

Invest in Me, Invest in My science.

An evidence-based
women in STEM
entrepreneurship
program.

2020



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Australian Government
**Department of Industry, Science,
Energy and Resources**

In collaboration with CSIRO, Darwin Innovation Hub and Axis

Introduction

The Invest in Me, Invest in My Science program's development was supported by the Women in STEM and Entrepreneurship program through the Australian Government Department of Industry, Innovation and Science, which aims to increase the participation of women and girls in STEM and entrepreneurship education and careers, and in other aspects of the innovation ecosystem; and to stimulate an increase in the number of women in senior leadership and decision-making positions in government, research organisations, industry and business (Australian Government 2020).

The **Invest in Me, Invest in My Science program** was co- designed and developed with diversity as a foremost consideration, with the specific aim of fostering inclusive innovation, entrepreneurship and collaboration among women scientists in Northern Australia. Drawing on CSIRO's On Program, Invest in Me, Invest in My Science adapts the Lean LaunchPad business development process and the Miller Heiman strategic selling model to support competitive women scientists to:

- Identify, demonstrate and communicate the broader value of their science
- Create and develop new collaborative teams with other researchers, institutions, mentors and best-practice organisations
- Develop entrepreneurial and innovative research with real-world applications
- Test and build the business case for their science discoveries

Impact

The Invest in Me, Invest in My Science Program is designed for

- Early-career women scientists (piloted)
- Indigenous women scientists (market research and design thinking)

This evidence-based entrepreneurship program enables women scientists in to develop their research profiles and communicate their innovative research programs with real-world impact. Indigenous women want to be instrumental in articulating their STEM knowledge and to share their learnings as global citizens.

“

I didn't know there were so many Northern Australian women scientists!

Thanks for facilitating a great workshop that enabled us to share our concerns and our ideas to design a program that will support us and our science.

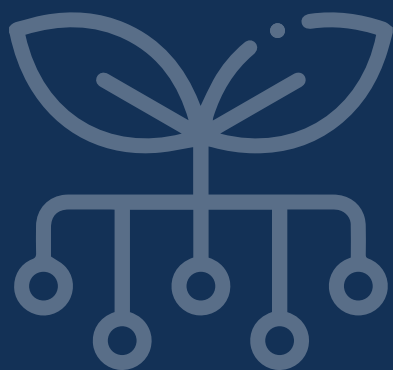
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Outcomes

The **Invest in Me, Invest in My Science Program** is a catalyst for organisations to bridge the gender and diversity divide for women and potentially Indigenous women in STEM.

The program was piloted in Northern Australia by Charles Darwin University and CSIRO in 2019-2020 and offered two different components of support. First, a series of webinars and an in-person workshop were developed for early-career women scientists to help participants understand their value and test, validate and pitch their ideas, laying the critical groundwork for innovation, collaboration and commercialisation.

Participants were also supported to develop the necessary mindset and leadership skills to carve out career paths and opportunities tailored to their strengths and aligned with their values and goals. Second, a series of three in-person workshops (held in different locations in the Northern Territory) was developed for Indigenous women scientists to explore the idea of creating a dual academy within higher education, where Indigenous and Western knowledge systems, values and pedagogy are equally valued.



The program delivers a number of important outcomes that are key features of the program.

SUPPORTING

women in STEM, to eliminate barriers for women's participation in STEM careers including entrepreneurship.

ENABLING

a competitive edge for women scientists to test and build the business case for their research, allowing them to identify, demonstrate and communicate the broader value of their science, with particular focus on real-world applications.

ENHANCING

the performance and capability of women in science to build sustainable careers, grow their work and fulfil their potential.

ADDRESSING

the significant barriers to women's participation, and particularly Indigenous women's participation in STEM innovative and entrepreneurship activities.

IMPROVING

women's experience in the STEM workforce and helping to drive cultural change for increased innovation.

ENGAGING

Indigenous women to share, expand and extend their ideas to make Indigenous women visible in STEM

“

Being a women scientist in Northern Australia can be isolating.

It is hard to collaborate with our colleagues down south – we have such different capabilities, access to resources and levels support.

A program that reflects our needs and challenges to resource our great ideas is really valuable.

”

Program information

Who?

Women in STEM and/or Indigenous women in STEM to enhance their scientific profiles and to develop and pitch their innovative projects.

What?

