

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

| NAME Zhang, Yun-Zhi | POSITION TITLE Chief Physician, Professor | | |
|--|--|-------|------------------|
| eRA COMMONS USER NAME (credential, e.g., agency login) | | | |
| EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)</i> | | | |
| INSTITUTION AND LOCATION | DEGREE <i>(if applicable)</i> | MM/YY | FIELD OF STUDY |
| School of Life Sciences, Yunnan University | B.S. | 1990 | Endemic Diseases |
| Kunming Medical University | M.D. | 2005 | Medicine |
| Wuhan Institute of Virology, Chinese Academy of Sciences | PhD | 2010 | Virology |

A. Personal Statement My career in public health is focused on virology and surveillance for zoonotic infections, including hantaviruses, henipaviruses and coronaviruses. As head of infectious disease surveillance at Yunnan CDC, I am particularly interested in the risk of new pathogens emerging through the wildlife trade, which Yunnan is on the front line of in China. Through collaborative research with Wuhan Institute of Virology (Zhengli Shi) and EcoHealth Alliance (Peter Daszak, Jon Epstein and Kevin Olival), we have conducted specific surveillance in bats, rodents and primates in Yunnan Province, and on the border with Myanmar, Laos and Vietnam. This has led to our discovery of numerous CoVs in mammals, including bats, and including the recent finding of a bat SL-CoV that uses ACE2. Given my collaboration with this group, and our capacity to do extensive surveillance of wildlife and people in Yunnan, I believe that this project will generate substantial results and help us understand the risk of CoV emergence from wildlife much better in the future.

B. Positions and Honors

Positions and Employment

| | |
|--------------|---|
| 2003-6 | Deputy chief physician, Public Health Branch of the Chinese Medical Association Youth Committee |
| 2006-9 | Head of infectious disease surveillance, Yunnan Center for Disease Control, Peoples' Republic of China. |
| 2009-Present | Head of Infectious disease surveillance, Yunnan Institute of Endemic Disease Control and Prevention, Peoples' Republic of China |

Other Experience and Professional Memberships

| | |
|-----------|---|
| 2002-2004 | Participant, international Field Epidemiology Training Program (FETP) |
|-----------|---|

C. Selected Peer-reviewed Publications

Most relevant to the current application

1. Li, Y., Wang, J.M., Hickey, A.C., Zhang, Y.Z., Li, Y., Wu, Y., Zhang, H., Yuan, J., Han, Z.G., McEachern, J., Broder, C.C., Wang, L.F. & Shi, Z. (2008). Antibodies to Nipah or Nipah-like viruses in bats, China. *Emerging Infectious Diseases*, 14(12):1974-1976

2. Zhang, Y.Z., Zhang, H.L., Dong, X.Q., Yuan, J.F., Zhang, H.J., Yang, X.L., Zhou, P., Ge, X.Y., Li, Y., Wang, L.F., Shi, Z.L. (2010). Hantavirus outbreak associated with laboratory rats in Yunnan, China. *Infection, Genetics and Evolution*, 10(5):638-644
3. Li, Y., Ge, X., Zhang, H., Zhou, P., Zhu, Y., Zhang, Y.Z., Yuan, J., Wang, L.F. & Zhengli, S. (2010). Host range, prevalence, and genetic diversity of adenoviruses in bats. *Journal of Virology*, 84(8):3889-3897
4. Li, Y., Ge, X., Hon, C.C., Zhang, H., Zhou, P., Zhang, Y.Z., Wu, Y., Wang, L.F. & Shi, Z. (2010). Prevalence and genetic diversity of adeno-associated viruses in bats, China. *Journal of General Virology*, 91(10):2601-2609
5. Zhang, Y.Z., Yuan, J., Yang, X., Zhou, J., Yang, W., Peng, C., Zhang, H.L., Shi, Z. (2011). Novel Hantavirus detected in Yunnan Red-backed Vole *Eothenomys miletus*, China. *Journal of General Virology*, 92(3):1454-1457.

Additional recent publications of importance to the field (in chronological order)

1. Yuan, J.F., Zhang, Y.J., Li, J.L., Zhang, Y.Z., Wang, L.F., Shi, Z.L. (2012). Serological evidence of ebolavirus infection in bats, China. *Virology Journal*, 9: 236; doi: 10.1186/1743-422X-9-236
2. Yang, X.L., Zhang, Y.Z., Ge, X.Y., Yuan, J.F., Shi, Z.L. (2012). A novel totivirus-like virus isolated from bat guano. *Archives of Virology*, 157 (6), 1093-1099 , doi: 10.1007/s00705-012-1278-y
3. Ge, X.Y., Li, Y., Yang, XL, Zhang, H.J., Zhou, P., Zhang, Y.Z., Shi, Z.L. (2012). Metagenomic Analysis of Viruses from Bat Fecal Samples Reveals Many Novel Viruses in Insectivorous Bats in China. *Journal of Virology*. 86(8). 4620-4630, doi. 10.1128/JVI.06671-11

D. Research Support

Ongoing Research Support

Ministry of Science 01/01/2013- 12/01/2017
Yunnan region is an important natural reservoir of the virus and the insect vector, pathogen survey

Grant No.: 81260437 01/01/2013 -12/01/2016
National Natural Science Foundation of China
Yunnan murine viral metagenome important viral epidemic status and related research

(b) (4) 11/01/ 2012- 11/01/2015

Grant No.: (b) (4) 09/01/2011 -12/01/2014
Yunnan Talented young technology leaders

Completed Research Support

Grant No.: 81060132 01/01/2011-12/01/2013
National Natural Science Foundation of China,
Yunnan novel hantavirus distribution, pathogenicity and receptor research

Grant number: (b) (4) 01/01/2011-12/01/2013
Yunnan applied basic research projects

* ORGANIZATIONAL DUNS:

* Budget Type: Project Subaward/Consortium

Enter name of Organization:

Delete Entry * Start Date: * End Date: Budget Period 1

A. Senior/Key Person

| | Prefix | * First Name | Middle Name | * Last Name | Suffix | * Project Role | Base Salary (\$) | Cal. Months | Acad. Months | Sum. Months | * Requested Salary (\$) | * Fringe Benefits (\$) | * Funds Requested (\$) |
|--|--------|--------------|-------------|-------------|--------|---------------------|------------------|-------------|--------------|-------------|-------------------------|------------------------|------------------------|
| 1. | Dr. | Peter | | Daszak | | PD/PI | | | | | | | (b) (4), (b) (6) |
| 2. | Dr. | Jonathan | H. | Epstein | | Senior/Key Personne | | | | | | | |
| 3. | Dr. | Kevin | J. | Olival | | Senior/Key Personne | | | | | | | |
| 4. | Dr. | Parvievz | R. | Hosseini | | Senior/Key Personne | | | | | | | |
| 5. | | | | | | | | | | | | | |
| 6. | | | | | | | | | | | | | |
| 7. | | | | | | | | | | | | | |
| 8. | | | | | | | | | | | | | |
| 9. Total Funds requested for all Senior Key Persons in the attached file | | | | | | | | | | | | | |
| Total Senior/Key Person | | | | | | | | | | | | | 99,498.00 |

Additional Senior Key Persons:

Add Attachment

Detach Attachment

View Attachment

B. Other Personnel

| * Number of Personnel | * Project Role | Cal. Months | Acad. Months | Sum. Months | * Requested Salary (\$) | * Fringe Benefits (\$) | * Funds Requested (\$) |
|--|-------------------------------------|-------------|--------------|-------------|-------------------------|------------------------|------------------------|
| <input type="text"/> | Post Doctoral Associates | | | | | | |
| <input type="text"/> | Graduate Students | | | | | | |
| <input type="text"/> | Undergraduate Students | | | | | | |
| <input type="text"/> | Secretarial/Clerical | | | | | | |
| 1 | Research Scientist (tbd) | | | | | | (b) (4), (b) (6) |
| 1 | Program Coordinator | | | | | | |
| <input type="text"/> | | | | | | | |
| <input type="text"/> | | | | | | | |
| <input type="text"/> | | | | | | | |
| <input type="text"/> | | | | | | | |
| <input type="text"/> | | | | | | | |
| 2 | Total Number Other Personnel | | | | | | |
| Total Other Personnel | | | | | | | 122,378.00 |
| Total Salary, Wages and Fringe Benefits (A+B) | | | | | | | 221,876.00 |

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 1* ORGANIZATIONAL DUNS: * Budget Type: Project Subaward/ConsortiumEnter name of Organization: * Start Date: * End Date: Budget Period 1**C. Equipment Description**

