

## **E2. Details of non-ARC contributions**

### **Personnel**

#### **A/Prof Henry Gardner (in-kind Salary Level D2, 0.2 FTE)**

A/Professor Henry Gardner's salary (20% of Academic Level D2 at ANU) and on-costs of 32.55% are directly contributed by the Australian National University.

#### **A/Prof Stephen Roberts (in-kind Salary Level D3, 0.2 FTE)**

A/Professor Stephen Roberts' salary (20% of Academic Level D3 at ANU) and on-costs of 32.55% are directly contributed by the Australian National University.

#### **A/Prof Peter Strazdins (in-kind Salary Level D2, 0.2 FTE)**

A/Professor Peter Strazdins' salary (20% of Academic Level D2 at ANU) and on-costs of 32.55% are directly contributed by the Australian National University.

#### **Prof Trygve Hegland (in kind Salary Level E1. 0.2 FTE)**

Professor Trygve Hegland's salary (20% of Academic Level E1 at ANU) and on-costs of 32.55% are directly contributed by the Australian National University.

#### **Research Associate – Computer Science (Level B3, 1.0 FTE)**

The ANU will cover the difference between ARC and ANU salary rates. The on-costs gap of 2.55% will entail an ANU cash contribution of \$8,214 over the three years of appointment.

#### **Research Associate – Mathematics (Level B1, 1.0 FTE)**

The ANU will cover the difference between ARC and ANU salary rates. The on-costs gap of 2.55% will entail an ANU cash contribution of \$7,379 over the three years of appointment.

#### **PhD/HDR stipends – Computer Science and Mathematics**

Two PhD scholarships at the APA rate have been requested from the ARC in E1. As mentioned in C1, three further APA scholarships will be sought by the project through ANU. Two will be for students hosted by Computer Science and one by Mathematics. We anticipate success in recruiting these students because of the high profile that this project will have in both schools.

### **Travel**

#### **Domestic conference - computer science**

The ANU will cover the cost of one of the CIs, Gardner or Strazdins, or one of the PhD students, to attend the same domestic conferences as the computer science research associate.

**Year 2 - 2019** ACSW. Cost \$2,522 (see E1 justification).

**Year 2 - 2019** OzCHI. Cost \$2,736 (see E1 justification).

### **Domestic Conference - mathematics**

The ANU will cover the cost of one of the CIs, Roberts or Hegland, or one of the PhD students, to attend the same domestic conferences as the mathematics research associate.

**Year 2 - 2019** CTAC2019. Cost \$2,826 (see E1 justification).

**Year 3 - 2020** Modsim2020. Cost \$2,782 (see E1 justification).

### **International conference - computer science**

The ANU will cover the cost of one of the CIs, Gardner or Strazdins, or one of the PhD students, to also attend the same international conferences and Sandia labs as the research associate.

**Year 2 - 2019** SC 2019 and Sandia Labs. Cost \$6,479 (see E1 justification).

**Year 3 - 2020** CHI 2020. Cost \$5,616 (see E1 justification).

**Year 4 - 2021** ICSE 2019. Cost \$6,015 (see E1 justification).

### **International conference - mathematics**

The ANU will cover the cost of one of the CIs, Roberts or Hegland, or one of the PhD students, to also attend the same international conferences and Sandia labs as the mathematics research associate.

**Year 1 - 2018** SIAM CSE 2018 and Sandia Labs. Cost \$7,597 (see E1 justification).

**Year 2 - 2019** SIAM UQ 2019. Cost \$5,406 (see E1 justification).

**Year 3 - 2020** SIAM CSE 2020 and Sandia Labs. Cost \$7,597 (see E1 justification).

### **Access to NCI Tenjin HPC Cluster. 200k service units p.a.**

In this project we will leverage on-demand compute resources, such as the National Compute Infrastructure NCI Cloud Tenjin. Using these cloud services will further improve the project's ability to deliver timely results in high-pressure and time-critical decision making scenarios.

A 24 hours high fidelity simulation of a 50-100 km<sup>2</sup> catchment represented by a 2,500,000 triangular mesh takes some 400 hrs CPU time. When run on the NCI Raijin machine with 640 processors, this reduces to 1 hr wall time. To produce a reasonable surrogate model we will need to run multiple such jobs off line. In the development stage we will apply for enough CPU time to run up to 500 high fidelity runs on small catchments. This equates to 200k CPU hours. As such, in each year of the project we will apply for at least 200k service units from the ANU allocation of NCI facility.

Costing based on NCI partner rate of 0.75 of the standard NCI rate of 4c/service Unit. Total \$6,000/year (pro rata to 0.5 years in the fourth year of the project).