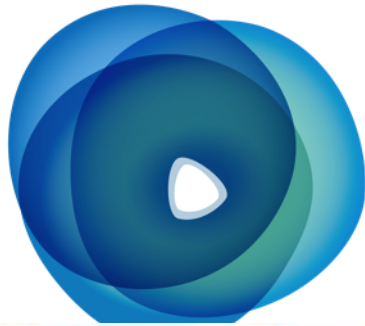# An Innovative University and Industry Collaboration

AMSI**Intern**

Cate Ballard
AMSI Intern National Program Manager

About AMSI

A national collaboration, joint venture made up of 30 leading institutions.
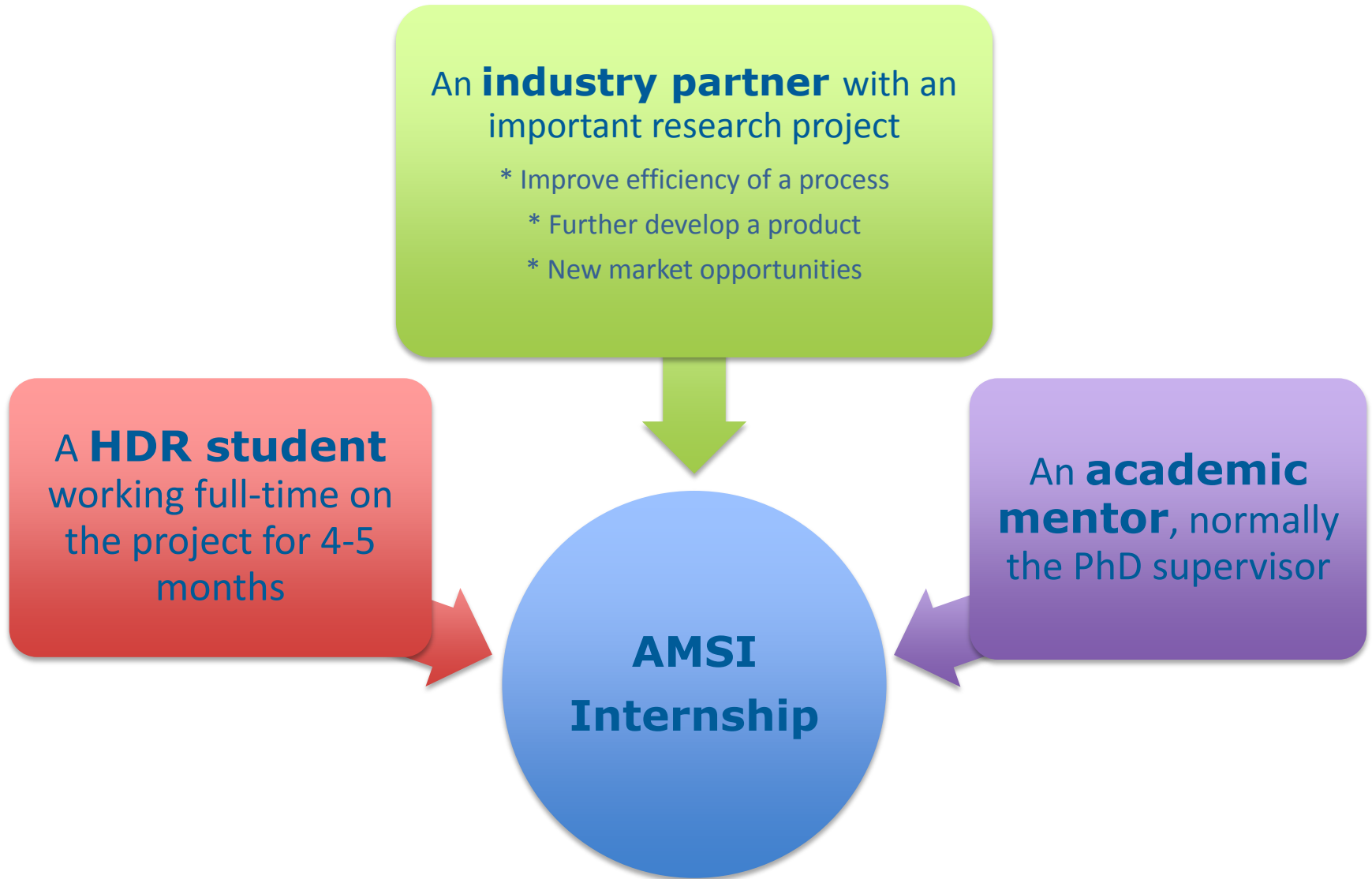
AMSI conducts a wide range of activities in the mathematical sciences.

Manages 3 programs; Research & Higher Education, Schools and Industry (AMSI Intern)

The AMSI Internship Model

An **industry partner** with an important research project

* Improve efficiency of a process

* Further develop a product

* New market opportunities

A **HDR student** working full-time on the project for 4-5 months

AMSI Internship

An **academic mentor**, normally the PhD supervisor

AMSI INTERN

AMSI Intern model

- Based on successful Canadian Model 'Mitacs'

- National program

- Industry Partners: Small to Medium Sized Enterprise,
- Large business & Government

- Placement of Post Graduate students, mainly PhD level

- Drawn from all disciplines

- Payment – Student & Mentor

AMSI INTERN

AMSI Intern simultaneously;

- **Solves** an industrial problem

- Provides PhD students with **effective work-readiness skills** and bridges the transition to employment.