List items and dollar amount for each item exceeding \$5,000

| | Equipment item | * Funds Requested (\$) |
|-----|--|------------------------|
| 1. | <input type="text"/> | <input type="text"/> |
| 2. | <input type="text"/> | <input type="text"/> |
| 3. | <input type="text"/> | <input type="text"/> |
| 4. | <input type="text"/> | <input type="text"/> |
| 5. | <input type="text"/> | <input type="text"/> |
| 6. | <input type="text"/> | <input type="text"/> |
| 7. | <input type="text"/> | <input type="text"/> |
| 8. | <input type="text"/> | <input type="text"/> |
| 9. | <input type="text"/> | <input type="text"/> |
| 10. | <input type="text"/> | <input type="text"/> |
| 11. | Total funds requested for all equipment listed in the attached file | <input type="text"/> |
| | Total Equipment | <input type="text"/> |

Additional Equipment: **D. Travel****Funds Requested (\$)**

| | |
|---|--|
| 1. Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions) | <input type="text" value="3,605.00"/> |
| 2. Foreign Travel Costs | <input type="text" value="32,313.00"/> |
| Total Travel Cost | <input type="text" value="35,918.00"/> |

E. Participant/Trainee Support Costs**Funds Requested (\$)**

| | |
|---|----------------------|
| 1. Tuition/Fees/Health Insurance | <input type="text"/> |
| 2. Stipends | <input type="text"/> |
| 3. Travel | <input type="text"/> |
| 4. Subsistence | <input type="text"/> |
| 5. Other <input type="text"/> | <input type="text"/> |
| <input type="text"/> Number of Participants/Trainees | <input type="text"/> |
| Total Participant/Trainee Support Costs | <input type="text"/> |

RESEARCH & RELATED Budget (C-E) (Funds Requested)

RESEARCH & RELATED BUDGET - SECTION F-K, BUDGET PERIOD 1

Next Period

* ORGANIZATIONAL DUNS: * Budget Type: Project Subaward/ConsortiumEnter name of Organization:

Delete Entry

Start Date: * End Date: Budget Period

F. Other Direct Costs

Funds Requested (\$)

| | |
|---|---|
| 1. Materials and Supplies | <input type="text" value="21,400.00"/> |
| 2. Publication Costs | <input type="text"/> |
| 3. Consultant Services | <input type="text"/> |
| 4. ADP/Computer Services | <input type="text"/> |
| 5. Subawards/Consortium/Contractual Costs | <input type="text" value="227,663.00"/> |
| 6. Equipment or Facility Rental/User Fees | <input type="text"/> |
| 7. Alterations and Renovations | <input type="text"/> |
| 8. <input type="text" value="Shipping & Communications"/> | <input type="text" value="10,000.00"/> |
| 9. <input type="text"/> | <input type="text"/> |
| 10. <input type="text"/> | <input type="text"/> |

Total Other Direct Costs

G. Direct Costs

Funds Requested (\$)

Total Direct Costs (A thru F)

H. Indirect Costs

| | Indirect Cost Type | Indirect Cost Rate (%) | Indirect Cost Base (\$) | * Funds Requested (\$) |
|----|--|------------------------------------|---|---|
| 1. | <input type="text" value="EcoHealth Alliance F&A Rate"/> | <input type="text" value="44.10"/> | <input type="text" value="289,195.00"/> | <input type="text" value="127,535.00"/> |
| 2. | <input type="text" value="EcoHealth Alliance F&A on 2 Subawar"/> | <input type="text" value="44.10"/> | <input type="text" value="50,000.00"/> | <input type="text" value="22,050.00"/> |
| 3. | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 4. | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |

Total Indirect Costs Cognizant Federal Agency

(Agency Name, POC Name, and POC Phone Number)

I. Total Direct and Indirect Costs

Funds Requested (\$)

Total Direct and Indirect Institutional Costs (G + H)

J. Fee

Funds Requested (\$)

K. * Budget Justification

Add Attachment

Delete Attachment

View Attachment

(Only attach one file.)

Previous Period

RESEARCH & RELATED BUDGET - SECTION A & B, BUDGET PERIOD 2

* ORGANIZATIONAL DUNS:

* Budget Type: Project Subaward/Consortium

Enter name of Organization:

Delete Entry * Start Date: * End Date: Budget Period 2

A. Senior/Key Person

| | Prefix | * First Name | Middle Name | * Last Name | Suffix | * Project Role | Base Salary (\$) | Cal. Months | Acad. Months | Sum. Months | * Requested Salary (\$) | * Fringe Benefits (\$) | * Funds Requested (\$) |
|--|--------|--------------|-------------|-------------|--------|---------------------|------------------|-------------|--------------|-------------|-------------------------|------------------------|------------------------|
| 1. | Dr. | Peter | | Daszak | | PD/PI | | | | | | | (b) (4), (b) (6) |
| 2. | Dr. | Jonathan | H. | Epstein | | Senior/Key Personne | | | | | | | |
| 3. | Dr. | Kevin | J. | Olival | | Senior/Key Personne | | | | | | | |
| 4. | Dr. | Parvievz | R. | Hosseini | | Senior/Key Personne | | | | | | | |
| 5. | | | | | | | | | | | | | |
| 6. | | | | | | | | | | | | | |
| 7. | | | | | | | | | | | | | |
| 8. | | | | | | | | | | | | | |
| 9. Total Funds requested for all Senior Key Persons in the attached file | | | | | | | | | | | | | |
| Total Senior/Key Person | | | | | | | | | | | | | 105,265.00 |

Additional Senior Key Persons:

Add Attachment

Detach Attachment

View Attachment

B. Other Personnel

| * Number of Personnel | * Project Role | Cal. Months | Acad. Months | Sum. Months | * Requested Salary (\$) | * Fringe Benefits (\$) | * Funds Requested (\$) |
|--|-------------------------------------|-------------|--------------|-------------|-------------------------|------------------------|------------------------|
| <input type="text"/> | Post Doctoral Associates | | | | | | |
| <input type="text"/> | Graduate Students | | | | | | |
| <input type="text"/> | Undergraduate Students | | | | | | |
| <input type="text"/> | Secretarial/Clerical | | | | | | |
| 1 | Research Scientist | | | | | | (b) (4), (b) (6) |
| 1 | Program Coordinator | | | | | | |
| <input type="text"/> | | | | | | | |
| <input type="text"/> | | | | | | | |
| <input type="text"/> | | | | | | | |
| <input type="text"/> | | | | | | | |
| <input type="text"/> | | | | | | | |
| 2 | Total Number Other Personnel | | | | | | |
| Total Other Personnel | | | | | | | 129,468.00 |
| Total Salary, Wages and Fringe Benefits (A+B) | | | | | | | 234,733.00 |

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 2* ORGANIZATIONAL DUNS: * Budget Type: Project Subaward/ConsortiumEnter name of Organization: Delete Entry * Start Date: * End Date: Budget Period 2**C. Equipment Description**

List items and dollar amount for each item exceeding \$5,000

| | Equipment item | * Funds Requested (\$) |
|-----|--|------------------------|
| 1. | <input type="text"/> | <input type="text"/> |
| 2. | <input type="text"/> | <input type="text"/> |
| 3. | <input type="text"/> | <input type="text"/> |
| 4. | <input type="text"/> | <input type="text"/> |
| 5. | <input type="text"/> | <input type="text"/> |
| 6. | <input type="text"/> | <input type="text"/> |
| 7. | <input type="text"/> | <input type="text"/> |
| 8. | <input type="text"/> | <input type="text"/> |
| 9. | <input type="text"/> | <input type="text"/> |
| 10. | <input type="text"/> | <input type="text"/> |
| 11. | Total funds requested for all equipment listed in the attached file | <input type="text"/> |
| | Total Equipment | <input type="text"/> |

Additional Equipment: **D. Travel****Funds Requested (\$)**

| | | |
|----|--|--|
| 1. | Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions) | <input type="text" value="3,605.00"/> |
| 2. | Foreign Travel Costs | <input type="text" value="32,313.00"/> |
| | Total Travel Cost | <input type="text" value="35,918.00"/> |

E. Participant/Trainee Support Costs**Funds Requested (\$)**

| | | |
|----------------------|--|----------------------|
| 1. | Tuition/Fees/Health Insurance | <input type="text"/> |
| 2. | Stipends | <input type="text"/> |
| 3. | Travel | <input type="text"/> |
| 4. | Subsistence | <input type="text"/> |
| 5. | Other <input type="text"/> | <input type="text"/> |
| <input type="text"/> | Number of Participants/Trainees | <input type="text"/> |
| | Total Participant/Trainee Support Costs | <input type="text"/> |

RESEARCH & RELATED Budget (C-E) (Funds Requested)

RESEARCH & RELATED BUDGET - SECTION F-K, BUDGET PERIOD 2

Next Period

* ORGANIZATIONAL DUNS: * Budget Type: Project Subaward/ConsortiumEnter name of Organization:

