



Pipeline Research
Council International

LEADING PIPELINE RESEARCH

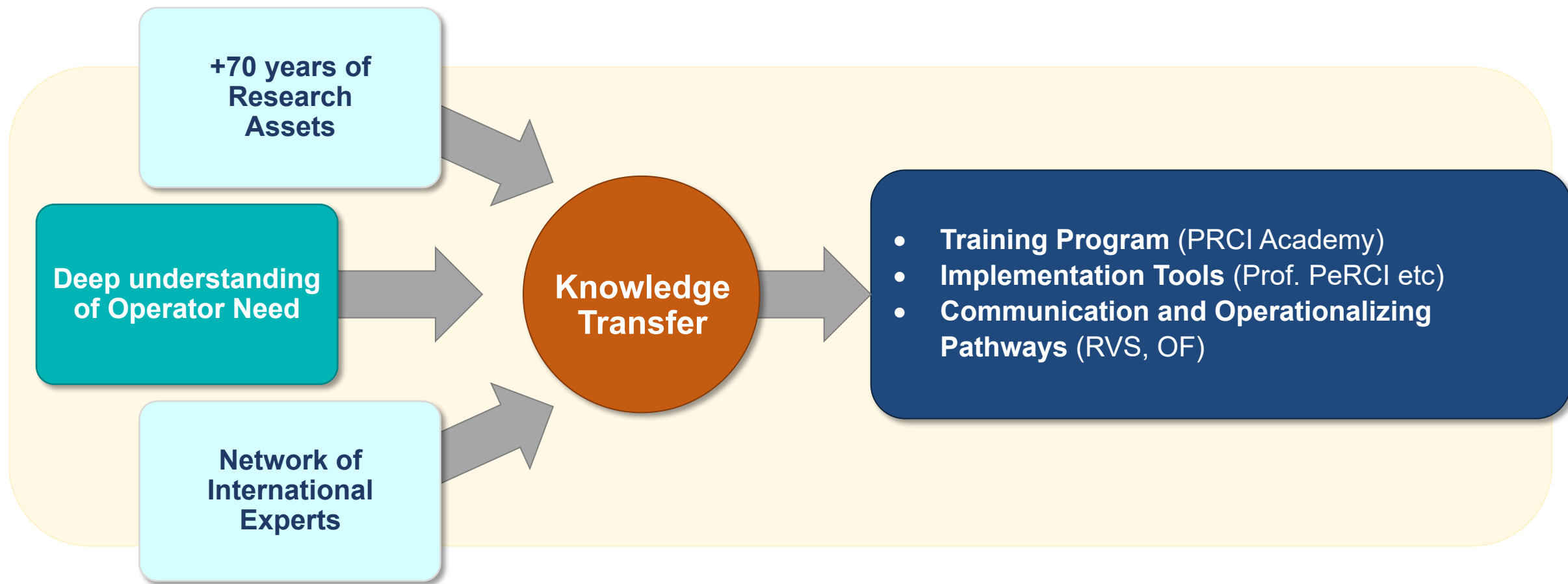
Knowledge Transfer (KT)

Knowledge Transfer Advisory Committee

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1. **Avi Razavi, SoCal (TC)**
 2. **Brent Byrd, Shell (EA)**
 3. **Bryce Brown, ROSEN (EA)**
 4. **Byron Ables, Enterprise (TC)**
 5. **Chris Nowak, Kinder M. (TC&RSC)**
 6. **Eric Taylor, BHEG T&S (EA)**
 7. **Jason Smith, ONEOK (EA)**
 8. **Pierre Blouet, GRTGaz (EA)**
 9. **Satish Kulkarni, Chevron (TC&RSC)**

