Forward Looking Statements

This presentation contains forward-looking statements as that term is defined in Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. Statements in this press release that are not purely historical are forward-looking statements. Such forward-looking statements include, among other things, references to novel technologies and methods and our business and product development plans, including the advancement of our proprietary and co-development programs into and through the clinic. Actual results could differ from those projected in any forward-looking statements due to numerous factors. Such factors include, among others, our ability to raise the additional funding we will need to continue to pursue our business and product development plans; the inherent uncertainties associated with developing new products or technologies and operating as a development stage company; our ability to develop, complete clinical trials for, obtain approvals for and commercialize any of our product candidates, including our ability to recruit and enroll patients in our studies; our ability to address the requests of the FDA; competition in the industry in which we operate and market conditions. These forward-looking statements are made as of the date of this press release, and we assume no obligation to update the forward-looking statements, or to update the reasons why actual results could differ from those projected in the forward-looking statements, except as required by law. Investors should consult all of the information set forth herein and should also refer to the risk factor disclosure set forth in the reports and other documents we file with the SEC available at www.sec.gov, including without limitation the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2018 and the Company's Quarterly Reports on Form 10-Q.
What are Anticalin® proteins?

A Novel Therapeutic Class with Favorable Drug-Like Properties

- Derived from lipocalins (human extracellular binding proteins)
  - TLC and NGAL lipocalins used as “templates” for drug development
- Engineerable binding pocket for robust target engagement
- Monomeric, monovalent, small size (~18 kDa vs 150kDa mAbs)
- Can be formulated for inhalable delivery
- Can be formatted into novel bi/multispecific constructs
- Broad IP position

Underpinned by a Powerful Drug Discovery Platform

- Highly diverse libraries (>10^{11}) of potential drug candidates...
- Automated high-throughput drug screening technology (phage display)...
- Extensive protein engineering know-how...
- ...resulting in high hit rates, quick-to-development candidates
Company Snapshot

Pipeline Highlights

- **PRS-060**: Inhaled IL4-Rα antagonist for moderate-to-severe asthma (partnered with AstraZeneca)
- **Next-generation respiratory**: Includes 4 discovery-stage inhaled therapeutics programs (2 proprietary, 2 partnered with AstraZeneca)
- **PRS-343**: 4-1BB/HER2 bispecific for solid tumors
- **PRS-344**: 4-1BB/PD-L1 bispecific (partnered with Servier)

Anchor Partnerships

- Validation through three anchor partnerships
- $120+M in upfront payments and milestones since January 2017
- Each partnership includes options for co-development & US-focused commercialization rights
- Value-driving opt-in for PRS-060 after phase 2a completion

Projected Inflection Points

- **Respiratory**: Co-developed (AstraZeneca) inhaled IL4-Rα antagonist (PRS-060) MAD phase 1 data, including FeNO reduction vs. placebo
- **IO**: Wholly-owned bispecific 4-1BB agonist (PRS-343) phase 1 data in 2019
- **IO**: 4-1BB/PD-L1 bispecific (PRS-344) IND in 2019
### Pipeline

#### RESPIRATORY

<table>
<thead>
<tr>
<th>CANDIDATE</th>
<th>TARGETS</th>
<th>PARTNER</th>
<th>COMMERCIAL RIGHTS</th>
<th>DISCOVERY</th>
<th>PRECLINICAL</th>
<th>PHASE I</th>
<th>PHASE II</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRS-060</td>
<td>IL4-Rα</td>
<td>AstraZeneca</td>
<td>Pieris Worldwide Profit-Share Option</td>
<td></td>
<td></td>
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<tr>
<td>Proprietary Programs</td>
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<td>n/a</td>
<td>Pieris Worldwide</td>
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</tr>
<tr>
<td>AstraZeneca Programs*</td>
<td>n.d.</td>
<td>AstraZeneca</td>
<td>Pieris Worldwide Profit-Share Option*</td>
<td></td>
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</tbody>
</table>

*4 additional respiratory programs (2 active, 2 forthcoming) in collaboration with AstraZeneca, 2 of which carry co-development and co-commercialization options for Pieris