Delete Entry

Start Date: * End Date: Budget Period 2**F. Other Direct Costs****Funds Requested (\$)**

| | |
|---|---|
| 1. Materials and Supplies | <input type="text" value="19,250.00"/> |
| 2. Publication Costs | <input type="text" value="2,600.00"/> |
| 3. Consultant Services | <input type="text"/> |
| 4. ADP/Computer Services | <input type="text"/> |
| 5. Subawards/Consortium/Contractual Costs | <input type="text" value="211,699.00"/> |
| 6. Equipment or Facility Rental/User Fees | <input type="text"/> |
| 7. Alterations and Renovations | <input type="text"/> |
| 8. <input type="text" value="Shipping and Communications"/> | <input type="text" value="10,000.00"/> |
| 9. <input type="text" value="Local Reimbursement"/> | <input type="text" value="950.00"/> |
| 10. <input type="text"/> | <input type="text"/> |
| Total Other Direct Costs | <input type="text" value="244,499.00"/> |

G. Direct Costs**Funds Requested (\$)****Total Direct Costs (A thru F)** **H. Indirect Costs**

| | Indirect Cost Type | Indirect Cost Rate (%) | Indirect Cost Base (\$) | * Funds Requested (\$) |
|-----------------------------|--|------------------------------------|---|---|
| 1. | <input type="text" value="EcoHealth Alliance F&A"/> | <input type="text" value="44.10"/> | <input type="text" value="303,450.00"/> | <input type="text" value="133,822.00"/> |
| 2. | <input type="text" value="EcoHealth Alliance F&A on 2 Subawar"/> | <input type="text" value="44.10"/> | <input type="text" value="50,000.00"/> | <input type="text" value="22,050.00"/> |
| 3. | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 4. | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| Total Indirect Costs | | | | <input type="text" value="155,872.00"/> |

Cognizant Federal Agency

(Agency Name, POC Name, and POC Phone Number)

I. Total Direct and Indirect Costs**Funds Requested (\$)****Total Direct and Indirect Institutional Costs (G + H)** **J. Fee****Funds Requested (\$)****K. * Budget Justification**

Add Attachment

Delete Attachment

View Attachment

(Only attach one file.)

Previous Period

RESEARCH & RELATED BUDGET - SECTION A & B, BUDGET PERIOD 3

* ORGANIZATIONAL DUNS:

* Budget Type: Project Subaward/Consortium

Enter name of Organization:

Delete Entry * Start Date: * End Date: Budget Period 3

A. Senior/Key Person

| | Prefix | * First Name | Middle Name | * Last Name | Suffix | * Project Role | Base Salary (\$) | Cal. Months | Acad. Months | Sum. Months | * Requested Salary (\$) | * Fringe Benefits (\$) | * Funds Requested (\$) |
|--|--------|--------------|-------------|-------------|--------|---------------------|------------------|-------------|--------------|-------------|-------------------------|------------------------|------------------------|
| 1. | Dr. | Peter | | Daszak | | PD/PI | | | | | | | (b) (4), (b) (6) |
| 2. | Dr. | Jonathan | H. | Epstein | | Senior/Key Personne | | | | | | | |
| 3. | Dr. | Kevin | J. | Olival | | Senior/Key Personne | | | | | | | |
| 4. | Dr. | Parvievz | R. | Hosseini | | Senior/Key Personne | | | | | | | |
| 5. | | | | | | | | | | | | | |
| 6. | | | | | | | | | | | | | |
| 7. | | | | | | | | | | | | | |
| 8. | | | | | | | | | | | | | |
| 9. Total Funds requested for all Senior Key Persons in the attached file | | | | | | | | | | | | | |
| Total Senior/Key Person | | | | | | | | | | | | | 111,357.00 |

Additional Senior Key Persons:

Add Attachment

Detach Attachment

View Attachment

B. Other Personnel

| * Number of Personnel | * Project Role | Cal. Months | Acad. Months | Sum. Months | * Requested Salary (\$) | * Fringe Benefits (\$) | * Funds Requested (\$) |
|--|-------------------------------------|-------------|--------------|-------------|-------------------------|------------------------|------------------------|
| <input type="text"/> | Post Doctoral Associates | | | | | | |
| <input type="text"/> | Graduate Students | | | | | | |
| <input type="text"/> | Undergraduate Students | | | | | | |
| <input type="text"/> | Secretarial/Clerical | | | | | | |
| 1 | Research Scientist | | | | | | (b) (4), (b) (6) |
| 1 | Program Coordinator | | | | | | |
| <input type="text"/> | | | | | | | |
| <input type="text"/> | | | | | | | |
| <input type="text"/> | | | | | | | |
| <input type="text"/> | | | | | | | |
| <input type="text"/> | | | | | | | |
| 2 | Total Number Other Personnel | | | | | | |
| Total Other Personnel | | | | | | | 136,961.00 |
| Total Salary, Wages and Fringe Benefits (A+B) | | | | | | | 248,318.00 |

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 3* ORGANIZATIONAL DUNS: * Budget Type: Project Subaward/ConsortiumEnter name of Organization: Delete Entry * Start Date: * End Date: Budget Period 3**C. Equipment Description**

List items and dollar amount for each item exceeding \$5,000

| | Equipment item | * Funds Requested (\$) |
|-----|--|------------------------|
| 1. | <input type="text"/> | <input type="text"/> |
| 2. | <input type="text"/> | <input type="text"/> |
| 3. | <input type="text"/> | <input type="text"/> |
| 4. | <input type="text"/> | <input type="text"/> |
| 5. | <input type="text"/> | <input type="text"/> |
| 6. | <input type="text"/> | <input type="text"/> |
| 7. | <input type="text"/> | <input type="text"/> |
| 8. | <input type="text"/> | <input type="text"/> |
| 9. | <input type="text"/> | <input type="text"/> |
| 10. | <input type="text"/> | <input type="text"/> |
| 11. | Total funds requested for all equipment listed in the attached file | <input type="text"/> |
| | Total Equipment | <input type="text"/> |

Additional Equipment:

Add Attachment

Delete Attachment

View Attachment

D. Travel**Funds Requested (\$)**

| | |
|---|--|
| 1. Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions) | <input type="text" value="3,605.00"/> |
| 2. Foreign Travel Costs | <input type="text" value="32,313.00"/> |
| Total Travel Cost | <input type="text" value="35,918.00"/> |

E. Participant/Trainee Support Costs**Funds Requested (\$)**

| | |
|---|----------------------|
| 1. Tuition/Fees/Health Insurance | <input type="text"/> |
| 2. Stipends | <input type="text"/> |
| 3. Travel | <input type="text"/> |
| 4. Subsistence | <input type="text"/> |
| 5. Other <input type="text"/> | <input type="text"/> |
| <input type="text"/> Number of Participants/Trainees | <input type="text"/> |
| Total Participant/Trainee Support Costs | <input type="text"/> |

RESEARCH & RELATED Budget (C-E) (Funds Requested)

RESEARCH & RELATED BUDGET - SECTION F-K, BUDGET PERIOD 3

Next Period

* ORGANIZATIONAL DUNS: * Budget Type: Project Subaward/ConsortiumEnter name of Organization:

Delete Entry

Start Date: * End Date:

Budget Period 3

F. Other Direct Costs

Funds Requested (\$)

| | |
|---|---|
| 1. Materials and Supplies | <input type="text" value="7,250.00"/> |
| 2. Publication Costs | <input type="text" value="2,600.00"/> |
| 3. Consultant Services | <input type="text"/> |
| 4. ADP/Computer Services | <input type="text"/> |
| 5. Subawards/Consortium/Contractual Costs | <input type="text" value="213,238.00"/> |
| 6. Equipment or Facility Rental/User Fees | <input type="text"/> |
| 7. Alterations and Renovations | <input type="text"/> |
| 8. <input type="text" value="Shipping and Communications"/> | <input type="text" value="7,500.00"/> |
| 9. <input type="text" value="Local Reimbursement"/> | <input type="text" value="950.00"/> |
| 10. <input type="text"/> | <input type="text"/> |

Total Other Direct Costs

G. Direct Costs

Funds Requested (\$)

Total Direct Costs (A thru F)

H. Indirect Costs

| | Indirect Cost Type | Indirect Cost Rate (%) | Indirect Cost Base (\$) | * Funds Requested (\$) |
|----|---|------------------------------------|---|---|
| 1. | <input type="text" value="EcoHealth Alliance F&A Rate"/> | <input type="text" value="44.10"/> | <input type="text" value="302,536.00"/> | <input type="text" value="133,418.00"/> |
| 2. | <input type="text" value="EcoHealth Alliance F&A Rate on 2 Sub"/> | <input type="text" value="44.10"/> | <input type="text" value="50,000.00"/> | <input type="text" value="22,050.00"/> |
| 3. | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 4. | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |

Total Indirect Costs Cognizant Federal Agency

(Agency Name, POC Name, and POC Phone Number)

I. Total Direct and Indirect Costs

Funds Requested (\$)

Total Direct and Indirect Institutional Costs (G + H)

J. Fee

Funds Requested (\$)

K. * Budget Justification

Add Attachment

Delete Attachment

View Attachment

(Only attach one file.)