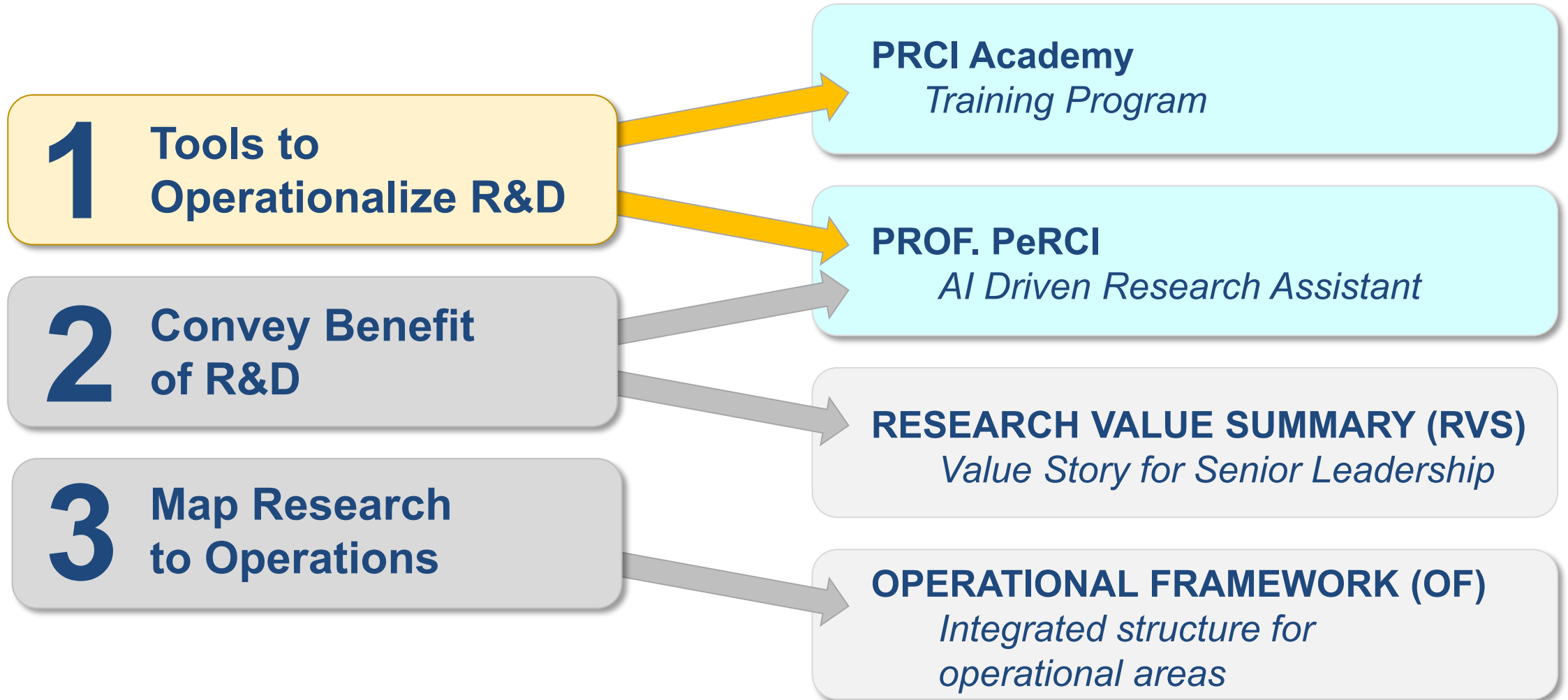
Knowledge Transfer

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* Research Assets (e.g., reports, webinars, data bases, training courses)

Objectives of Knowledge Transfer



PRCI Academy - Vision

- **Moving expertise and R&D into a comprehensive learning program with focus on application**
- **Systematic efficient training with collective expertise**
- **Continuous updating – efficiently centralized**
- **Attract, retain and develop technical expertise**



2024 & 2025 PRCI Courses

PIPELINE REPAIR

- **Fundamentals of Pipeline Repair** *On-line, On-Demand*
- **Practical Pipeline Repair** *In-Person at TDC or In-house at your facility*

GEOHAZARD COURSES

- **Fundamentals of Engineering, Design and Construction** *On-line, On-Demand*
- **Fundamentals of Maintenance of Geotechnical Threats** *On-line, On-Demand*
- **Fundamentals of Maintenance of Hydrotechnical Threats** *On-line, On-Demand*
- **Practical Geohazard Course** *In-Person at TDC/In-house*