The program adapts successful business development approaches to work with potential women scientists as entrepreneurs. The Lean Launch Program (LLP) business development approach combines experiential learning with the three components of a successful lean start-up: business model canvas, customer development and agile development (Blank 2013). The approach is based on identifying a need, creating a value proposition and developing a full understanding of the problem that the product/service solves (Blank 2013).

To achieve this, entrepreneurs need to build a great deal of empathy with customers, iterate with their feedback, and pivot or change their strategy if necessary (Blank 2013). The program draws on the Miller Heiman (strategic selling model, which focuses on strategic selling approaches that add value to pitches and are informed by insight of complex decision makers and industries.

About the Northern Institute

Northern Institute (NI) is a regional leader in high quality social and public policy research. NI's research aims to develop an understanding of regional development and provide robust evidence to inform policy development, facilitate capacity building and respond to the needs of governments and communities.

With research teams led by internationally and nationally recognised human geographers, NI develops research in

the areas of demography and growth planning, transdisciplinary methodologies and knowledge-making processes, Indigenous knowledge & governance, social inclusion and community engagement, remote workforce development and pathways for training, and social sustainability across Northern, Central Australia and the nations to our north.

Visit www.cdu.edu.au/northern-institute

Why?

Academic entrepreneurship has garnered substantial interest as an important driver of the dissemination and commercialisation of scientific knowledge, with a wide range of studies acknowledging the potential to transform scientific discoveries into innovations with broad economic and societal impact (Siegel & Wright, 2015; Schmitz et al., 2016). This has fuelled a growing number of innovation programs in the research and development sector, both in Australia and worldwide, such as CSIRO's ON Program that focus on supporting science entrepreneurship and the transformation of creative ideas and solutions into commercial opportunities with real-world application.

In both the academic and the private sector, research has highlighted that diversity—including gender diversity—is vital to innovation (Elsevier Research Intelligence, 2017). To date, however, the majority of innovation programs have focused on mainstream approaches and audiences, with less space devoted to valuing and nurturing innovation among diverse groups, particularly in more remote, resource-poor locations. Recent studies have highlighted a gender gap in a number of measures of research commercialisation. For example, women scientists have lower propensities towards entrepreneurship and are less likely to disclose, patent and license their inventions and create spin-offs based on their research results (Abreu & Grinevich, 2017). Recognising that gender equality is fundamental to scientific and technological excellence, initiatives focused on supporting and nurturing the unique perspectives and skills of women researchers have rightly become a global priority (Shannon et al. 2019).

Where?

The Invest in Me, Invest in My Science program will be delivered by Charles Darwin University and CSIRO using a combination of online and face-to-face adapted through negotiation with participants.



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Program components

Component 1: Support for early-career women scientists

A program consisting of three online webinars; a one-day workshop; a grant pitch opportunity to progress a science idea on the path towards collaboration and commercialisation; and a mentorship initiative - matching participants with industry mentors.

Virtual Career Coaching Webinars

Together, these three (3) complementary webinars are designed to provide the necessary resources and activities to help women scientists to identify and articulate the value of their science and attract investment for their innovations/innovative projects.

The webinars focus on three big-picture ideas:

WEBINAR 1 - ACTIVATE YOUR THINKING

Participants are introduced to the concept of a growth mindset then guided to develop their own for both their science and their careers. Participants develop an understanding of the importance of feedback and practising how to ask for and respond to feedback. Participants learn how to identify successful learning strategies and apply these strategies to crafting and delivering an effective science pitch. Finally participants complete an action plan for fostering a growth mindset.

WEBINAR 2 - DEFINE YOUR VALUE

Participants take part in a range of activities to understand and articulate the value of themselves and their science. They identify their biggest areas for development and evaluate future roles and career paths. Participants reflect on their strengths and their biggest areas for development; gathered feedback from trusted colleagues, friends and mentors; examined the keys to help evaluate future roles and career paths; and identified trends in tasks they loved and tasks they loathed to better understand the types of roles that aligned well with their strengths and interests. Participants refine their resumes to strengthen their capacity to attract collaboration and investment opportunities. Key actions for strengthening skills included volunteering for a professional organisation or scientific society in the relevant field, participating in grant writing with a supervisor, gaining experience as a supervisor or mentor, and taking practical action to overcome a self-perceived weakness. Finally focusing on building profiles and strengthening skills, participants are guided to identify their "best next steps" and make an action plan.

