Tumors</strong></td>
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<tr>
<td>PSMA CAR-T</td>
<td>Metastatic castrate-resistant prostate cancer</td>
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<tr>
<td>NY-ESO-1 TCR-T Triple Knockout TCR (NYCE**)</td>
<td>Melanoma, synovial sarcoma</td>
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<td>TnMUC1 CAR-T</td>
<td>Advanced TnMUC1 positive solid tumors</td>
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<td>FAP CAR-T</td>
<td>Pancreatic cancer, NSCLC, other solid tumors</td>
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<td>GPC2 CAR-T***</td>
<td>Neuroblastoma, neuroendocrine tumors</td>
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<td>H3.3K27M TCR***</td>
<td>Diffuse intrinsic pontine glioma</td>
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<td>IL13 Rα2 CAR-T</td>
<td>Glioblastoma</td>
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<td>PSCA CAR-T</td>
<td>Prostate cancer</td>
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<td><strong>Liquid Tumors</strong></td>
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<td>NY-ESO-1 TCR-T Triple Knockout TCR (NYCE**)</td>
<td>Multiple myeloma</td>
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<tr>
<td>CD33HSC/CD33 CAR-T</td>
<td>Acute myeloid leukemia</td>
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The table illustrates our discovery programs and opportunities as of March 2020 * Full pipeline not shown ** NYCE- New York CRISPR-edited ***In collaboration with UCSF **** In collaboration with CHOP
PSMA*: Opportunity in metastatic castrate-resistant prostate cancer

**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

**Metastatic Castrate-Resistant Prostate Cancer (mCRPC)**

- #1 cause of cancer in men
- This cancer forms in tissues of the prostate gland and can progress to other organs despite androgen depletion therapy (ADT)

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

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

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

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

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

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

TnMUC1: Potential high-value target
First patient dosed safely

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

All statistics for U.S.: https://seer.cancer.gov/statfacts, Overall Survival (OS) in the metastatic (distant) stage of cancer
* R/R: relapsed / refractory
TnMUC1 targeting abnormal glycosylation

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

Cancer with aberrant “stumpy” TnMUC1

Under-glycosylated mucin1

Abnormal carbohydrate chains

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
NY-ESO-1-TCR: 1st CRISPR-based product tested in humans
One of the top 10 Science News stories of 2019*

- First clinical of evidence of CRISPR edited T cells persisting in circulation in 3 patients with myeloma and sarcoma
- Data presented at American Society of Hematology in Dec 2019
- Published in Science (Feb 6, 2020)

*Science News Dec 16th 2019

- Tmunity has developed *in-house* gene-editing capabilities, including multiplexing via CRISPR
- Tmunity has proven ability to manufacture a CRISPR-based product
- Tmunity building upon current *in-house* gene-editing platform for translation to manufacture of future *allogeneic* therapies
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
- CRISPR-edited T-cell manufacturing capability @ UPenn

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 Untranched
$231M raised-to-date
2019 Accomplishments and Future Milestones

**COMPLETED MILESTONES**

- First-in-human data from PSMA-01 CAR-T in mCRPC
- First patient dosed with TnMUC1 CAR-T
- Data on initial cohort of first-in-human CRISPR-engineered TCR product
- Delivered viral vector research-grade production, process dev, analytical dev and full tech-transfer of CAR-T platform
- Series B financing: $75 million

**FUTURE MILESTONES**

- Dose first 3 cohorts PSMA-02 trial, expand clinical site footprint (2020) and select phase 2 dose
- Commence phase 2 trial PSMA U.S. and ROW (2021)
- Establish safety TnMUC1-01 and develop signal in different tumor types, expand clinical site footprint
- Advance and file new INDs
- cGMP manufacturing readiness — vector (2020) + internal cell product manufacturing (2021)
Our approach: Developing next-generation cancer therapies

Become the recognized world leader in T cell therapies with focus in solid tumors

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