NDE TRAINING

- **NDE Training for Long Seam** *In-Person at TDC*



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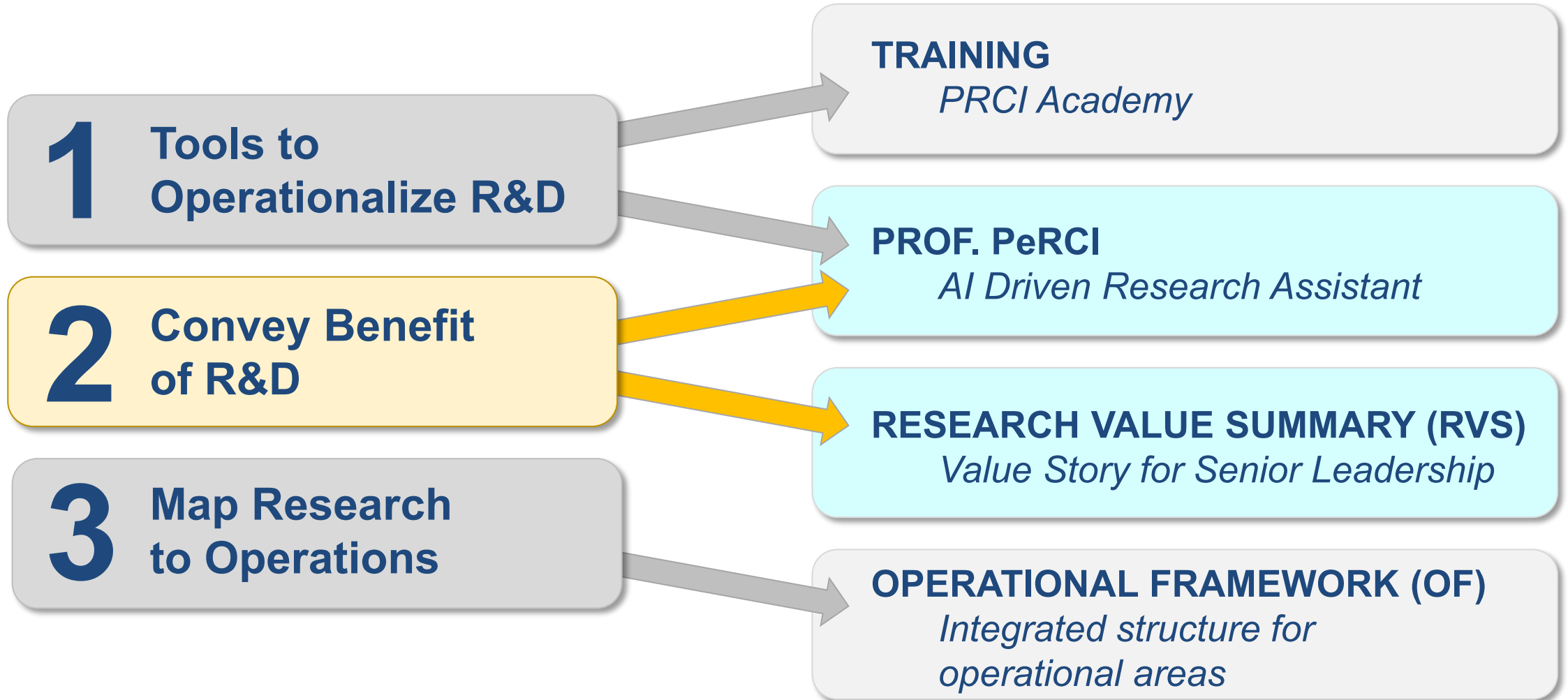
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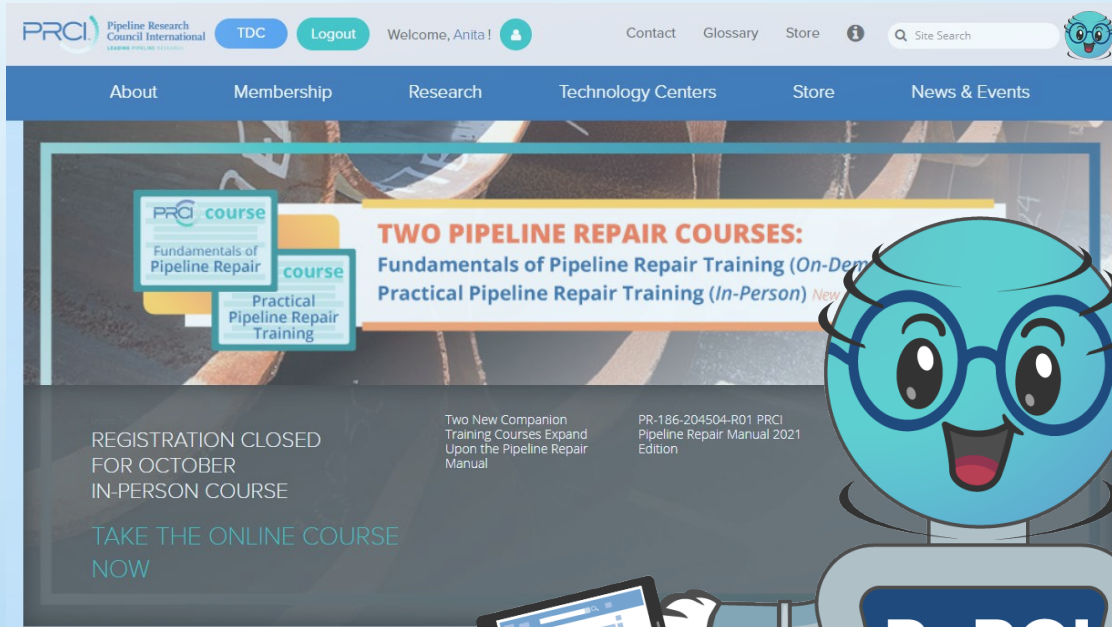
- **NDE Training for Long Seam** *In-Person at TDC*



