

ECOHEALTH ALLIANCE BUDGET JUSTIFICATION

A. Senior/Key personnel:

The PD/PI, Dr. Peter Daszak, will commit (b) (4), (b) (6) per year in each year of this budget. He will be primarily responsible for overseeing the project, general management, communication and collaboration with subaward partners, as well as contributing to data analysis and manuscript writing.

Co-Investigator, Dr. Kevin Olival, will commit (b) (4), (b) (6) per year in each year of this budget. Dr. Olival will lead the design and implementation of the bat sampling fieldwork (Aim 1); facilitate overall project management; and train and oversee field teams. Dr. Olival will also oversee modeling and analyses under Aims 1 & 3, participate in regular conference calls, and help write manuscripts and reports.

Co-Investigator, Dr. Leilani Francisco, will commit (b) (4), (b) (6) per year in each year of this budget. Dr. Francisco will lead the implementation of the community and clinic-based surveillance (Aim 2), including adherence to study design, sampling methodology, and ethics in human subjects research; data collection instrument development; data management, cleaning, and analysis; and, findings dissemination.

Co-Investigator, Dr. Noam Ross, will commit (b) (4), (b) (6) per year in each year of this budget. Dr. Ross will lead modeling work and assist in with data analyses and manuscript writing. He will also advise on data management, statistical approaches, and computational work.

B. Other Personnel

Research Scientist, Ms. Hongying Li, will commit (b) (4), (b) (6) per year in each year of this budget. Ms. Li will coordinate the field and laboratory activities in China, maintaining the financial administration, results reporting, and data management, as well as work closely with Dr. Lili Ren at the Institute of Pathogen Biology to refine protocols, oversee field data collection, and perform data analysis for human study.

Research Scientist, Dr. Alice Latinne, will commit (b) (4), (b) (6) per year in each year of this budget. Dr. Latinne will assist in with phylogenetic and phylogeographic analyses and manuscript writing. She will also advise on data management and field activities.

Research Scientist, Dr. Aleksei Chmura, will commit (b) (4), (b) (6) per year in each year of this budget. Dr. Chmura will coordinate regular calls, reports, maintain EcoHealth Alliance and subaward budgets and both project and financial reporting, draft subcontracts, and set-up project databases, advise field activities, assist with statistical analysis, and manuscript writing.

Research Scientist, Ms. Emily Hagan, will commit (b) (4), (b) (6) per year in each year of this budget. Ms. Hagan will assist with the development of human data collection instruments, testing, and implementation; advise on data storage, data analyses, and manuscript writing. She will also provide training for field teams conducting human subjects research.

Fringe benefits for Year 1 are calculated for EcoHealth Alliance's federally approved rate of 31.5% of base salary and is included in all subsequent years.

C. Equipment

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

D. Travel

Domestic Travel

\$9,440 is requested annually for Years 1 through 5 for the PD/PI, 3 Co-Investigators, and 1 Research Scientist to attend and present on research results at the annual American Society for Tropical Medicine and Hygiene and the American Public Health Association meetings. 2 night and 3 day travel to Washington, DC is

calculated as follows: \$205 for hotels ($\$251 \times 2 \text{ nights} \times 5 \text{ people} \times 2 \text{ trips} = \$5,020$); \$76 for meals and incidentals ($\$76 \times 2.5 \text{ days} \times 5 \text{ people} \times 2 \text{ trips} = \$1,900$); and \$252 for round-trip train ($\$252 \times 5 \times 2 = \$2,520$).

International Travel

\$11,998 is requested annually in Years 1 to 5. This will support round-trip flights from New York to Beijing and Wuhan for the field annual meetings for 3 Senior/Key Personnel and 1 for the PD/PI (Daszak) at \$1,055 each. Five nights and six days of hotels, meals, and incidentals for 3 Senior/Key Personnel and 1 PD/PI are calculated at \$1,944.50 per year: hotels at \$258 per night ($\times 5 \text{ nights and } 4 \text{ personnel} = \$5,160$) and meals and incidentals at \$119 per day ($\times 5.5 \text{ days and } 4 \text{ personnel} = \$2,856$).

