

Australian NCGP Reform - One-Pager

An interactive system-dynamics simulator of the ARC National Competitive Grants Program

iMORSE

Audience: decision-makers and advisers

Estimated time: 10 minutes

What this is

This is an interactive simulator. It runs a validated system-dynamics model of the Australian Research Council's National Competitive Grants Program and lets you test the 2027 reforms forward. It is not a spreadsheet forecast. It is a model of how the research funding system behaves over time - how a near-flat budget, a rising fellowship share, a slow-building workforce and the reforms interact - built in the tradition of system dynamics developed by Jay Forrester at MIT and refined over six decades.

It has two views. The left view reproduces documented ARC history from 2010, so you can watch the model behave like the real program before trusting any forecast. The right view re-anchors to today and runs the reforms forward, with sliders you move and two scenarios you can compare side by side.

What it is built on

The model is calibrated to ARC and government data - the rising fellowship share, the near-flat-to-declining real budget, the observed career-stage shares, the growth in industry collaboration, and Indigenous participation. Its behavioural relationships are the main uncertainty, and the most consequential of them are exposed as levers rather than hidden. Read shapes and turning points, not point values.

The levers you control

The simulator exposes 7 policy levers in the forward view, each proven during validation to move the model:

Lever	Parameter	Baseline	Units
Remove senior/mid-career fellowships	fellowship_removal	0.0	dimensionless
Lift Indigenous funding 1% to 5%	indigenous_boost	0.0	dimensionless
Simplify 15 schemes to 7	scheme_simplification	0.0	dimensionless
Initiate + ECR salaries (early-career recruitment)	initiate_boost	0.0	dimensionless
Lead & Mentor (preserve senior mentoring)	lead_mentor_boost	0.0	dimensionless
Dispersal-vs-concentration effect on output	dispersal_output_elasticity	0.3	dimensionless
Labour-market pull out of academia	external_labour_pull	1.0	dimensionless

What you see

The dashboard presents 7 charts:

#	Chart
1	Early-career researchers
2	Funded projects (project-type grants)
3	Research workforce by career stage
4	Career-stage shares of the workforce
5	Indigenous researchers
6	Collaboration and funding concentration
7	Mid-career precarity

How to read it objectively

The forward view is not a forecast. It is an instrument for seeing how the conclusions depend on the reforms and on the assumptions you are willing to make. The interesting behaviour is in the interactions between levers, so move them one at a time first, then in combination. Where a number matters to a decision, treat it as directional.