Objectives of Knowledge Transfer



Professor PeRCI



**Positioning PRCI
to thrive in
an AI enabled future...**





Try asking me questions like:

Hey PeRCI, please introduce yourself

What kinds of things can you help me with?



Chat powered by [bettybot.ai](#) | [Terms of Use](#)

PeRCI TIPS

Like you, PeRCI is a life-long learner. Here are things they would like you to know as you start chatting.

1. Unlike a traditional search engine that uses keywords, I use context to try and understand your question, find relevant information, and use natural language to craft a relevant response. I am still learning how to return results based on categories and key fields, such as title or date, so focus your questions on the topics you are interested in learning about.
2. I am a great librarian, but not a great mathematician. I can sometimes make mistakes when dealing with number-based questions such as comparing dates or counting.
3. I am always learning, if you do not get the results you are looking for, please leave feedback using the thumbs up/down buttons as it helps me improve.

Below are some **GENERAL TIPS AND EXAMPLES** on the best ways to ask me questions.

Research Value Summaries (RVS)

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RVS - Summary of Problem, Solution, Value & applicability for each R&D Project
Why? Convey Business Relevance & Value

- 5 detailed RVS's completed
- Trained Prof.PeRCI on above, Final Reports, and Idea Forms
- Moving forward:
 - Prof. PeRCI generates draft RVS
 - Staff work with TC Leaders to review and improve
 - Collate in Annual Report



PIPE BURST TESTING DATABASE Research Value Summary

Quick Facts

Resources:

- ☒ Report
- ☐ Webinar
- ☐ Compendium
- ☐ Software
- ☒ Database
- ☐ Training course(s)

Strategic Priority Area:
Crack Management, Dent Management

Edition / Version: N/A

Potential Industry Impact:

- ☒ Safety
- ☒ Regulatory
- ☒ Environment
- ☒ Industry Standards
- ☐ Emerging
- ☐ Fuels/Sustainability
- ☒ Budget
- ☐ Other

Technical Committee:
Corrosion Technical Committee

Date of Publication:
N/A

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Value Statement

Problem:
To provide safety, models are used together with inputs (such as material properties) to estimate the failure stress (or burst pressure) of defects. As both the inputs and models have uncertainties as well as bias, the calculated burst pressure will also have resulting uncertainty and bias. Models and inputs are purposely biased such that the calculated failure stress is safe. New and existing models need to be verified against actual burst test data to ensure safety. This requires a large set burst tests and related measurements.

Solution:
A database of actual failure stresses observed from historic, controlled pipeline burst tests has been captured. Operators can use this data, combined with statistical methods, to improve models for engineering assessments - avoiding the use of overly conservative inputs and models - optimizing decision-making by having access to more precise calculations of defect failure stress.

Value:
By establishing, collating and compiling defect sizing data with predicted failure stress, as well as actual failure stress, PRCI research has led to the development of equations to calculate defect failure stress with greater precision. This has resulted in more cost effective, regulatorily compliant, engineering analyses and defect assessment processes for operating companies to more accurately identify necessary excavations while maintaining safety levels. As an illustrative sample, it is conservatively estimated that \$9MM of corrosion excavation costs could be deferred for a 100 mile, NPS 24 (X52, 0.25 inch wt) gas transmission pipeline operating in federal US jurisdictions when using a more precise calculation methodology. Calculation details available upon request.

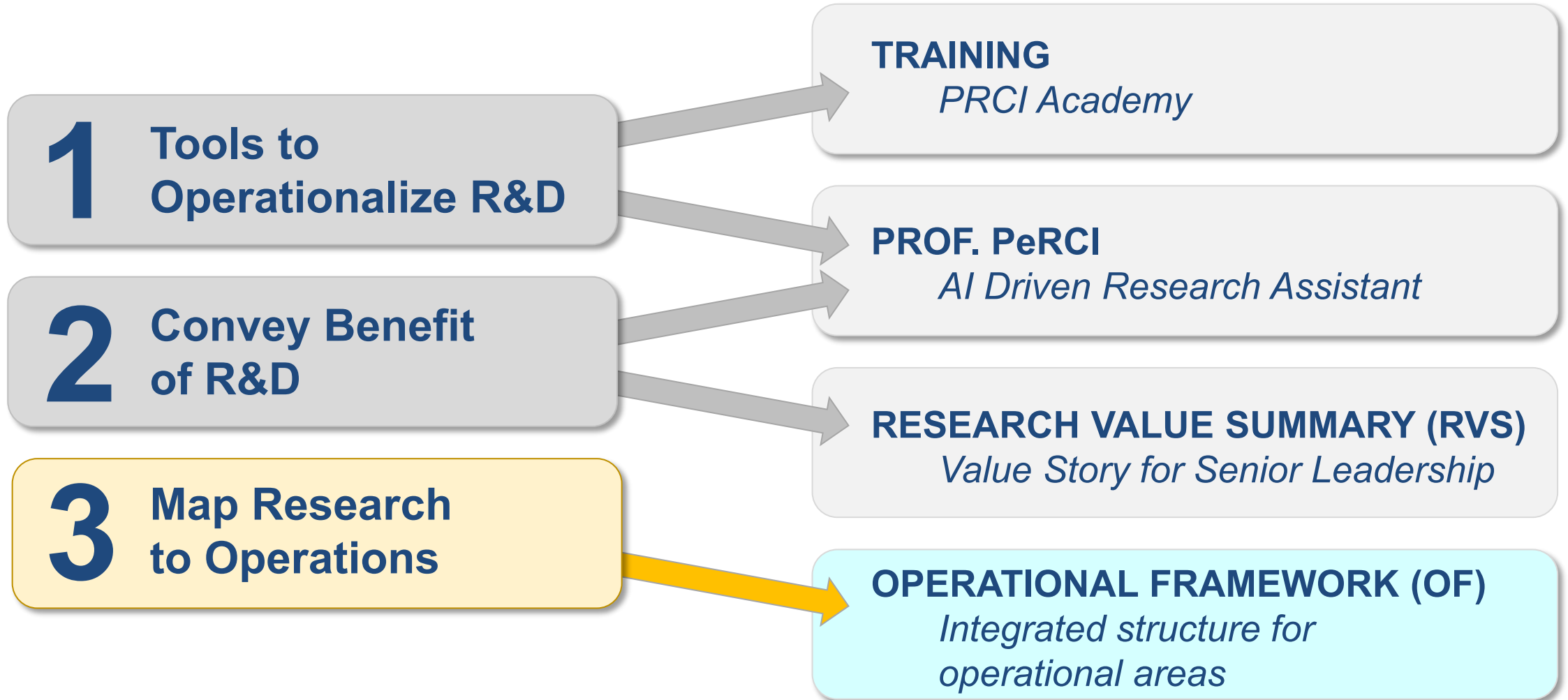
Applicable Jurisdictions:
This research has applicability across all jurisdictions; however, where relevant, technical criteria based on US federal jurisdictions have been used.