- Increase the **quality and quantity of industry-university collaborations** that will lead to increased research partnerships with mutual benefits

- Improve industry research outcomes to **drive innovation and productivity** nationally and internationally

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AMSI INTERN PROGRAM

Industry Partner: Benefits to the business

- Addresses Industry concerns - time poor, budget constrained and risk adverse
- AMSI Intern is the 'Connector'
- Flexible, short term placements, drive research for high priority projects
- Cost effective model aligns with budgets and research timelines.
- Quick turnaround times facilitated by AMSI
- Further develop and innovate for future growth
- Potential recruitment opportunities
- Student not listed on the books
- Ability to connect with educational institutes
- 'Intellectual Property' remains with the organisation
- Linkages grants
- Access to academic supervisor who specialize in the research challenge or problem
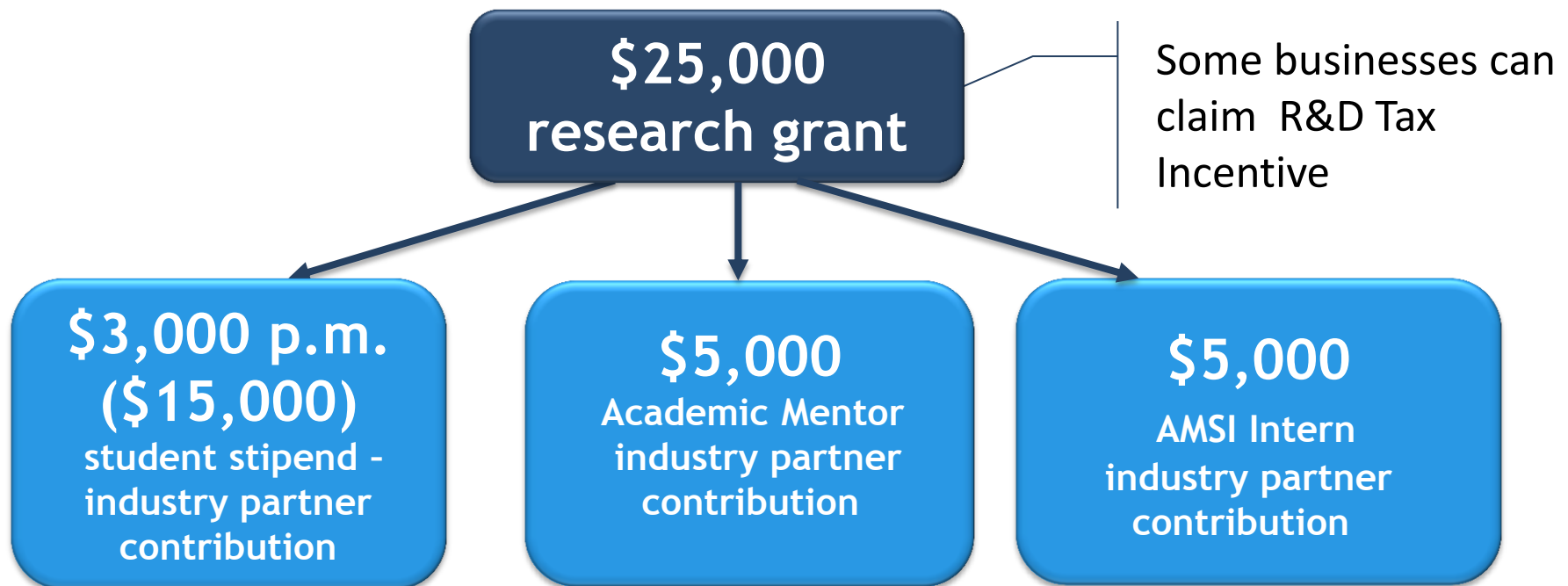
Two Cost models
1 - Large Org & Gov Agencies
2 - SME's