Previous Period

RESEARCH & RELATED BUDGET - SECTION A & B, BUDGET PERIOD 4

* ORGANIZATIONAL DUNS:

* Budget Type: Project Subaward/Consortium

Enter name of Organization:

Delete Entry * Start Date: * End Date: Budget Period 4

A. Senior/Key Person

| | Prefix | * First Name | Middle Name | * Last Name | Suffix | * Project Role | Base Salary (\$) | Cal. Months | Acad. Months | Sum. Months | * Requested Salary (\$) | * Fringe Benefits (\$) | * Funds Requested (\$) |
|--|--------|--------------|-------------|-------------|--------|---------------------|------------------|-------------|--------------|-------------|-------------------------|------------------------|------------------------|
| 1. | Dr. | Peter | | Daszak | | PD/PI | | | | | | | (b) (4), (b) (6) |
| 2. | Dr. | Jonathan | H. | Epstein | | Senior/Key Personne | | | | | | | |
| 3. | Dr. | Kevin | J. | Olival | | Senior/Key Personne | | | | | | | |
| 4. | Dr. | Parvievz | R. | Hosseini | | Senior/Key Personne | | | | | | | |
| 5. | | | | | | | | | | | | | |
| 6. | | | | | | | | | | | | | |
| 7. | | | | | | | | | | | | | |
| 8. | | | | | | | | | | | | | |
| 9. Total Funds requested for all Senior Key Persons in the attached file | | | | | | | | | | | | | |
| Total Senior/Key Person | | | | | | | | | | | | | 116,925.00 |

Additional Senior Key Persons:

Add Attachment

Detach Attachment

View Attachment

B. Other Personnel

| * Number of Personnel | * Project Role | Cal. Months | Acad. Months | Sum. Months | * Requested Salary (\$) | * Fringe Benefits (\$) | * Funds Requested (\$) |
|--|-------------------------------------|-------------|--------------|-------------|-------------------------|------------------------|------------------------|
| <input type="text"/> | Post Doctoral Associates | | | | | | |
| <input type="text"/> | Graduate Students | | | | | | |
| <input type="text"/> | Undergraduate Students | | | | | | |
| <input type="text"/> | Secretarial/Clerical | | | | | | |
| 1 | Research Scientist | | | | | | (b) (4), (b) (6) |
| 1 | Program Coordinator | | | | | | |
| <input type="text"/> | | | | | | | |
| <input type="text"/> | | | | | | | |
| <input type="text"/> | | | | | | | |
| <input type="text"/> | | | | | | | |
| <input type="text"/> | | | | | | | |
| 2 | Total Number Other Personnel | | | | | | |
| Total Other Personnel | | | | | | | 143,808.00 |
| Total Salary, Wages and Fringe Benefits (A+B) | | | | | | | 260,733.00 |

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD* ORGANIZATIONAL DUNS: * Budget Type: Project Subaward/ConsortiumEnter name of Organization: * Start Date: * End Date: Budget Period 4**C. Equipment Description**

List items and dollar amount for each item exceeding \$5,000

| | Equipment item | * Funds Requested (\$) |
|-----|--|------------------------|
| 1. | <input type="text"/> | <input type="text"/> |
| 2. | <input type="text"/> | <input type="text"/> |
| 3. | <input type="text"/> | <input type="text"/> |
| 4. | <input type="text"/> | <input type="text"/> |
| 5. | <input type="text"/> | <input type="text"/> |
| 6. | <input type="text"/> | <input type="text"/> |
| 7. | <input type="text"/> | <input type="text"/> |
| 8. | <input type="text"/> | <input type="text"/> |
| 9. | <input type="text"/> | <input type="text"/> |
| 10. | <input type="text"/> | <input type="text"/> |
| 11. | Total funds requested for all equipment listed in the attached file | <input type="text"/> |
| | Total Equipment | <input type="text"/> |

Additional Equipment: **D. Travel****Funds Requested (\$)**

| | | |
|----|--|--|
| 1. | Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions) | <input type="text" value="3,605.00"/> |
| 2. | Foreign Travel Costs | <input type="text" value="32,313.00"/> |
| | Total Travel Cost | <input type="text" value="35,918.00"/> |

E. Participant/Trainee Support Costs**Funds Requested (\$)**

| | | |
|----------------------|--|----------------------|
| 1. | Tuition/Fees/Health Insurance | <input type="text"/> |
| 2. | Stipends | <input type="text"/> |
| 3. | Travel | <input type="text"/> |
| 4. | Subsistence | <input type="text"/> |
| 5. | Other <input type="text"/> | <input type="text"/> |
| <input type="text"/> | Number of Participants/Trainees | <input type="text"/> |
| | Total Participant/Trainee Support Costs | <input type="text"/> |

RESEARCH & RELATED Budget (C-E) (Funds Requested)

RESEARCH & RELATED BUDGET - SECTION F-K, BUDGET PERIOD 4

Next Period

* ORGANIZATIONAL DUNS: * Budget Type: Project Subaward/ConsortiumEnter name of Organization:

Delete Entry

Start Date: * End Date: Budget Period 4

F. Other Direct Costs

Funds Requested (\$)

| | |
|---|---|
| 1. Materials and Supplies | <input type="text" value="7,000.00"/> |
| 2. Publication Costs | <input type="text" value="2,600.00"/> |
| 3. Consultant Services | <input type="text"/> |
| 4. ADP/Computer Services | <input type="text"/> |
| 5. Subawards/Consortium/Contractual Costs | <input type="text" value="201,422.00"/> |
| 6. Equipment or Facility Rental/User Fees | <input type="text"/> |
| 7. Alterations and Renovations | <input type="text"/> |
| 8. <input type="text" value="Shipping & Communications"/> | <input type="text" value="5,250.00"/> |
| 9. <input type="text" value="Local Reimbursement"/> | <input type="text" value="950.00"/> |
| 10. <input type="text"/> | <input type="text"/> |
| Total Other Direct Costs | <input type="text" value="218,222.00"/> |

G. Direct Costs

Funds Requested (\$)

Total Direct Costs (A thru F)

H. Indirect Costs

| | Indirect Cost Type | Indirect Cost Rate (%) | Indirect Cost Base (\$) | * Funds Requested (\$) |
|-----------------------------|--|------------------------------------|---|---|
| 1. | <input type="text" value="EcoHealth Alliance F&A"/> | <input type="text" value="44.10"/> | <input type="text" value="313,452.00"/> | <input type="text" value="138,232.00"/> |
| 2. | <input type="text" value="EcoHealth Alliance F&A on 2 Subawar"/> | <input type="text" value="44.10"/> | <input type="text" value="50,000.00"/> | <input type="text" value="22,050.00"/> |
| 3. | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 4. | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| Total Indirect Costs | | | | <input type="text" value="160,282.00"/> |

Cognizant Federal Agency

(Agency Name, POC Name, and POC Phone Number)

I. Total Direct and Indirect Costs

Funds Requested (\$)

Total Direct and Indirect Institutional Costs (G + H)

J. Fee

Funds Requested (\$)

K. * Budget Justification

Add Attachment

Delete Attachment

View Attachment

(Only attach one file.)

Previous Period

RESEARCH & RELATED BUDGET - SECTION A & B, BUDGET PERIOD 5

* ORGANIZATIONAL DUNS:

* Budget Type: Project Subaward/Consortium

Enter name of Organization:

Delete Entry * Start Date: * End Date: Budget Period 5

A. Senior/Key Person

| | Prefix | * First Name | Middle Name | * Last Name | Suffix | * Project Role | Base Salary (\$) | Cal. Months | Acad. Months | Sum. Months | * Requested Salary (\$) | * Fringe Benefits (\$) | * Funds Requested (\$) |
|--|--------|--------------|-------------|-------------|--------|---------------------|------------------|-------------|--------------|-------------|-------------------------|------------------------|------------------------|
| 1. | Dr. | Peter | | Daszak | | PD/PI | | | | | | | (b) (4), (b) (6) |
| 2. | | Jonathan | H. | Epstein | | Senior/Key Personne | | | | | | | |
| 3. | | Kevin | J. | Olival | | Senior/Key Personne | | | | | | | |
| 4. | | Parvievz | R. | Hosseini | | Senior/Key Personne | | | | | | | |
| 5. | | | | | | | | | | | | | |
| 6. | | | | | | | | | | | | | |
| 7. | | | | | | | | | | | | | |
| 8. | | | | | | | | | | | | | |
| 9. Total Funds requested for all Senior Key Persons in the attached file | | | | | | | | | | | | | |
| Total Senior/Key Person | | | | | | | | | | | | | 122,772.00 |