Research Objective Alignment:
Confirm the fundamental integrity and safe operation of vintage pipelines by expanding the applicability and reducing the uncertainty of Fitness for Service methodologies, including defining critical feature dimensions, associated models & response criteria.

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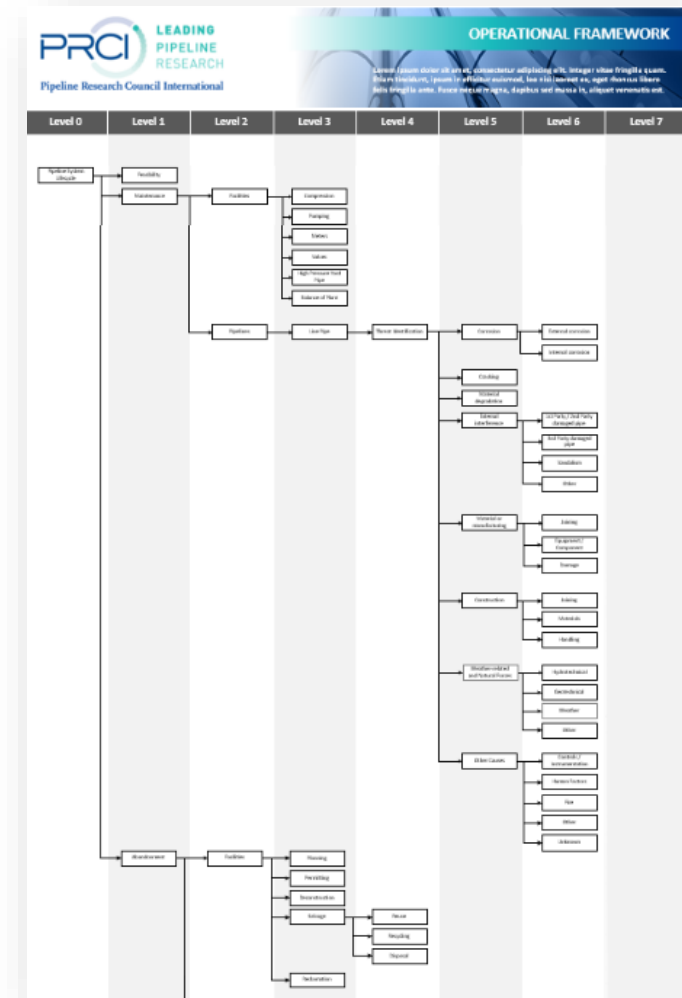
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Why?

