

BUDGET JUSTIFICATION

A. Senior/Key Personnel:

PI, Dr. Andrew Huff, will commit 3 months (520 hours) per year each year of this budget. He will be primarily responsible for the management of Mantle's research and development. Dr. Huff will oversee all aspects of the project, and manage communication and collaboration with subawardees. He will also contribute to data analysis and manuscript writing.

Senior Research Scientist, Dr. Peter Daszak will commit 1 day every other month (8 hours x 6 days= 48 hours) to this budget. He will also contribute to research and development, overseeing the project, general management, and will contribute to manuscript writing.

Senior Software Developer, Brock Arnold will commit 3 months (520 hours) each year to this budget. Mr. Arnold will serve as Senior Software Developer on the project and will manage developer and data science staff. Brock will contribute to the coding of the Mantle app and manage Mantle's code base.

Data Scientist, Toph Allen will commit approximately 4.5 months (800 hours) per year each year of this budget. Mr. Allen will be primarily responsible for research and development on Mantle's metadata capabilities. Mr. Allen will also test and train models and machine learning algorithms to be incorporated into Mantle. He will also contribute to data analysis and manuscript writing.

EHA key personnel (engineers and scientists) will be used as needed throughout the project in small percentages compared to the overall allotment of staff time. Supplementing the development of Mantle with other key staff members ensures that Mantle will be successful when obstacles to research and development are inevitably encountered.

B. Other Personnel:

Ms. Robyn Schreiber will commit 3 months (520 hours) each year to this budget. Ms. Schreiber will serve a Secretarial/Clerical role on the project and will manage administrative duties including scheduling, recording and preparing reports, facilitating effective communication and being a point of contact for inquiries.

Key EHA Staff as necessary will commit time amounting to approximately 3 months (520 hours) each year to this budget. Staff time will be utilized in the area of their specific expertise. Key EHA Staff includes contribution from expert disease modeler Dr. Noam Ross and contribution from an EHA software developer.

Fringe benefits for all years are calculated for EcoHealth Alliance's federally approved rate of 35.1% of salary amount.

C. Equipment:

No equipment costing more than \$5,000 will be purchased.

D. Travel:

Domestic Travel

\$16,284.00 is requested for Year 1 domestic travel to attend/present at two conferences and one meeting with NIH stakeholders. The PD/PI and 2 personnel will attend each conference and meeting.

Travel expenses for the first conference, the Joint Statistical Meetings 2016 Conference in Chicago, Illinois, are calculated *per person* for 3 personnel as follows: 5 night, 6 day trip \$71 for meals and incidentals (note: 75% of per diem rate is applied to the arrival and departure days, as per federal guidelines) [$(\$71 \times 4 \text{ days}) + (\$71 \times 75\% \times 2 \text{ days}) = \390.50]; \$192 for hotel costs [$\$192 \times 5 = \960]; \$500 for round-trip airfare; and \$200 for local transportation to/from the airport to the hotel and to/from the hotel to the conference.

Travel expenses for the second conference, the International Society for Disease Surveillance Conference in Denver, Colorado, are calculated *per person* for 3 personnel follows: 3 night, 4 day trip \$66 for meals and incidentals [$(\$66 \times 2 \text{ days}) + (\$66 \times 75\% \times 2 \text{ days}) = \231]; \$163 for hotel costs [$\$163 \times 3 = \489]; \$500 for round-trip airfare; and \$300 for local transportation to/from the airport to the hotel and to/from the hotel to the conference.

\$5,572.50 is requested annually (Year 1, Year 2 and Year 3) as travel expenses for the PD/PI and 2 personnel to travel to the BD2K consortium, held within the United States at a location to be determined by NIH staff. Expenses are calculated, using the District of Columbia per diem rates, *per person* as follows: as follows: 4 night, 5 day trip (note: per diems are based off of the District of Columbia) \$71 for meals and incidentals [$(\$71 \times 3 \text{ days}) + (\$71 \times 75\% \times 2 \text{ days}) = \319.50]; \$222 for hotel costs [$\$222 \times 4 = \888]; \$500 for round-trip airfare; and \$150 for local transportation to/from the airport to the hotel and to/from the hotel to the consortium.

