



AMSI News

Geoff Prince*

National Research Centre: next steps

On 25 February 2015 the inaugural meeting of prospective partners in the proposed National Research Centre in the Mathematical Sciences (NRC) took place at AMSI. These stakeholders included the AMSI membership, research hotspots including various Centres of Excellence, learned societies and government agencies. The purpose of the meeting was to elaborate and refine the vision for the centre and to get the necessary business planning underway. As a result of the discussions at the meeting I created this statement of purpose upon which I invite comment from *Gazette* readers. Of course, I take sole responsibility for its contents. I favour the current consensus for a mix of distributed programs along with the establishment of an international research station.

National Benefits

- The significant growth of high quality research outputs through programs funded publically and privately
- The strengthening of mathematical sciences in all of Australia's universities and research agencies
- The establishment of Australia as a research destination on the international scene
- The establishment of a nationally owned, international research station
- The networking of Centres of Excellence and the enhancement of their connectivity with agencies and universities
- A vehicle to broker partnerships and funding agreements, nationally and internationally (cf. the NSF funding for the Banff Research Station)
- A hothouse for mathematical sciences start-up companies
- The establishment of deep and productive connections between the universities, agencies and the private mathematical sciences sector
- Genuine deep research engagement with other research disciplines and business and government sectors
- The growth of research training and its strategic alignment with national research and recruitment goals both theoretical and applied, public and private
- Increased public awareness of the role of the mathematical sciences in 21st century science, technology, innovation, the social sciences and commerce

Benefits to Partners

- Partner programs strengthened and defended where necessary
- Local profiles raised
- Local programs used as in-kind contribution to NRC

*Australian Mathematical Sciences Institute, Building 161, c/- The University of Melbourne, VIC 3010, Australia. Email: director@amsi.org.au

- Increased local activity via NRC engagement and funding
- Increased external engagement via NRC network
- Lowers costs of, and barriers to, collaboration, especially for the research agencies and smaller university departments
- Replaces ad hoc collaborations with strategically sourced ones
- Local key performance indicators boosted through shared programs
- Establishment of a strong communication channel with funding bodies and policy makers (i.e. a strong lobby group)

Interim Structure

- Interim structure for three years
- National Research Director appointed
- Research station scoped with a view to early establishment
- Partners continue to deliver their own programs
- Partner programs co-badged as NRC
- NRC runs over-arching programs e.g. MPE Australia
- Ongoing funding from government and private sector secured
- Governance structure created

Programs at maturity

- Conventional theme programs (6–12 months)
- Three-year funded programs
- High profile international workshops and themes at research stations (cf. Banff, Oberwolfach)
- Research in Pairs
cf. <http://www.mfo.de/scientific-programme/long-term/research-in-pairs>
- Small grant scheme
- Commercial start-up support scheme
- National postgraduate training integrated across sectors
- Postdoctoral coursework programs
- Outreach
- International partnerships
- Joint NRC/ARC and NRC/NHMRC programs
- Joint international programs
- Expanded graduate schools eg optimisation, big data, computational science, security

Funding for years 1–3

- Business Plan — AMSI to fund writing \$50k max
- Business Plan to raise initial total of \$1.2m for salaries:
Director and EA, fund raising and event manager ~\$415k pa for three years
- Program costs \$250k pa to be raised by the NRC team
- Ongoing funding in excess of \$5m pa to be raised by NRC team

Frequently Asked Questions

1. Why not just let AMSI do this?

AMSI is seen by government and other potential stakeholders as a single entity rather than a national collaboration. This may have been what cost us our significant (in \$ and activity terms) bid for an Australian Mathematics and Science Partnership Project award.

A collaborative approach including agencies, CoEs and private partners should overcome this perception and indicate broad benefit. It should also widen the future funding base.

2. Why spend \$415k over three years on salaries for a research director, etc. when the money could be spent on programs?

- (a) The purpose of these positions is to raise the capital and put the structures in place for a full-blown sustainable centre. AMSI does not have the current capacity to do this.
- (b) AMSI does not currently have the human capacity to run these extra programs even if the cash was available.
- (c) The thinking implicit in the question will not deliver the sort of centre on the scale that we want.

3. This process will take too long; for example we will have to wait at least three years for a research station to be established.

While I can't pre-empt the decision making around the business plan there is a prima facie case for beginning research station programs early at a temporary location but with a clear external identity.

◇ ◇ ◇ ◇ ◇ ◇

We expect to run open access meetings once the business planning gets underway in June but please give me a call or send me an email to discuss any aspect of this proposal.

Reminder: our next workshop application round closes on 5 June 2015.



I was a Monash undergraduate and took out a La Trobe PhD in 1981 in geometric mechanics and Lie groups. This was followed by a postdoc at the Institute for Advanced Study in Dublin. I've enjoyed teaching at RMIT, UNE and La Trobe. My research interests lie mainly in differential equations, differential geometry and the calculus of variations. I'm a proud Fellow of the Society, currently a Council and Steering Committee Member. I became AMSI director in September 2009.