- Visual framework to collate **research assets*** & serve **operations**
- Clarity in how **they** interrelate
- Help identify future opportunities

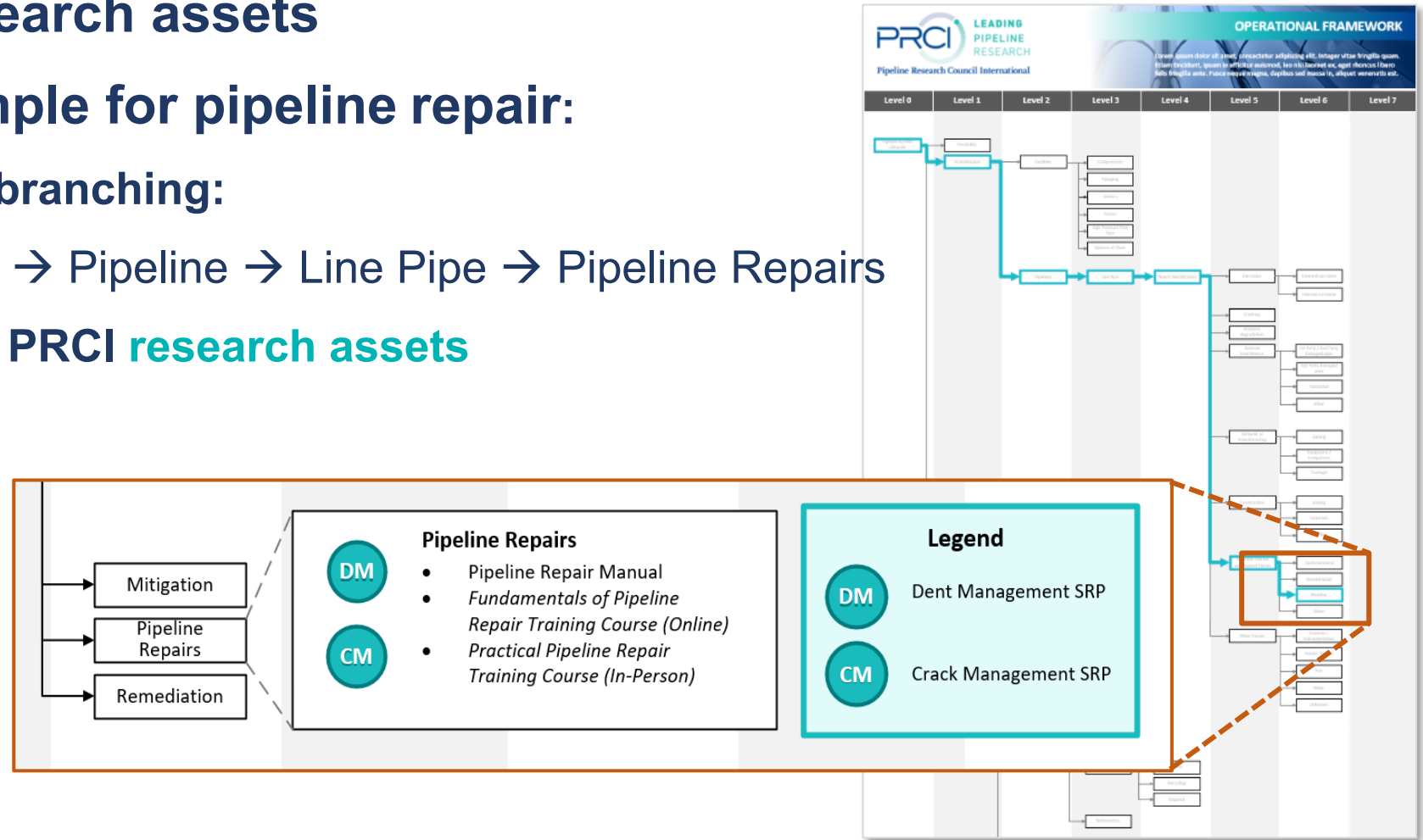
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Use of the OF: On-the-Job Problem-Solving Pathways

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- Navigating research assets
- Illustrative sample for pipeline repair:
 - Following the branching:
 - Maintenance → Pipeline → Line Pipe → Pipeline Repairs
 - Identify useful PRCI research assets



Thank you



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