Additional Senior Key Persons:

Add Attachment

Detach Attachment

View Attachment

B. Other Personnel

| * Number of Personnel | * Project Role | Cal. Months | Acad. Months | Sum. Months | * Requested Salary (\$) | * Fringe Benefits (\$) | * Funds Requested (\$) |
|--|-------------------------------------|-------------|--------------|-------------|-------------------------|------------------------|------------------------|
| <input type="text"/> | Post Doctoral Associates | | | | | | |
| <input type="text"/> | Graduate Students | | | | | | |
| <input type="text"/> | Undergraduate Students | | | | | | |
| <input type="text"/> | Secretarial/Clerical | | | | | | |
| 1 | Research Scientist | | | | | | (b) (4), (b) (6) |
| 1 | Program Coordinator | | | | | | |
| <input type="text"/> | | | | | | | |
| <input type="text"/> | | | | | | | |
| <input type="text"/> | | | | | | | |
| <input type="text"/> | | | | | | | |
| 2 | Total Number Other Personnel | | | | | | |
| Total Other Personnel | | | | | | | 150,999.00 |
| Total Salary, Wages and Fringe Benefits (A+B) | | | | | | | 273,771.00 |

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 5* ORGANIZATIONAL DUNS: * Budget Type: Project Subaward/ConsortiumEnter name of Organization: Delete Entry * Start Date: * End Date: Budget Period 5**C. Equipment Description**

List items and dollar amount for each item exceeding \$5,000

| | Equipment item | * Funds Requested (\$) |
|-----|--|------------------------|
| 1. | <input type="text"/> | <input type="text"/> |
| 2. | <input type="text"/> | <input type="text"/> |
| 3. | <input type="text"/> | <input type="text"/> |
| 4. | <input type="text"/> | <input type="text"/> |
| 5. | <input type="text"/> | <input type="text"/> |
| 6. | <input type="text"/> | <input type="text"/> |
| 7. | <input type="text"/> | <input type="text"/> |
| 8. | <input type="text"/> | <input type="text"/> |
| 9. | <input type="text"/> | <input type="text"/> |
| 10. | <input type="text"/> | <input type="text"/> |
| 11. | Total funds requested for all equipment listed in the attached file | <input type="text"/> |
| | Total Equipment | <input type="text"/> |

Additional Equipment: **D. Travel****Funds Requested (\$)**

| | |
|---|--|
| 1. Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions) | <input type="text" value="3,605.00"/> |
| 2. Foreign Travel Costs | <input type="text" value="32,313.00"/> |
| Total Travel Cost | <input type="text" value="35,918.00"/> |

E. Participant/Trainee Support Costs**Funds Requested (\$)**

| | |
|---|----------------------|
| 1. Tuition/Fees/Health Insurance | <input type="text"/> |
| 2. Stipends | <input type="text"/> |
| 3. Travel | <input type="text"/> |
| 4. Subsistence | <input type="text"/> |
| 5. Other <input type="text"/> | <input type="text"/> |
| <input type="text"/> Number of Participants/Trainees | <input type="text"/> |
| Total Participant/Trainee Support Costs | <input type="text"/> |

RESEARCH & RELATED Budget (C-E) (Funds Requested)

RESEARCH & RELATED BUDGET - SECTION F-K, BUDGET PERIOD 5* ORGANIZATIONAL DUNS: * Budget Type: Project Subaward/ConsortiumEnter name of Organization: Start Date: * End Date:

Budget Period 5

F. Other Direct Costs**Funds Requested (\$)**

| | |
|---|---|
| 1. Materials and Supplies | <input type="text" value="3,500.00"/> |
| 2. Publication Costs | <input type="text" value="2,600.00"/> |
| 3. Consultant Services | <input type="text"/> |
| 4. ADP/Computer Services | <input type="text"/> |
| 5. Subawards/Consortium/Contractual Costs | <input type="text" value="191,576.00"/> |
| 6. Equipment or Facility Rental/User Fees | <input type="text"/> |
| 7. Alterations and Renovations | <input type="text"/> |
| 8. <input type="text" value="Shipping & Communications"/> | <input type="text" value="8,250.00"/> |
| 9. <input type="text" value="Local Reimbursement"/> | <input type="text" value="550.00"/> |
| 10. <input type="text"/> | <input type="text"/> |

Total Other Direct Costs **G. Direct Costs****Funds Requested (\$)****Total Direct Costs (A thru F)** **H. Indirect Costs**

| | Indirect Cost Type | Indirect Cost Rate (%) | Indirect Cost Base (\$) | * Funds Requested (\$) |
|----|--|------------------------------------|---|---|
| 1. | <input type="text" value="EcoHealth Alliance F&A"/> | <input type="text" value="44.10"/> | <input type="text" value="322,588.00"/> | <input type="text" value="142,262.00"/> |
| 2. | <input type="text" value="EcoHealth Alliance F&A on 2 Subawar"/> | <input type="text" value="44.10"/> | <input type="text" value="50,000.00"/> | <input type="text" value="22,050.00"/> |
| 3. | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 4. | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |

Total Indirect Costs Cognizant Federal Agency

(Agency Name, POC Name, and POC Phone Number)

I. Total Direct and Indirect Costs**Funds Requested (\$)****Total Direct and Indirect Institutional Costs (G + H)** **J. Fee****Funds Requested (\$)****K. * Budget Justification**

(Only attach one file.)

ECOHEALTH ALLIANCE BUDGET JUSTIFICATION

A. 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 subawardees, as well as contributing to data analysis and manuscript writing.

Senior/Key Personnel, Dr. Epstein, will commit (b) (4), (b) (6) per year. Dr. Epstein will lead the design and implementation of the bat epidemiology fieldwork; supervise field teams, lab data analyses as well as conduct field training. He will participate in regular conference calls, help with data analysis, and draft manuscripts.

Senior/Key Personnel, Dr. Olival, will commit (b) (4), (b) (6) per year. Dr. Olival will direct the bat population genetics work, assist with data analyses, and manuscript writing. He will also advise on the modeling and provide training for field teams.

Senior/Key Personnel, Dr. Hosseini, will commit (b) (4), (b) (6) per year. Dr. Hosseini will perform spatial analyses and data mapping in collaboration with of Dr. Epstein and Dr. Olival.

B. Other personnel:

A research scientist will be hired at 12 months time per year to provide direct assistance and oversight of field activities in China; maintain equipment and logistics; and coordinate animal and human sample shipment to the labs in China and in the US. This person will be based at EcoHealth Alliance, but will spend significant time in the field.

Mr. Aleksei Chmura (b) (4), (b) (6) per year) in Y1-Y5 will fulfill program assistance duties as well as conduct field research in China. Mr Chmura will coordinate regular calls, reports, maintain EcoHealth Alliance budget and financial reporting, draft subcontracts, and set-up project database advise field activities and assist with statistical analysis.

Once we secure IRBs for human sampling in Y1, we will hire three medical officers from China provincial CDCs as consultants to work in Guangxi, Hunan, and Fujian during Y2-Y5. These medical officers will be responsible for all IRB approved human sampling as well as maintaining cold chain for storage and shipping of samples.

For all EcoHealth Alliance personnel that will have salary covered by this grant, we have included the EcoHealth Alliance 5% per annum increase in salary.

C. Fringe benefits.

Fringe benefits are calculated for EcoHealth Alliance's federally approved rate of 30% of base salary.

D. Consultant: Once all permits are in place in Y2-5, EcoHealth Alliance will contract three technician-consultants trained in phlebotomy – one in each province: Guangxi, Hunan, and Fujian. The technicians will conduct interviews as part of the human wildlife contact survey as well as collect blood samples from volunteers in animal markets. These will be given daily rate of \$67 for 5 months work per year (3 technicians x 5

months x 20 days per month x \$67 = \$20,000 per year) as well as funds to cover shipping and maintaining cold-chain (\$333 x 3 months x 3 provinces = \$3,000 per year) from provincial areas to Wuhan Institute of Virology. We also will support the technician's allowable room/transportation/food costs expected to average monthly at food (\$62), room (\$100), and transportation (\$100): \$262 x 3 technicians x 5 months = \$3,923 per year.

E. Equipment: N/A

F. Supplies: For Y1-Y5, we request annual support for tubes, syringes (5k); computer, phone, GPS (8k); lab reagents and buffer (10k); shipping (10k); PPE (10k); bat catching equipment (10k); food/accomodation for field team (10k); dry shippers, liquid Nitrogen (8k)

G. Travel

Domestic travel: \$4,400 is requested for years 1-5, comprising \$2,200 each for the PI (Dr. Daszak) and Senior/Key Personnel (Dr. Epstein) for travel to collaborating labs, to group meetings, and domestic scientific conferences to present results of our work.