#### IMMUNO-ONCOLOGY

<table>
<thead>
<tr>
<th>CANDIDATE</th>
<th>TARGETS</th>
<th>PARTNER</th>
<th>COMMERCIAL RIGHTS</th>
<th>DISCOVERY</th>
<th>PRECLINICAL</th>
<th>PHASE I</th>
<th>PHASE II</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRS-343</td>
<td>HER2/4-1BB</td>
<td>n/a</td>
<td>Pieris Worldwide</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ Anti-PD-L1</td>
<td>n/a</td>
<td>Pieris Worldwide</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>PRS-344</td>
<td>PD-L1/4-1BB</td>
<td>Servier</td>
<td>Pieris U.S. Rights</td>
<td></td>
<td></td>
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<tr>
<td>Servier Programs†</td>
<td>n.d.</td>
<td>Servier</td>
<td>Pieris U.S. Option†</td>
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<tr>
<td>Proprietary IO Programs</td>
<td>n.d.</td>
<td>n/a</td>
<td>Pieris Worldwide</td>
<td></td>
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</tr>
<tr>
<td>Seattle Genetics Programs‡</td>
<td>n.d.</td>
<td>Seattle Genetics</td>
<td>Pieris U.S. Option‡</td>
<td></td>
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</tbody>
</table>

†4 additional IO bispecific programs in collaboration with Servier, with Pieris retaining US rights for 2 of 5 programs
‡3 bispecific programs (1 active, 2 forthcoming) in collaboration with Seattle Genetics, with Pieris retaining US rights for 1 program

#### OTHER DISEASE AREAS

<table>
<thead>
<tr>
<th>CANDIDATE</th>
<th>TARGETS</th>
<th>PARTNER</th>
<th>COMMERCIAL RIGHTS</th>
<th>DISCOVERY</th>
<th>PRECLINICAL</th>
<th>PHASE I</th>
<th>PHASE II</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRS-080</td>
<td>Hepcidin</td>
<td>ASKA</td>
<td>Major Markets Ex-ASKA Territories</td>
<td></td>
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</tbody>
</table>
Key Value Driver:
Unique Formatting of Anticalin Protein-Based Drugs

Building Blocks
- Anticalin Protein
- Antibody
- Fc

Multispecific Fc-Anticalin Proteins
- Tetra'
- Tri'
- Bi'
- Mono

Pure Anticalin Proteins

Multispecific Antibody-Anticalin Proteins

Potent Multi-Target Engagement • Novel Inhaled and Multispecific MoA • Favorable Drug-like Properties
### Partnerships

<table>
<thead>
<tr>
<th><strong>AstraZeneca</strong></th>
<th><strong>Servier</strong></th>
<th><strong>Seattle Genetics</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• PRS-060 + 4 additional novel inhaled Anticalin protein programs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Retained co-development and co-commercialization (US) options on PRS-060 and up to 2 additional programs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• $57.5M upfront &amp; 2017 milestone</td>
<td></td>
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</tr>
<tr>
<td>• ~$2.1B in milestone potential, plus double-digit royalties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• AZ funds all PRS-060 development costs through post-phase 2a co-development opt-in decision</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Access to complementary formulation and device know-how for inhaled delivery</td>
<td></td>
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</tr>
<tr>
<td>• PRS-344: PD-L1/4-1BB antibody-Anticalin bispecific</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 5-program deal (all bispecific fusion proteins)</td>
<td></td>
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</tr>
<tr>
<td>• Pieris retains option for full U.S. rights for 3 out of 5 programs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• ~$31M upfront payment, ~$1.8B milestone potential</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Two preclinical milestones achieved for PRS-344</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Up to low double-digit royalties on non-co-developed products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 3-program partnership based on tumor-localized costimulatory bispecific fusion proteins</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Pieris retains opt-in rights for 50/50 global profit split and U.S. commercialization rights on one of the programs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• $30M upfront payment, ~$1.2B milestone potential</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Up to double-digit royalties on non-co-developed products</td>
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</tr>
</tbody>
</table>

**Strong Partners • Significant Cash Flow • Retained Commercial Rights**
Anticalin Technology Advantages: Differentiated Respiratory Platform

- Tear lipocalin (TLC) is abundant in human lung and permeates lung epithelium
- Very low predicted immunogenicity
- Stable, monovalent molecules with high melting temperatures and insensitivity to mechanical stress
- Inhalation pharmacokinetics suitable for once or twice daily administration and compatible with flexible treatment regimes
**PRS-060: IL-4Rα Antagonist**

<table>
<thead>
<tr>
<th><strong>Candidate</strong></th>
<th>PRS-060</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Function/MoA</strong></td>
<td>Inhibiting IL4-Rα (disrupts IL-4 &amp; IL-13 signaling)</td>
</tr>
<tr>
<td><strong>Indications</strong></td>
<td>Moderate-to-severe asthma</td>
</tr>
<tr>
<td><strong>Development</strong></td>
<td>Phase 1 multiple-ascending dose trial ongoing</td>
</tr>
<tr>
<td><strong>Commercial Rights</strong></td>
<td>Co-development and U.S. co-commercialization rights, including gross margin share</td>
</tr>
</tbody>
</table>
Moderate-to-Severe Asthma Market Opportunity

U.S.

