SoET Innovation Engine Tech Expo

A project-based model for translation, technical de-risking, and industry engagement

Translation to Practice

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Abstract

The SoET Innovation Engine links Purdue-owned intellectual property, sponsor-defined needs, multidisciplinary student teams, faculty mentorship, and graduate continuation. The model treats capstone not as the finish line, but as a launch point for prototype development, evidence generation, and commercialization-oriented next steps.

Research Questions

1: What mechanisms reliably accelerate TRL movement across diverse early-stage Purdue IP?
2: How does fidelity to evidence standards affect ΔTRL outcomes?
3: How do cross-campus translation systems behave, and what factors lead to variation or drift?.
4: What is the relationship between implementation fidelity → student translation competencies → ΔTRL progression?

Introduction

The SoET Innovation Engine serves as the umbrella framework. Capstone Plus supports student-originated and opportunity-driven innovation. Fusion Point supports partner engagement and technical de-risking. A graduate continuation pathway carries selected projects into deeper validation, systems integration, and productization-oriented work.

Operating Model

Projects move through a staged pathway that supports portfolio management, technical learning, and translation decisions.

1 Identify ⟩ 2 Intake ⟩ 3 Assign ⟩ 4 Develop ⟩ 5 Validate ⟩ 6 Transition

Outcome options: licensing • startup formation • partner adoption • sponsored continuation • graduate maturation • workforce placement

Evidence of Traction

Current evidence suggests that the model is operating at meaningful scale and is producing translationally relevant outcomes.

190 → 258
Student participation
2022 to 2024

45 → 63
Total projects
2022 to 2024

86%
Proof-of-concept prototypes
across 43 completed projects

25
PRF-linked projects
2025 target

Near-term direction: continued portfolio growth, wider validation capacity, and stronger project continuation beyond the undergraduate timeline.

SoET Innovation Engine

Umbrella framework for intake, pathway assignment, partner engagement, stage-based oversight, and outcome tracking.

Capstone Plus

Student-originated and opportunity-driven pathway for early proof-of-concept and entrepreneurial project work.

Fusion Point

Partner-facing pathway for refinement, technical de-risking, and evidence generation before deeper investment.

Graduate Continuation

Advanced validation, systems integration, pilot work, and productization-oriented follow-through for selected projects.

Industry Value and Invitation

- Lower-risk front door to Purdue innovation and applied prototype development.
- Structured access to multidisciplinary student teams and faculty-guided technical work.
- Early evidence to inform licensing, investment, and follow-on project decisions.
- Innovation Hub concept adds a recurring portfolio-level engagement option.

The opportunity is to turn capstone activity into a repeatable pathway for translation, partner value, and graduate-level technical maturation.

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