International travel: \$33,000 is requested p.a. in Years 1-5. This will support 4 RT flights p.a. from New York to Shanghai or Guangzhou for the field veterinarian; 3 for the Senior/Key Personnel and 1 for the PI (Daszak) @ \$2500 ea; Food and accommodation at \$8,500 p.a. for Senior/Key Personnel and the field team in China including field activities. Field vehicle rental & driver hire \$500/wk x 9 wks.

H. Participant support costs: We are requesting consortium/contractual support for our two partners: East China Normal University and Wuhan Institute of Virology. We are requesting \$34,560 per year for Y1-Y5 for East China Normal University and for Wuhan Institute of Virology \$93,960 in Y1 and \$81,000 in Y2-Y5. These amounts are justified as follows:

EAST CHINA NORMAL UNIVERSITY

EcoHealth Alliance Budget Justification, H. Participant Support Costs (ctd)

a) Senior Personnel: Dr. Shuyi Zhang (b) (4), (b) (6) per year in Y1-Y5 Dr. Zhang will oversee the field sample collection and coordination of sample transfer to Wuhan or US partners. He will not request any salary from this grant. His salary will be covered by his instiutional discretionary funds.

b) Other personnel: A full time field biologist, Dr. GuanJian Zhu (b) (4), (b) (6) per year), will implement field site visits, sample collection, and sample shipment to Wuhan or to Co-PIs. A full time field technician, Mr. Junpeng Zhang (b) (4), (b) (6) per year), will assist with sample collection, handling, and transport from field to lab as well as with sample shipping from East China Normal University to Wuhan or US partners. Both Mr. Zhang and Dr. Zhu will work full-time for in Y1-Y5.

c) Fringe Benefits: Fringe benefits are provided at ECNU rate of 5% to Dr. Zhu and Mr. Zhang in Y1-Y5.

d) Equipment: N/A

e) Supplies: \$560 are allocated per year in Y1-Y5 to support Field Biologist and Field Technician costs for telephone internet, and GPS: Phone = $15 \times 2 = 30$; Internet = $5 \times 2 = 10$, GPS (batteries) = $3.5 \times 2 = 10$; total per month = \$47.

f) Travel: Dr. Zhang will provide travel costs for Field Biologist and Field Technician from discretionary funding. We request \$2,000 per year to support Dr. Zhang and Dr. Zhu to travel to US for Co-Investigator meetings in either Boston or New York. Support will provide room and board for the two at per diem rate of \$250 for 4 days (= $250 \times 4 \times 2 = \$2,000$). Dr. Zhang is already supported for travel funds of his own in those years.

g) Participant support costs: N/A

h) Other direct costs: N/A

i) Indirect Costs. All administrative costs are charged directly.

WUHAN INSTITUTE OF VIROLOGY

a) Key personnel. Dr. Zhengli Shi, Senior Virologist. (b) (4), (b) (6) per year in Y1-Y5. Dr. Shi will oversee the coronavirus screening for all samples collected in China. She will work with the PI, Co-Investigators, and Senior/Key Personnel to analyze data and write manuscripts. She will also coordinate data and material sharing with the co-Investigators. Dr. Shi will not take salary on this grant and is funded by discretionary sources at her Institute.

b) Other personnel:

Mr. Jialu Li, Lab technician. (b) (4), (b) (6) p.a. in Y1-Y5. The lab technician will test all bat and other animal samples collected in China for coronaviruses and will conduct molecular characterization and phylogenetic analyses of new coronavirus strains identified as well as catalog and ship samples and maintain a sample database.

EcoHealth Alliance Budget Justification, H. Participant Support Costs (ctd)

c) Fringe benefits: Wuhan Institute of Virology benefit rate of 5% is applied to salary for Mr. Jialu Li in Y1-Y5.

d) Equipment: The subcontractor will purchase one ultracold -80°C freezer for dedicated sample storage for this project. \$12,960.

e) Supplies: Annual costs for Laboratory reagents (20k); shipping to US (twice per year x 2.5k = 5k); testing costs (30k); expendable equipment costs (5k) are requested in Y1-Y5.

f) Travel: Round-trip airfare to Boston/NYC for Co-Investigator (Dr. Shi) for attending PD/PI meetings once-per year in Y1-Y5: \$2,600. Dr. Shi has discretionary funds to supplement travel expenditures. We also request \$2,400 to cover in-country transportation costs of supplies and samples.

g) Participant support costs: N/A

h) Other direct costs: We request annual support costs for Telephone (\$180), Printing (\$144), Conference Calls (\$504), and local shipping charges (\$172) for Dr. Shi's laboratory and Mr. Li in Y1-Y5.

i) Indirect Costs. All administrative costs are charged directly.

H. Other direct costs: We request \$71,000 in year one for sample collection materials including bat catching equipment, syringes, tubes, and reagents, and 2 liquid nitrogen dry shippers at \$3,000 each. We also request \$10,000 for shipping supplies from NY to China in yr 1, then \$5,000 p.a. for shipping in years 2-5. We also request \$4,000 in years 3 and 4 for lab reagents to complete population genetics tests.

Other expenses for publishing and communications including video conferencing facilities will be covered by EcoHealth Alliance.

I. Indirect Costs

We are requesting the EcoHealth Alliance federally-approved indirect cost rate of 30.0% on all applicable direct costs. Indirect is taken only on the first \$25,000 for each consortium/contractual agreement. As there are 2 (one to Wuhan Institute of Virology and the other to East China Normal University), a total of \$15,000 (\$7,500x2) is taken as indirect on consortium/contractual agreements only in Y1 and included as part of direct cost calculations. In Y2-Y5 no indirect is taken on consortium/contractual agreements.

RESEARCH & RELATED BUDGET - Cumulative Budget

| | | Totals (\$) |
|---|--------------|--------------|
| Section A, Senior/Key Person | | 555,817.00 |
| Section B, Other Personnel | | 683,614.00 |
| Total Number Other Personnel | 10 | |
| Total Salary, Wages and Fringe Benefits (A+B) | | 1,239,431.00 |
| Section C, Equipment | | |
| Section D, Travel | | 179,590.00 |
| 1. Domestic | 18,025.00 | |
| 2. Foreign | 161,565.00 | |
| Section E, Participant/Trainee Support Costs | | |
| 1. Tuition/Fees/Health Insurance | | |
| 2. Stipends | | |
| 3. Travel | | |
| 4. Subsistence | | |
| 5. Other | | |
| 6. Number of Participants/Trainees | | |
| Section F, Other Direct Costs | | 1,157,798.00 |
| 1. Materials and Supplies | 58,400.00 | |
| 2. Publication Costs | 10,400.00 | |
| 3. Consultant Services | | |
| 4. ADP/Computer Services | | |
| 5. Subawards/Consortium/Contractual Costs | 1,045,598.00 | |
| 6. Equipment or Facility Rental/User Fees | | |
| 7. Alterations and Renovations | | |
| 8. Other 1 | 40,000.00 | |
| 9. Other 2 | 3,400.00 | |
| 10. Other 3 | | |
| Section G, Direct Costs (A thru F) | | 2,576,819.00 |
| Section H, Indirect Costs | | 785,519.00 |
| Section I, Total Direct and Indirect Costs (G + H) | | 3,362,338.00 |
| Section J, Fee | | |

RESEARCH & RELATED BUDGET - SECTION A & B, BUDGET PERIOD 1* **ORGANIZATIONAL DUNS:** 5290274740000* **Budget Type:** Project Subaward/Consortium**Enter name of Organization:** Wuhan Institute of Virology* **Start Date:** 10-01-2013* **End Date:** 09-30-2014**Budget Period:** 1**A. Senior/Key Person**

| Prefix | * First Name | Middle Name | * Last Name | Suffix | * Project Role | Base Salary (\$) | Cal. Months | Acad. Months | Sum. Months | * Requested Salary (\$) | * Fringe Benefits (\$) | * Funds Requested (\$) |
|--------|--------------|-------------|-------------|--------|----------------------------|------------------|-------------|--------------|-------------|-------------------------|------------------------|------------------------|
| 1. | Dr. | Zhengli | | | Co-Investigator | | | | | | | (b) (4), (b) (6) |
| 2. | Dr. | Xingyi | | | Senior Research Technician | | | | | | | (b) (4), (b) (6) |

Total Funds Requested for all Senior Key Persons in the attached file**Additional Senior Key Persons:**

File Name:

Mime Type:

Total Senior/Key Person

(b) (4), (b) (6)

B. Other Personnel

| * Number of Personnel | * Project Role | Cal. Months | Acad. Months | Sum. Months | * Requested Salary (\$) | * Fringe Benefits | * Funds Requested (\$) |
|--|-------------------------------------|-------------|--------------|-------------|-------------------------|-------------------|------------------------|
| | Post Doctoral Associates | | | | | | |
| | Graduate Students | | | | | | |
| | Undergraduate Students | | | | | | |
| | Secretarial/Clerical | | | | | | |
| 1 | Laboratory Technician | | | | | | (b) (4), (b) (6) |
| 1 | Total Number Other Personnel | | | | | | (b) (4), (b) (6) |
| Total Salary, Wages and Fringe Benefits (A+B) | | | | | | | (b) (4), (b) (6) |