\$8,299.50 is requested additionally for Year 3 domestic travel to attend/present at one conference and one launch event.

Travel expenses for the conference, the International Workshop on Big Data in Bioinformatics and Healthcare Informatics, are based off per diem rates for the District of Columbia and are calculated *per person* for 3 people (PD/PI and 2 personnel) as follows: 3 night, 4 day trip \$71 for meals and incidentals [$(\$71 \times 2 \text{ days}) + (\$71 \times 75\% \times 2 \text{ days}) = \248.50]; \$222 for hotel costs [$\$222 \times 3 = \666]; \$500 for round-trip airfare; and \$200 for local transportation to/from the airport to the hotel and to/from the hotel to the conference.

Travel expenses for the product (Mantle) launch in New York, New York are calculated *per person* for 2 personnel (remote personnel traveling to New York) as follows: 2 night, 3 day trip \$71 for meals and incidentals [$(\$71 \times 1 \text{ day}) + (\$71 \times 75\% \times 2 \text{ days}) = \177.50]; \$268 for hotel costs [$\$268 \times 2 = \536]; \$500 for round-trip airfare; and \$150 for local transportation to/from the airport to the hotel and to/from the hotel to the launch event.

International Travel

\$13,414.50 is requested for Year 2 international travel of the PD/PI and 2 personnel to attend/present at the International Society for Infectious Diseases Conference in London, England. Travel expenses for the ISID are calculated *per person* as follows: 4 night, 5 day trip \$175 for meals and incidentals [$(\$175 \times 3 \text{ day}) + (\$175 \times 75\% \times 2 \text{ days}) = \787.50]; \$346 for hotel costs [$\$346 \times 2 = \1384]; \$2,000 for round-trip airfare; and \$300 for local transportation to/from the airport to the hotel and to/from the hotel to the conference.

E. Participant/Trainee Support Costs:

There are no participant/trainee support costs.

F. Other Direct Costs

Materials/Supplies

We request \$6,045.00 in Year 1 for equipment to facilitate product (program and app) development including 1 Nexus 9 tablet (\$399), 1 iPad Air 2 (\$599), 1 128 GB iPhone 6 (\$399), 1 MacBook Pro (\$1,499), 1 Thunderbolt Display (\$999), 5 books or reference materials calculated at \$30 each (\$150) and consumables for enhanced work productivity (\$2,000). Consumables will include office supplies such as ink, paper, post-its, pens, USB drives, and occasional lunches.

Publication Fees

We request funding for two publications each year. Publication fees are calculated based on average publication fee for PLoS (Public Library of Science) journals: 2 publications x \$2,250 per publication = \$4,500.

Computer Services

We request \$160 each year to cover an annual cost for domain name and security certificates. We request \$840 each year to cover the cost of Google Apps Services and data hosting. Cloud Application expenses (google apps with unlimited storage) are calculated as follows: \$10 per user, per month X 12 months X 7 users = \$840.

Subawards/Consortium/Contractual Costs

We request contractual support for two organizations: the International Society for Disease Surveillance and Clango at \$25,000 each/year for Year 1, Year 2 and Year 3.

Master of Science / Master of Arts Student Tuition

We request funding for tuition for two research students pursuing a related master's degree at an accredited university. Tuition expenses are calculated *per student* as follows: \$1608 per credit X 12 credits each year = \$19,296.

Meeting Costs

We request \$500 each year for meeting costs. This funding will support two all-day meetings with the partners at the EcoHealth Alliance office in NY. It covers printing, copying, additional support for meeting materials, conference lines, and other supplies to enhance partner collaboration.

Recruiting

We request recruiting funds for the Year 1 to hire additional software development help as necessary. Recruiting expenses are calculated as follows: 2 job listings x \$350 per 30-day listing = \$700.

H. Indirect Costs

We request the EcoHealth Alliance federally approved indirect cost rate of 44.1% on all applicable direct costs. Indirect is taken only on the first \$25,000 for each consortium/contractual agreement in each year. As there are two (one to International Society for Disease Surveillance and the other to Clango), a total of \$50,000 ($\$25,000 \times 2$) is requested as indirect costs on consortium/contractual/subaward agreements. This is not included as part of direct cost calculations.