\$17,960 is requested annually in Years 1 to 5 for EHA Research Scientists (Ms. Li and Ms. Hagan) who will travel to China for two field training and supervising visits per year for duration of 21 days each. Support for this request, annually, is \$17,960 and is calculated as follows: 2 round trip flights = \$4,400; hotel $\$258 \times 20 \text{ nights} \times \text{twice a year} = \$4,732$; meals and incidentals at \$119 per day $\times 20.5 \text{ days} \times \text{twice a year} = \$3,570$

E. Participant/Trainee Support Costs

There are no participant/trainee support costs.

F. Other Direct Costs

Materials & Supplies

We request \$7,000 in Year 1 for sample collection materials to be shipped to China including bat catching equipment (\$1,000); PPE (\$2,000); and 1 liquid nitrogen dry shipper (\$1,000) for Wuhan Institute of Virology in China to be used by Dr. Guanjian Zhu for field work.

In Years 2 through 5, field and human sampling will be completely underway; we request support for PPE (\$2,000) and other sample collection materials (\$2,000) in each of these years.

Publication Costs

We request \$6,000 per year for only Years 2 to 5 for publication fees required to publish research findings in peer-reviewed journals such as *Nature*, *Public Library of Science*, and other journals

Subawards/Consortium/Contractual Costs

We are requesting consortium/contractual support for our three partners: Wuhan Institute of Virology (WIV), Institute of Pathogen Biology (IPB), and University of North Carolina (UNC). We have fully detailed these direct and indirect costs in their respective sub-award budgets.

Computers, Software, Reference Materials and Dataset Acquisition

We request support of \$6,000 to permit two Research Scientists to purchase 1 laptop each ($2 \times \$3,000$ including insurance and software). We also request \$1,000 per year in each year to cover software and reference materials, and an additional \$1,000 per year in each year for acquisition of datasets.

Shipping

We will be shipping the materials and supplies detailed above to our subaward institutions in China (IPB and WIV). Shipping box and all taxes are estimated at \$1,667 per shipment. We estimate 3 shipments of supplies and materials will be sent every year through the duration of this project.

Consultants

Dr. Linfa Wang, Co-Investigator/Consultant We request (b) (4), (b) (6) per year for each year of the project for a consultancy for Dr. Linfa Wang who will focus on PCR development, serological testing strategy and virus characterization, and will also participate in regular meetings with collaborators. Dr. Wang has more than 20 years of research experience in designing and applying novel testing platforms to discover zoonotic pathogens.

Dr. Guangjian Zhu, Co-Investigator/Consultant In total, we request \$368,000 for the consultancy of Dr. Guangjian Zhu from Year 1 to Year 5 of the project including: \$204,390 for field personnel, \$124,750 for field travel; \$33,548 for field supplies and materials, and \$5,255 for other costs. Detailed expenses are calculated as the follows:

Personnel (\$204,390)

Dr. Guangjian Zhu Co-Investigator/Consultant will oversee all field sampling activities in China by coordinating with local partners and stakeholders to lead the specimen collection and bats population monitoring at selected surveillance sites. Dr. Zhu is a zoologist and ecologist specializing in bats surveillance in southern and western China and has been leading EcoHealth Alliance's field surveillance work in China for more than 15 years. We request (b) (4), (b) (6) annual stipend for Zhu, who will commit (b) (4), (b) (6) per year to this project in years 1-3 and increase time to (b) (4), (b) (6) per year for in years 4-5, since he will allocate more time to collaborating on peer-reviewed publications in the last two years of the project.

Research Assistant (TBD) will assist the Co-PI and Field Coordinator (Zhu) for project data management, reporting, and administration. We request (b) (4), (b) (6) p.a. salary for this Research Assistant who will dedicate 2 months p.a. on this project from Years 1-5.

