BUDGET JUSTIFICATION

Salaries and Wages – Senior Personnel

We are requesting one summer month of PI support per year for the three-year project. The PI will be responsible for the overall management and execution of the project, for ensuring appropriate levels of communication among the collaborators, and for mentoring and guiding a graduate student researcher.

A salary escalation factor of 3.0% per year is applied to the PI salary.

Salaries and Wages – Other Personnel

Graduate Student: Funding for one graduate student researcher (GSR) for both the academic and summer months is requested for the three-year project. Consistent with University policy, full salary support includes 100% salary during the summer months and 50% salary during the academic year. The graduate student will be involved in all aspects of the project, but will focus on the design and implementation of inference algorithms as described in the proposal, as well as the application of these algorithms to data provided by our collaborators at Rutgers University. The student will also assist the PI on performing research, validating results, and writing papers.

A salary escalation factor of 3.0% per year is applied to the GSR salary.

Fringe Benefits

Fringe benefits are calculated as follows:
13.5% PI Summer
3.0% GSR Summer
2.5% GSR Academic Year

Permanent Equipment

No equipment is requested as part of this budget.

Travel

Domestic Travel:
The budget includes $10,800 in travel for the PI and Grad Student over the project duration ($3200 Year 1; $3800 Year 2; $3800 Year 3). Travel includes the following:
Year 1:
• IEEE Conference on Decision and Control: 12-16 Dec 2016, Las Vegas, NV (PI): $1800
• CPS PI meeting (2016) Washington, DC area (PI): $1400

Year 2:
• Cyber-Physical Systems Week Conference: TBD, US location (PI and Grad Student): $2400
• CPS PI meeting (2017) Washington, DC area (PI): $1400
Year 3:

- Cyber-Physical Systems Week Conference: TBD, US location (PI, Grad Student): $2400

Travel to Rutgers University is not included in the UC Santa Cruz budget. Rather, in-person collaboration between the two institutions will take place at UC Santa Cruz, and these costs are included in the budget submitted by Rutgers.

Foreign Travel: None

Participant Support Costs

None

Other Direct Costs

**Materials and Supplies:**

M&S funds are requested for operating expenses that can be identified specifically with this particular sponsored project and are required in the direct performance and dissemination of the research. These expenses include computer software (but not general-purpose computing equipment). We are requesting $2,000 in Year 1 and $720 in Years 2 and 3.

**Publication Costs/Page Charges:**

We are requesting a total of $1,000 in Year 3 for journal articles and conference proceedings, as appropriate.

**Other:** Tuition and fees are included for the Graduate Student Researcher.

Indirect Costs

The indirect cost base includes all direct costs except Graduate Student tuition and fees. Indirect costs are calculated on the F&A cost rate agreement as follows:

- 53.5% in Year 1
- 54.0% in Years 2 and 3