# Biosecurity Innovation Program

Research and Innovation Section, Analytics and Innovation branch

## Who are we?

* We invest in identifying, developing and implementing innovative technologies and approaches to improve biosecurity risk management.
* $5.5 million of allocated funding each year for innovation projects.
* The program overseen by the research and Innovation Section has the experience, knowledge and capability to drive innovation initiatives forward and ensure they have the best chance of success.

## What are we trying to achieve?

* Drive innovation through well targeted investment in new and emerging technologies.
* Ensure we are 'future ready' by funding projects through the Biosecurity Innovation Program and that foster collaboration with Australian and international innovators from the business sector, universities, start-ups and research entities.

## How will we ensure it is working?

* We’ll measure and report on the impact projects have had on enhancing our biosecurity system.
* Annual reporting and regular evaluations, feeding into decisions about future funding.
* Regular stakeholder feedback and input.

## Where are we up to?

* Four years of funding investment in projects that are improving our biosecurity system.
* To date, the Program has funded 77 innovative projects.
* Expression of Interest round opened in October for the 2022-23 projects.
* Foundational systems developed (e.g., ideas collaboration, governance, evaluation).

## Communication and collaboration

Improving communication and collaboration across the biosecurity system to enhance system participants' understanding, awareness and acceptance of biosecurity requirements.

#### What we’ve done so far:

* Building biosecurity awareness through better understanding of the behavioural drivers for people who threaten Australia’s biosecurity.
* Virtual Innovation challenge with industry to identify biosecurity proof of concept solutions.

#### What’s next

* 2022-23 Ideas challenge.
* Mixed-reality technology to invest in staff capabilities.

## Risk analysis

Informing and enhancing our risk-based approach to biosecurity risk management.

#### What we’ve done so far:

* RingIR technology can quickly measure and identify the molecules in the atmosphere and identify the specific chemical present in that environment.
* AI to provide fast, accurate recognition of Brown Marmorated Stink Bugs via mobile phones.

#### What’s next

* Prepare for outbreaks by simulating the spread and control of African Swine Fever.
* Co-designing a container packing app with FTA to support risk-based decisions.

## Surveillance, diagnostics and screening

Enhancing our surveillance, diagnostic and screening capability and capacity.

#### What we’ve done so far:

* Molecular screening using environmental DNA (eDNA) technology.
* High-throughput sequencing to expand our diagnostic capability and deliver faster, more accurate results for plant viruses.

#### What’s next

* Hades 5 robot for used cars and machinery inspection (partnering with New Zealand).
* Drone surveillance for feral pigs.
* DNA testing in cows to address anti-microbial resistance.

## Data and Intelligence

Improving data accessibility and enabling its use as business intelligence to inform biosecurity decision-making.

#### What we’ve done so far:

* Traveller data intelligence through analytical modelling and machine learning.
* Developed wildlife algorithms to manage risk and reduce illegal wildlife trade.

#### What’s next

* Rapid diagnostic capabilities to prepare and respond to emerging threats.
* Develop a risk assessment model for avian influenza.
* Machine learning for biofouling risk.

## Automation

Enhancing our biosecurity processes through the use of automation to improve the effectiveness and efficiency of biosecurity activities.

#### What we’ve done so far:

* Implemented human health reporting digitisation and mobile passport reader projects in Australian airports.
* GoPros for peer-to-peer learning.
* Container sensors for detecting Brown Marmorated Stink Bug.

#### What’s next

* Automating biofouling management plans.
* Automation algorithms to detect seeds in mail items.