

## **Budget Justification**

### **SENIOR PERSONNEL (\$350,836 total over a four year period.)**

Summer salary support in the amount of 180 hours is requested in each of the four years for the PI (Ma) and senior personnel (Robison, Sheneman, Gao, Liao, Fan, and Jamil), with an anticipated 3% annual increase throughout the project. In addition, the PI (Ma) requests support of one academic month per year for the administration this project over a period of four years. The PI will be responsible for the overall coordination of the project, and will be the facilitator for the assigned research activities, milestones and deliverables in the project.

Full annual salary supports are requested for one postdoctoral researcher for a period of four years. The amount of support is calculated based on the current salary rate with an anticipated 3% annual increase. Prof. Ma will be the mentor of the postdoctoral researcher, who will work with the team to contribute to the research, education and outreach programs of this project.

The University of Idaho has determined the salary year for senior personnel to be based on the calendar year.

### **FRINGE BENEFITS OF PERSONNEL (\$209,131 total over a four year period.)**

Fringe benefits for faculty and staff members are charged at different rates approved by the university. For the faculty member, the fringe benefit rates will be 30.9% across all project years. For the staff member (i.e. postdoctoral researcher), the rates will be 40.5% across all project years. Fringe benefits for RAs are estimated at a rate of 3.4%, as approved by the university.

### **RESEARCH ASSISTANTS (\$469,445 total over a four year period.)**

The project will create two PhD research assistant positions, and each will be 780 semester hours and 320 summer hours per year for a period of four years. The stipend is calculated based on the current university rate (\$24/hour) with an anticipated 3% annual increase. The project will also create two undergraduate research assistant positions, each will be 200 hours per year with payment rate \$12/hour, for a period of four years.

### **TRAVEL (\$206,000 total over a four year period.)**

Travel funds are requested for the project team members (PI, co-PI, senior personnel, postdoc and graduate student) to attend meetings or conferences. The estimated average cost for a travel, including flights, hotel and per diem, for one person to one conference, will be approximately \$2,000. The project plans about 10 such conference travels per year over the period of four years.

Travel funds are requested for the project team members (PI, co-PI, senior personnel, postdoc and graduate student) to attend the annual project group meeting. The estimated average cost for a travel, including flights, hotel and meals, for one person to one meeting, will be approximately \$1,900. The project plans the travel support to 10 team members annually over the period of four years.

Support is requested for the project team to participate the NSF centralized project data collection activities. The planned annual cost is \$12,500.00, for a period of four years.

**OTHER DIRECT COSTS (\$703,715 total over a four year period.)**

The project will pay hardware and software development service fee \$30,000 per year to the Northwest Knowledge Network (NKN) at the University of Idaho for years one and two and three and \$24,000 in year four. This cost is for the construction of the project website and the project data repository. Also, the project will pay NKN data curation service fee \$25,000 per year for all four years. The cost is for the data collection and stewardship to support research activities.

Support is requested for the development of video games and interactive demos at the Polymorphic Games studio of the University of Idaho. The cost is \$60,000.00 per year for a period of four years. The resulting games and demos will be used in the education and outreach activities of this project.

Support is requested for the computational core service at the Institute for Bioinformatics and Evolutionary Studies (IBEST) at the University of Idaho. For each standard account, the cost is \$1,500.00 per year. The project will support eight accounts for each of the four years. The cost is to support the data-intensive computation needs of this project.

Support is requested to pay the consultancy fee to an external evaluator (Bernard) for a period of four years. The budgeted amount is averaged to \$25,000 per year for all four years. Included in the evaluation budget are funds for Dr. Bernard's salary and fringe as well as domestic travel funds, publication costs and materials and supplies necessary for evaluation.

Support is requested for open access publication cost. The project plans to deliver four of its publications as open-access journal papers each year for a period of four years. The publication fee will be \$2,400.00 per paper.

Support in the amount of \$1000 per year is requested for printing posters and handouts that the project team will present at meetings and academic conferences as well as reports, handout brochures and flyers.

Five notebook computers are requested to support the project at an estimated price of \$2,000 per computer. The total cost will be \$10,000.

**TUITION and FEES (\$107,598 total over a four year period.)**

Support for the tuition and insurance of two PhD student research assistants is requested for a period of four years. The tuition and insurance will be charged at according rates (FY19-20 \$4,938/semester for tuition and \$951/semester for insurance, \$520/summer credit) approved by the university, and both will increase 6% annually.

**SUBAWARDS (\$2,912,898 total over a four year period.)**

Subaward supports to University of Nevada, Reno and Dartmouth College are requested. The budget plan and justification of each subaward are listed separately.

<b>Subrecipients</b>	<b>Y1</b>	<b>Y2</b>	<b>Y3</b>	<b>Y4</b>	<b>Total</b>
Subaward to University of Nevada, Reno	436,766	420,268	421,058	421,908	1,212,898
Subaward to Dartmouth College	291,991	294,254	306,500	320,153	1,700,000

<b>Total Subcontracts</b>	<b>728,757</b>	<b>714,522</b>	<b>727,558</b>	<b>742,061</b>	<b>2,912,898</b>
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#### **INDIRECT COSTS (\$921,085 total over a four year period.)**

A total of \$921,085 in indirect costs is requested. For the UI, modified total direct costs consists of all salaries and wages, fringe benefits, materials, supplies, services, travel and subgrants and subcontracts up to the first \$25,000 of each subgrant or subcontract (regardless of the period covered by the subgrant or subcontract). Modified total direct costs shall exclude equipment, capital expenditures, charges for patient care, student tuition remission, participant support, rental costs of off-site facilities, scholarships, and fellowships as well as the portion of each subgrant and subcontract in excess of \$25,000.

#### **TOTAL PROJECT COST**

The total project amount requested from NSF is \$4,909,623 in direct costs and \$921,085 in indirect costs for a total project request of \$5,830,709.