Field Assistants (2 in each province, TBD) will assist all field surveillance activities including specimen collection and data entry and management. The assistants will commit a total of 50 days per year to this project from years 1-5. We request (b) (4), (b) (6) per year to support each assistant for the field surveillance work.

Travel (\$124,750)

Inter-Province Travel. We request 1) \$1,200 per year for all five years of this project to cover 3-per-year round-trip flights/trains each from Shanghai, to Yunnan, Guangdong, Guizhou, and Guangxi for Dr. Zhu to meet with collaborating institutions, train field teams, and ensure sample collection, storage, and shipments. Each round-trip flight is estimated at \$400, in total \$6,000 for 5 years; 2) \$2,400 per year for all five years of this project to cover 2-per-year round-trip flights/trains for 2 field assists traveling to the field sites in Yunnan, Guangdong, Guizhou, and Guangxi for sampling work. Each round-trip flight is estimated at \$400, in total \$12,000 for 5 years.

Field Transportation. Field work will take place for 50 days per year for 5 years, the expenses of local transportation include 1) car rental at the rate of \$79/car/day, with 1 car for 50 days, in total of \$3,950 per year, and \$19,750 for 5 years; 2) Gas and toll fee at the rate of \$32/car/day, with 1 car for 50 days, in total of \$1,600 per year, and \$8,000 for 5 years.

Meal and Lodging. We request 1) \$6,400 to cover the expense of meals for 4 field team members in the field for 50 days per year, at the rate of \$32/person/day, totaling \$32,000 in 5 years; 2) \$9,400 for lodging expenses of 4 field team members in the field for 50 days at the rate of \$47/person/night, totaling \$247,000 in 5 years.

Supplies and Materials (\$33,548)

Biological sampling supplies (\$25,165) We request \$25,165 to purchase supplies for biological sampling during the 5 years of the project, including 1) puritan calcium alginate swabs \$8,800 (5,000 IND); 2) viral sample collection tubes \$6,875 (15,000 IND); 3) heparinized glass hematocrit tubes \$190 (~4,000IND); 4) mist nets for bats trapping \$2,200 (~500IND); 5) cloth bags for bats trapping \$2,400 (~1,000IND); 6) Viral Transport Media \$4,700 (~7,000 mL).

Personal Protection Equipment (\$4,336): We request 1) \$3,440 for 3M N95 respirators (~1,600IND) for field work across Year 1-5; 2) \$470 for eye protection glasses (~100 IND) for

the use in field across Year 1-5; 3) \$426 for nitrile gloves (~3,000IND) for sampling work for Year 1-5.

Cold Chain Maintenance (\$4,047): We request \$4,047 to purchase 3 liquid nitrogen dry shippers for preserve biological samples in the field before transported an ultra-low temperature freezer. The expense is calculated at the rate of \$1,349 each, with 1 purchased per year from Year 1-3, totaling \$4,047.

Equipment (\$0)

No equipment over \$5,000 will be purchased.

Other Costs (\$6,399)

We request 1) a total of \$1,275 for specimen transportation or delivery from the field to partners' labs from Year 1-5, at the rate of \$85/delivery with 1,000 tubes, with three times per year; and 2) a total of \$3,980 for rabies and tetanus vaccination 4 field team members from Year 1-5, at the rate of \$199/year/person.

H. Indirect Costs

We are requesting the EcoHealth Alliance federally approved indirect cost rate of 32.74% 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 3 (Wuhan Institute of Virology, Institute of Pathogen Biology, and University of North Carolina), a total of \$24,555 (\$8,185 x 3) is requested as indirect costs on consortium/contractual/subaward agreements. This is not included as part of direct cost calculations and is only requested for year 1. In years 2-5 no indirect will be taken on consortium/contractual agreement subcontracts.