- 19.0M asthma patients over 12 years of age in the U.S.
- 7.8M with moderate-to-severe asthma (41%)
- 3.1M uncontrolled (40%)
- 1.9M high EOs (60%)
- 1.2M low EOs (40%)

EU

- 47.8M asthma patients over 12 years of age in the EU
- 21.5M with moderate-to-severe asthma (45%)
- 8.6M uncontrolled (40%)
- 5.2M high EOs (60%)
- 3.4M low EOs (40%)

All numbers reflect 2016 estimates.
### IL-4Rα: Best-in-Class Efficacy for Uncontrolled Asthma

*Superior data on lung function improvement, exacerbation reduction and steroid-sparing effects across all indicated biologics therapies*

<table>
<thead>
<tr>
<th>Approved Intervention</th>
<th>FeNO</th>
<th>Exacerbation Rate</th>
<th>FEV₁</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anti-IL-4Rα (dupilumab)</td>
<td>Stat. sig. reduction in all comers, normalizes in ~70% of FeNO high patients, no increase following ICS/LABA withdrawal</td>
<td>High EO: 67% reduction on label (87% in Phase II)</td>
<td>Significant Change: 0.25L-0.32L in high EO population</td>
</tr>
<tr>
<td>Anti-IL-5 (benralizumab, mepolizumab, rezlizumab)</td>
<td>No change</td>
<td>51-53% on label for benralizumab and mepolizumab</td>
<td>Minimal change: 0.08L-0.16L</td>
</tr>
<tr>
<td>Anti-IgE (omalizumab)</td>
<td>No change</td>
<td>43% in post-approval pediatric study (not analyzed in registrational studies)</td>
<td>No change</td>
</tr>
</tbody>
</table>
PRS-060 Potency Similar to that of Dupilumab

Table: IC₅₀ [nM] for various parameters

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PRS-060</td>
<td>1.3</td>
<td>2.1</td>
<td>1.3</td>
<td>2.0</td>
</tr>
<tr>
<td>Dupilumab</td>
<td>0.8</td>
<td>1.5</td>
<td>0.8</td>
<td>1.1</td>
</tr>
</tbody>
</table>

PRS-060 reduces levels of pSTAT6, Eotaxin-3, TARC and MDC comparably to dupilumab.

Katerina Pardali et al. AZD1402/PRS-060, an inhaled Anticalin® IL4-Rα antagonist, potently inhibits IL-4 induced functional effects in human whole blood, which can be employed translationally in clinical studies. Poster presented at: European Respiratory Society International Congress 2018; 2018 Sep 19; Munich, Germany.
Elevated fractional exhaled nitric oxide (FeNO) is a marker of allergic asthma

Normal epithelial cells release minimal NO

During airway inflammation, activated epithelial cells increase production of NO

FeNO is a Validated Biomarker in Allergic Asthma Interventions

Biologics that have demonstrated a meaningful reduction in FeNO (dupilumab, tezepelumab) have subsequently produced clinically-significant improvements in lung function and superior exacerbation improvements versus drugs that had no on effect FeNO

Dupilumab was recently approved by the EMA for severe asthma in patients with either high EOs OR high FeNO

We are exploring FeNO reduction versus placebo in a multi-dose ascending phase 1 study of PRS-060

Positive FeNO data from this study would support continued development to assess the potential to improve lung function (FEV1) in uncontrolled asthmatics
Dose-dependent inhibition of pSTAT6 confirms robust target engagement

PK profile of PRS-060 after inhalation confirms desired rapid serum clearance observed in preclinical studies

Safe and well-tolerated in healthy volunteers at nominal dose levels (0.25mg to 400mg) with no SAEs reported or ADAs detected

PK profile showed slow & prolonged absorption into systemic circulation after inhalation, with mean t½ ranging from 4.1 hours to 6.2 hours across all cohorts

STRATEGIC OBJECTIVES

Ascertain PK/PD with a reliable biomarker to confirm local target engagement and inform Phase II dosage regimen

TRIAL DESIGN HIGHLIGHTS

Dosing patients with mild asthma with elevated FeNO levels (>35 ppb), to receive inhaled PRS-060 or pbo b.i.d.* over a 10-day period

Initiated in July 2018

Evaluating safety, tolerability, PK, PD and will also evaluate FeNO reduction vs. placebo

Measuring safety, tolerability and FeNO changes days 1-10, 17 and 40

Pieris is sponsoring the trial, AstraZeneca is reimbursing Pieris for all associated costs

Data will be presented at an upcoming medical conference
### PRS-343: 4-1BB/HER2 Bispecific