AMSI**Intern**

AMSI INTERN PROGRAM

Model 1
Industry Funded Model – Large Business & Government Agencies

5 month Project

$25,000 research grant

Some businesses can claim R&D Tax Incentive

$3,000 p.m. ($15,000) student stipend - industry partner contribution

$5,000 Academic Mentor industry partner contribution

$5,000 AMSI Intern industry partner contribution

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Model 2
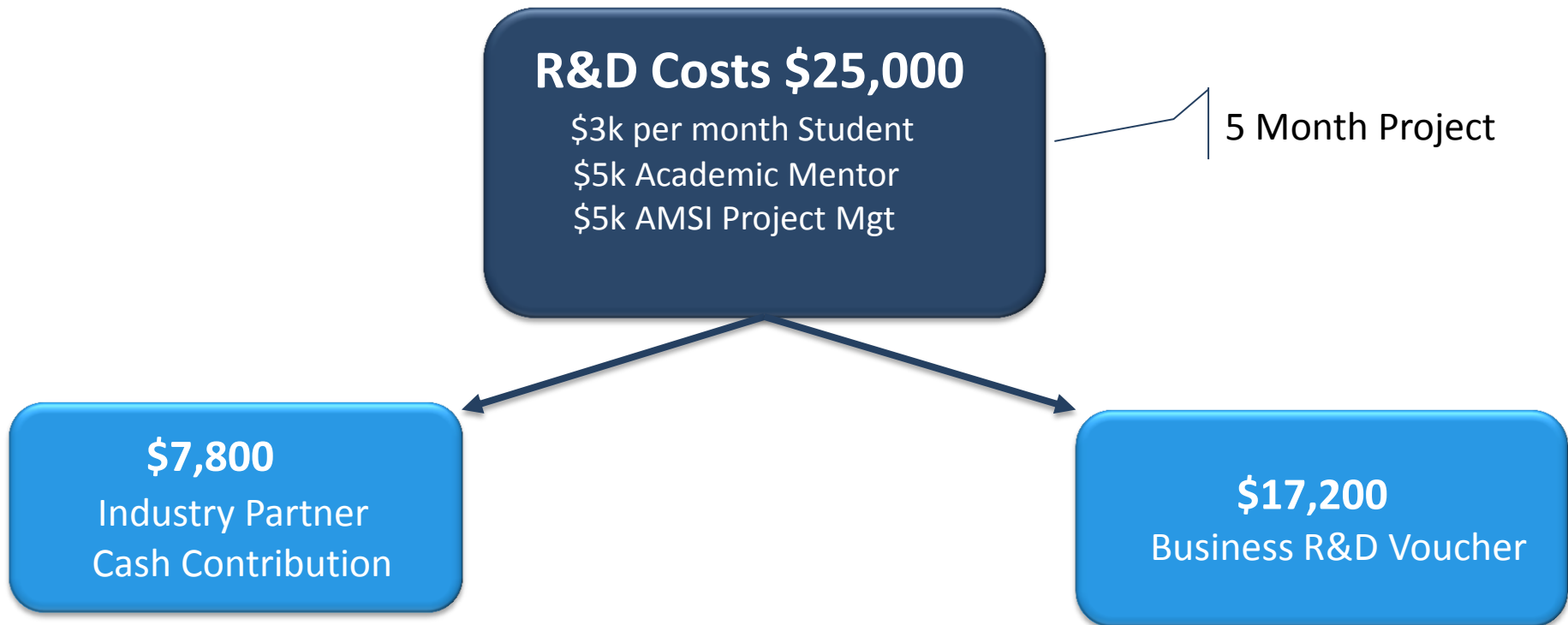**State Funding Model - DSDBI Victorian Business R&D Voucher**

Victorian SMEs may be eligible to access the Business R&D Voucher, an initiative by the Department of State Development, Business and Innovation (DSDBI).

- employ fewer than 200 employees
- have a registered ABN
- not be currently involved in litigation with the State Government in Victoria
- be registered in Victoria; or have more than 50% of their FTE Staff in Victoria; or be willing to undertake the project in Victoria with a local R&D supplier

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Model 2
State Funding Model - DSDBI Victorian Business R&D Voucher

R&D Costs $25,000
$3k per month Student
$5k Academic Mentor
$5k AMSI Project Mgt

5 Month Project

$7,800
Industry Partner
Cash Contribution

$17,200
Business R&D Voucher

An Innovative University and Industry Collaboration

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Project examples

A FASTER ROUTE TO GREENER PROFITS

With online sales soaring, the logistics company wanted to **find more efficient ways to deliver goods.** Ways that would reduce their carbon footprint, and at the same time grow profits: **they needed to optimise their routes.** Visa engaged a creative mathematician to develop new approaches for improving the efficiency of their fleet.

"The results of Yi's work were very impressive, and provided VISA with a verifiable approach to solving the problem, with potential gains far in advance of what had been hoped at the outset.

"**Improvement in efficiency of vehicle movements** will result in a direct and significant saving to VISA Global, both in terms of wear and tear on vehicles, as well as fuel consumption, with the simultaneous benefit of lowering VISA Global's carbon footprint,"

Crunching the numbers in flood management

Natural disasters seem to be on the rise, and the devastating nature of recent floods in Australia has prompted Bass Coast Shire council to enlist a mathematician.

The AMSI Intern program arranged for RMIT PhD candidate Hossein Pourali to work with the BCSC. **Together they developed a 'digital elevation model' to provide a deeper understanding of water flow patterns.**

Mathematical Modeling – Storm studies record breaking statistics

Melbourne Storm received high-end statistical analysis from PhD student Daniel McInnes, with the additional support and specialist knowledge of his academic supervisor.

The project involved **building statistical models to help the club forecast match day ticket sales** using a data driven approach involving applied statistical analysis of the club's match attendance data. This helped Melbourne Storm understand factors that influence crowd attendance at matches such as weather, scheduling, advertising, opponent and other key influencers.