WEBINAR 3 - EXPLORE YOUR OPPORTUNITIES

Participants focus on networking and transferring skills. The webinar examines issues of trustworthiness, using a trust equation that identified the key components that can build or detract from trustworthiness. Credibility, reliability and intimacy (how safe and secure a person feels sharing in a relationship) are developed as factors that can build trust, while self-orientation was identified as a factor that can detract from trust. Participants look at actions they can undertake to (1) build trust within their networks and (2) build trust with external collaborators. As a final task, participants create their strategy to encourage potential stakeholders to invest in them and their science.

One day pitch & strategy workshop

This workshop provides an opportunity for webinar participants to perfect how they pitch their research and ideas to potential collaborators and investors. It prepares women in science for focused feedback to strengthen their pitches. Assisting to develop a strategy for attracting investment in them and their science, the value they bring to a collaboration (e.g. key qualities, key skills) and the type of investment they need to support their work (in terms of both money and people).

Throughout the workshop, participants will plan specific activities to implement their investment strategy and explore investment opportunities for their science. Participants leave fully prepared with a clear pathway to apply for grant money and pitch their innovative idea.

Investment grant to guide innovation

Providing an opportunity to apply for a grant (recommend \$5K-10K) to assist participants to explore investment and collaboration opportunities for their science. Participants submit a one-page document introducing themselves and their science with a 200-word pitch describing the research idea for which they are seeking investment opportunities.

These grants could be used to cover the costs of travelling to meet with possible investors, for example, or to convert a pitch into a prospectus. Mentors are identified to match with projects to guide their efforts.



Component 2: Support for Indigenous women scientists

Background

A program designed and led by Indigenous women for Indigenous women designed through a dual knowledge innovation framework. The program provides a culturally inclusive pathway to draw on multiple knowledge systems that recognises Indigenous knowledge as equally “valid and credible” whilst being “flexible enough to recognise and embrace the diversity of Indigenous culture” (Woodroffe, Lowell, Lawurrpa Maypilama & Pollard, 2020, p. 2). The workshops are held on the country identified by the participants as relevant to their STEM entrepreneurial activity and knowledge holders. The meetings are designed to identify the strengths of the participants incorporating the ways science entrepreneurial knowledge is governed from a Western and Indigenous perspective and enable women to establish a framework to identify the key elements of a STEM entrepreneurial strategy, communicate the strategy to ensure endorsement and gain external support.

Three team workshops

A series of three workshops are led by Indigenous women scientists to explore the opportunities to catalyse their science and experience to commercialise their work and achieve entrepreneurial outcomes. The workshops are co-designed with participants and held in sites identified by the participants as places of significance for the women involved, the work to be developed and identify the external agencies that could be relevant. The overarching themes are outlined on page 11.



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WORKSHOP 1 – ESTABLISHING EXPERTISE

Indigenous women and non-Indigenous colleagues present an overview of their own expertise in their chosen fields and discuss the role that their Indigeneity plays in the recognition, acquisition and transmission of content knowledge. Women identify possible projects to be developed through the program then test their ideas and pitch with the broader group. Participants consider the knowledge governance issues in Indigenous and non-Indigenous contexts that will impact on their own project.

WORKSHOP 2 – ACCESSING KNOWLEDGE

Indigenous women and non-Indigenous colleagues draw on their experience in STEM entrepreneurial activities to identify science-based activity that could be developed for an external audience. Indigenous women and non-Indigenous colleagues build a framework to assess the ideas prioritised through the program, identify the knowledge and practice elements that need to be addressed and develop links to entrepreneurial activities. This workshop actively values Indigenous and Western knowledge systems and develops ways to articulate connections between ideas and entrepreneurial activities. Participants reflect on feedback from community, science and industry partners.

WORKSHOP 3 - CONNECTING BUSINESS OPPORTUNITIES

Indigenous women and their non-Indigenous colleagues share on the knowledge they have gathered through the process. The Indigenous Innovation Alliance entrepreneurial development framework is used to identify the stages of readiness of Indigenous led science business activities. Participants refine and present their plan ready for publication and dissemination. Together they plan the next stages of their project to gain financial support and external champions to ensure the sustainability of the project. They also form a network to support each other in the long term. This program was a unique and authentic experience providing an opportunity for participants seeking to increase their social impact, to develop their career and networks in a different way.

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Further information

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