RESEARCH & RELATED Budget (A-B) (Funds Requested)

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 1* **ORGANIZATIONAL DUNS:** 5290274740000* **Budget Type:** Project Subaward/Consortium**Enter name of Organization:** Wuhan Institute of Virology* **Start Date:** 10-01-2013* **End Date:** 09-30-2014**Budget Period:** 1**C. Equipment Description**

List items and dollar amount for each item exceeding \$5,000

Equipment Item

* Funds Requested (\$)

Total funds requested for all equipment listed in the attached file

Total Equipment

Additional Equipment:

File Name:

Mime Type:

D. Travel

Funds Requested (\$)

1. Domestic Travel Costs (Incl. Canada, Mexico, and U.S. Possessions)

2,060.00

2. Foreign Travel Costs

Total Travel Cost

2,060.00

E. Participant/Trainee Support Costs

Funds Requested (\$)

1. Tuition/Fees/Health Insurance

2. Stipends

3. Travel

4. Subsistence

5. Other:

Number of Participants/Trainees

Total Participant/Trainee Support Costs

RESEARCH & RELATED Budget {C-E} (Funds Requested)

RESEARCH & RELATED BUDGET - SECTIONS F-K, BUDGET PERIOD 1* **ORGANIZATIONAL DUNS:** 5290274740000* **Budget Type:** Project Subaward/Consortium**Enter name of Organization:** Wuhan Institute of Virology* **Start Date:** 10-01-2013* **End Date:** 09-30-2014**Budget Period:** 1

| F. Other Direct Costs | Funds Requested (\$) |
|---|-----------------------------|
| 1. Materials and Supplies | 95,737.00 |
| 2. Publication Costs | |
| 3. Consultant Services | |
| 4. ADP/Computer Services | |
| 5. Subawards/Consortium/Contractual Costs | |
| 6. Equipment or Facility Rental/User Fees | |
| 7. Alterations and Renovations | |
| Total Other Direct Costs | 95,737.00 |

| G. Direct Costs | Funds Requested (\$) |
|--------------------------------------|-----------------------------|
| Total Direct Costs (A thru F) | 123,699.00 |

| H. Indirect Costs | | | |
|---|------------------------|-------------------------|------------------------|
| Indirect Cost Type | Indirect Cost Rate (%) | Indirect Cost Base (\$) | * Funds Requested (\$) |
| 1. Wuhan Institute of Virology F&A | 8.00 | 123,699.00 | 9,896.00 |
| Total Indirect Costs | | | 9,896.00 |
| Cognizant Federal Agency | | | |
| (Agency Name, POC Name, and POC Phone Number) | | | |

| I. Total Direct and Indirect Costs | Funds Requested (\$) |
|--|-----------------------------|
| Total Direct and Indirect Institutional Costs (G + H) | 133,595.00 |

| J. Fee | Funds Requested (\$) |
|---------------|-----------------------------|
|---------------|-----------------------------|

| K. * Budget Justification | File Name: 1242-WIV NIAID COV BUDGET JUSTIFICATION.pdf (Only attach one file.) | Mime Type: application/pdf |
|----------------------------------|--|----------------------------|
|----------------------------------|--|----------------------------|

RESEARCH & RELATED Budget (F-K) (Funds Requested)

RESEARCH & RELATED BUDGET - SECTION A & B, BUDGET PERIOD 2

* ORGANIZATIONAL DUNS: 5290274740000

* Budget Type: Project Subaward/Consortium

Enter name of Organization: Wuhan Institute of Virology

* Start Date: 10-01-2014

* End Date: 09-30-2015

Budget Period: 2

A. Senior/Key Person

| Prefix | * First Name | Middle Name | * Last Name | Suffix | * Project Role | Base Salary (\$) | Cal. Months | Acad. Months | Sum. Months | * Requested Salary (\$) | * Fringe Benefits (\$) | * Funds Requested (\$) |
|--------|--------------|-------------|-------------|--------|----------------------------|------------------|-------------|--------------|-------------|-------------------------|------------------------|------------------------|
| 1. | Dr. | Zhengli | | | Co-Investigator | | | | | | | (b) (4), (b) (6) |
| 2. | Dr. | Xingyi | | | Senior Research Technician | | | | | | | (b) (4), (b) (6) |

Total Funds Requested for all Senior Key Persons in the attached file

Additional Senior Key Persons:

File Name:

Mime Type:

Total Senior/Key Person

(b) (4), (b) (6)

B. Other Personnel

| * Number of Personnel | * Project Role | Cal. Months | Acad. Months | Sum. Months | * Requested Salary (\$) | * Fringe Benefits | * Funds Requested (\$) |
|--|-------------------------------------|-------------|--------------|-------------|-------------------------|-------------------|------------------------|
| | Post Doctoral Associates | | | | | | |
| | Graduate Students | | | | | | |
| | Undergraduate Students | | | | | | |
| | Secretarial/Clerical | | | | | | |
| 1 | Laboratory Technician | | | | | | (b) (4), (b) (6) |
| 1 | Total Number Other Personnel | | | | | | (b) (4), (b) (6) |
| Total Salary, Wages and Fringe Benefits (A+B) | | | | | | | (b) (4), (b) (6) |

RESEARCH & RELATED Budget (A-B) (Funds Requested)

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 2* **ORGANIZATIONAL DUNS:** 5290274740000* **Budget Type:** Project Subaward/Consortium**Enter name of Organization:** Wuhan Institute of Virology* **Start Date:** 10-01-2014* **End Date:** 09-30-2015**Budget Period:** 2**C. Equipment Description**

List items and dollar amount for each item exceeding \$5,000

Equipment Item

* Funds Requested (\$)

Total funds requested for all equipment listed in the attached file

Total Equipment

Additional Equipment:

File Name:

Mime Type:

D. Travel

Funds Requested (\$)

1. Domestic Travel Costs (Incl. Canada, Mexico, and U.S. Possessions)

2,060.00

2. Foreign Travel Costs

Total Travel Cost

2,060.00

E. Participant/Trainee Support Costs

Funds Requested (\$)

1. Tuition/Fees/Health Insurance

2. Stipends

3. Travel

4. Subsistence

5. Other:

Number of Participants/Trainees

Total Participant/Trainee Support Costs

RESEARCH & RELATED Budget {C-E} (Funds Requested)

RESEARCH & RELATED BUDGET - SECTIONS F-K, BUDGET PERIOD 2* **ORGANIZATIONAL DUNS:** 5290274740000* **Budget Type:** Project Subaward/Consortium**Enter name of Organization:** Wuhan Institute of Virology* **Start Date:** 10-01-2014* **End Date:** 09-30-2015**Budget Period:** 2

| F. Other Direct Costs | Funds Requested (\$) |
|---|-----------------------------|
| 1. Materials and Supplies | 100,756.00 |
| 2. Publication Costs | |
| 3. Consultant Services | |
| 4. ADP/Computer Services | |
| 5. Subawards/Consortium/Contractual Costs | |
| 6. Equipment or Facility Rental/User Fees | |
| 7. Alterations and Renovations | |
| Total Other Direct Costs | 100,756.00 |

| G. Direct Costs | Funds Requested (\$) |
|--------------------------------------|-----------------------------|
| Total Direct Costs (A thru F) | 128,718.00 |

| H. Indirect Costs | | | |
|---|-------------------------------|--------------------------------|-------------------------------|
| Indirect Cost Type | Indirect Cost Rate (%) | Indirect Cost Base (\$) | * Funds Requested (\$) |
| 1. Wuhan Institute of Virology F&A Rate | 8.00 | 128,718.00 | 10,297.00 |
| Total Indirect Costs | | | 10,297.00 |
| Cognizant Federal Agency | | | |
| (Agency Name, POC Name, and POC Phone Number) | | | |

| I. Total Direct and Indirect Costs | Funds Requested (\$) |
|--|-----------------------------|
| Total Direct and Indirect Institutional Costs (G + H) | 139,015.00 |

| J. Fee | Funds Requested (\$) |
|---------------|-----------------------------|
|---------------|-----------------------------|

| K. * Budget Justification | File Name: 1242-WIV NIAID COV BUDGET JUSTIFICATION.pdf | Mime Type: application/pdf |
|----------------------------------|--|----------------------------|
| | (Only attach one file.) | |

RESEARCH & RELATED Budget (F-K) (Funds Requested)