<table>
<thead>
<tr>
<th><strong>Candidate</strong></th>
<th>PRS-343</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Function/MoA</strong></td>
<td>Tumor-targeted 4-1BB agonism, HER2 antagonism</td>
</tr>
<tr>
<td><strong>Indications</strong></td>
<td>HER2+ solid tumors</td>
</tr>
<tr>
<td><strong>Development</strong></td>
<td>Phase 1 ongoing</td>
</tr>
<tr>
<td><strong>Commercial Rights</strong></td>
<td>Fully proprietary</td>
</tr>
</tbody>
</table>

**HER2-Targeting Antibody**

**4-1BB-Targeting Anticalin Proteins**
4-1BB (CD137): Validated Target in Need of Appropriate Drug

- Marker for tumor-specific T cells in TME
- Ameliorates T-cell exhaustion & critical for T-cell expansion
- Drives anti-tumor cytolytic activity
- Drives central memory T-cell phenotype

Systemically agonizing 4-1BB mAb (urelumab) has shown clinical activity yet caused significant toxicity

PRS-343 was designed for TME-specific 4-1BB activation*

*4-1BB trimerization required for activation
**PRS-343 Shows Localized Activity and Differentiation in Humanized Mouse Model**

<table>
<thead>
<tr>
<th></th>
<th>CD8⁺ Proliferation in TME</th>
<th>Peripheral CD8⁺ Proliferation</th>
<th>Systemic Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRS-343</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>4-1BB mAb</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Isotype Control</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

**Experimental Design:**
- SKOV-3 tumor cells grafted onto immune-deficient mice and grown to predetermined volume
- Human PBLs + control or PBLs + PRS-343 administered
Anticalin Technology Advantages: Well-Equipped for Targeted IO Agonism

A Varied Immune Synapse... ...Does Not Materially Impact Target Engagement... ...But Impacts Efficacy

The Natural Immune Synapse

TNFRSL (e.g. 4-1BB Ligand)

TNFRS (e.g. 4-1BB)

Efficacy Experimental Design

Culture Dish

4-1BB/HER-2 bispecific

HER-2+ Tumor Cell

T Cell

IL-2

IFN-γ

4-1BB

Signal 1

Signal 2

Activation

4-1BB

HER-2

Her-2 binding

CD137 binding

~15nm

C-terminal Heavy chain fusion

~8nm

C-terminal Light chain fusion

~5nm

N-terminal Heavy chain fusion

~5nm

N-terminal Light chain fusion

Stand-alone building block affinity

Bispecific-based building block affinity
**PRS-343 Phase 1 Escalation and Expansion Trials**

- **First patient dosed September 2017**
- Enrolling patients with HER2+ solid tumors
- Dose-escalation trial ongoing; expansion initiation pending positive escalation data
- Comprehensive PK, safety, tolerability and biomarker data in 2019
- First patient dosed in combination with atezolizumab (Tecentriq®) in August 2018 (drug supply agreement with Roche)
## PRS-344: 4-1BB/PD-L1 Bispecific

<table>
<thead>
<tr>
<th>Candidate</th>
<th>PRS-344</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function/MoA</td>
<td>Localized 4-1BB agonism with PD-L1 antagonism</td>
</tr>
<tr>
<td>Indications</td>
<td>N.D.</td>
</tr>
<tr>
<td>Development</td>
<td>2019 IND expected (in co-dev with Servier)</td>
</tr>
<tr>
<td>Commercial Rights</td>
<td>Opt-in for co-development with full U.S. commercial rights; royalty on ex-U.S. sales</td>
</tr>
</tbody>
</table>
PRS-344 Drives Synergistic IO Biology

- Combines the benefits of tumor-localized 4-1BB agonism with PD-L1 blockade
- Pan-tumor opportunity
- Publications support preclinical rationale of the combination, as evidenced below:

**Synergistic Response of PD-1+4-1BB Combination Demonstrated In Preclinical Models**

*PD-L1 Targeting Antibody*  
*4-1BB-Targeting Anticalin Proteins*

---

**PD-1+4-1BB combo demonstrates robust preclinical anti-tumor activity**

**4-1BB agonism enhances mitochondrial function in T cells**

Adapted Menk et al. JEM (2018)
$110.8 M
Cash & Cash Equivalents

$0.0
Debt

50.9 M
CSO

$120+ M non-dilutive capital since January 2017
Scientific and Clinical Advisory Boards

**SCIENTIFIC ADVISORY BOARD: ONCOLOGY**
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  *Harvard Medical School*
- Michael Curran, PhD
  *MD Anderson Cancer Center*
- Dario Vignali, PhD
  *University of Pittsburgh*
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