RESEARCH & RELATED BUDGET - SECTION A & B, BUDGET PERIOD 3

* ORGANIZATIONAL DUNS: 5290274740000

* Budget Type: Project Subaward/Consortium

Enter name of Organization: Wuhan Institute of Virology

* Start Date: 10-01-2015

* End Date: 09-30-2016

Budget Period: 3

| A. Senior/Key Person | | | | | | | | | | | | |
|--|--------------|-------------|-------------|------------|----------------------------|------------------|-------------|--------------|-------------|-------------------------|--------------------------------|------------------------|
| Prefix | * First Name | Middle Name | * Last Name | Suffix | * Project Role | Base Salary (\$) | Cal. Months | Acad. Months | Sum. Months | * Requested Salary (\$) | * Fringe Benefits (\$) | * Funds Requested (\$) |
| 1. | Dr. | Zhengli | | | Co-Investigator | | | | | | | (b) (4), (b) (6) |
| 2. | Dr. | Xingyi | | | Senior Research Technician | | | | | | | |
| Total Funds Requested for all Senior Key Persons in the attached file | | | | | | | | | | | | |
| Additional Senior Key Persons: | | | | File Name: | Mime Type: | | | | | | Total Senior/Key Person | (b) (4), (b) (6) |

| B. Other Personnel | | | | | | | | | | | | |
|-----------------------|-------------------------------------|--|--|--|--|-------------|--------------|-------------|-------------------------|--|------------------------|------------------|
| * Number of Personnel | * Project Role | | | | | Cal. Months | Acad. Months | Sum. Months | * Requested Salary (\$) | * Fringe Benefits | * Funds Requested (\$) | |
| | Post Doctoral Associates | | | | | | | | | | | |
| | Graduate Students | | | | | | | | | | | |
| | Undergraduate Students | | | | | | | | | | | |
| | Secretarial/Clerical | | | | | | | | | | | |
| 1 | Laboratory Technician | | | | | | | | | | | (b) (4), (b) (6) |
| 1 | Total Number Other Personnel | | | | | | | | | | | (b) (4), (b) (6) |
| | | | | | | | | | | Total Other Personnel | (b) (4), (b) (6) | |
| | | | | | | | | | | Total Salary, Wages and Fringe Benefits (A+B) | (b) (4), (b) (6) | |

RESEARCH & RELATED Budget (A-B) (Funds Requested)

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 3* **ORGANIZATIONAL DUNS:** 5290274740000* **Budget Type:** Project Subaward/Consortium**Enter name of Organization:** Wuhan Institute of Virology* **Start Date:** 10-01-2015* **End Date:** 09-30-2016**Budget Period:** 3**C. Equipment Description**

List items and dollar amount for each item exceeding \$5,000

Equipment Item

* Funds Requested (\$)

Total funds requested for all equipment listed in the attached file

Total Equipment

Additional Equipment:

File Name:

Mime Type:

D. Travel

Funds Requested (\$)

1. Domestic Travel Costs (Incl. Canada, Mexico, and U.S. Possessions)

2,060.00

2. Foreign Travel Costs

Total Travel Cost

2,060.00

E. Participant/Trainee Support Costs

Funds Requested (\$)

1. Tuition/Fees/Health Insurance

2. Stipends

3. Travel

4. Subsistence

5. Other:

Number of Participants/Trainees

Total Participant/Trainee Support Costs

RESEARCH & RELATED Budget {C-E} (Funds Requested)

RESEARCH & RELATED BUDGET - SECTIONS F-K, BUDGET PERIOD 3* **ORGANIZATIONAL DUNS:** 5290274740000* **Budget Type:** Project Subaward/Consortium**Enter name of Organization:** Wuhan Institute of Virology* **Start Date:** 10-01-2015* **End Date:** 09-30-2016**Budget Period:** 3

| F. Other Direct Costs | Funds Requested (\$) |
|---|-----------------------------|
| 1. Materials and Supplies | 119,373.00 |
| 2. Publication Costs | |
| 3. Consultant Services | |
| 4. ADP/Computer Services | |
| 5. Subawards/Consortium/Contractual Costs | |
| 6. Equipment or Facility Rental/User Fees | |
| 7. Alterations and Renovations | |
| Total Other Direct Costs | 119,373.00 |

| G. Direct Costs | Funds Requested (\$) |
|--------------------------------------|-----------------------------|
| Total Direct Costs (A thru F) | 147,335.00 |

| H. Indirect Costs | | | |
|---|-------------------------------|--------------------------------|-------------------------------|
| Indirect Cost Type | Indirect Cost Rate (%) | Indirect Cost Base (\$) | * Funds Requested (\$) |
| 1. Wuhan institute of Virology F&A Rate | 8.00 | 147,335.00 | 11,787.00 |
| Total Indirect Costs | | | 11,787.00 |
| Cognizant Federal Agency | | | |
| (Agency Name, POC Name, and POC Phone Number) | | | |

| I. Total Direct and Indirect Costs | Funds Requested (\$) |
|--|-----------------------------|
| Total Direct and Indirect Institutional Costs (G + H) | 159,122.00 |

| J. Fee | Funds Requested (\$) |
|---------------|-----------------------------|
|---------------|-----------------------------|

| K. * Budget Justification | File Name: 1242-WIV NIAID COV BUDGET JUSTIFICATION.pdf | Mime Type: application/pdf |
|----------------------------------|--|----------------------------|
| | (Only attach one file.) | |

RESEARCH & RELATED Budget (F-K) (Funds Requested)

RESEARCH & RELATED BUDGET - SECTION A & B, BUDGET PERIOD 4

* ORGANIZATIONAL DUNS: 5290274740000

* Budget Type: Project Subaward/Consortium

Enter name of Organization: Wuhan Institute of Virology

* Start Date: 10-01-2016

* End Date: 09-30-2017

Budget Period: 4

| A. Senior/Key Person | | | | | | | | | | | | |
|--|--------------|-------------|-------------|--------|----------------------------|------------------|-------------|--------------|--------------------------------|-------------------------|------------------------|------------------------|
| Prefix | * First Name | Middle Name | * Last Name | Suffix | * Project Role | Base Salary (\$) | Cal. Months | Acad. Months | Sum. Months | * Requested Salary (\$) | * Fringe Benefits (\$) | * Funds Requested (\$) |
| 1. | Dr. | Zhengli | | | Co-Investigator | | | | | | | (b) (4), (b) (6) |
| 2. | Dr. | Xingyi | | | Senior Research Technician | | | | | | | (b) (4), (b) (6) |
| Total Funds Requested for all Senior Key Persons in the attached file | | | | | | | | | | | | |
| Additional Senior Key Persons: | | | File Name: | | | Mime Type: | | | Total Senior/Key Person | | | (b) (4), (b) (6) |

| B. Other Personnel | | | | | | | | | | | | |
|--|-------------------------------------|--|--|--|--|-------------|--------------|-------------|-------------------------|-------------------|------------------------|--|
| * Number of Personnel | * Project Role | | | | | Cal. Months | Acad. Months | Sum. Months | * Requested Salary (\$) | * Fringe Benefits | * Funds Requested (\$) | |
| | Post Doctoral Associates | | | | | | | | | | | |
| | Graduate Students | | | | | | | | | | | |
| | Undergraduate Students | | | | | | | | | | | |
| | Secretarial/Clerical | | | | | | | | | | | |
| 1 | Laboratory Technician | | | | | | | | | | (b) (4), (b) (6) | |
| 1 | Total Number Other Personnel | | | | | | | | | | (b) (4), (b) (6) | |
| Total Salary, Wages and Fringe Benefits (A+B) | | | | | | | | | | | (b) (4), (b) (6) | |

RESEARCH & RELATED Budget (A-B) (Funds Requested)

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 4* **ORGANIZATIONAL DUNS:** 5290274740000* **Budget Type:** Project Subaward/Consortium**Enter name of Organization:** Wuhan Institute of Virology* **Start Date:** 10-01-2016* **End Date:** 09-30-2017**Budget Period:** 4**C. Equipment Description**

List items and dollar amount for each item exceeding \$5,000

Equipment Item

* Funds Requested (\$)

Total funds requested for all equipment listed in the attached file

Total Equipment

Additional Equipment:

File Name:

Mime Type:

D. Travel

Funds Requested (\$)

1. Domestic Travel Costs (Incl. Canada, Mexico, and U.S. Possessions)

2,060.00

2. Foreign Travel Costs

Total Travel Cost

2,060.00

E. Participant/Trainee Support Costs

Funds Requested (\$)

1. Tuition/Fees/Health Insurance

2. Stipends

3. Travel

4. Subsistence

5. Other:

Number of Participants/Trainees

Total Participant/Trainee Support Costs

RESEARCH & RELATED Budget {C-E} (Funds Requested)

RESEARCH & RELATED BUDGET - SECTIONS F-K, BUDGET PERIOD 4* **ORGANIZATIONAL DUNS:** 5290274740000* **Budget Type:** Project Subaward/Consortium**Enter name of Organization:** Wuhan Institute of Virology* **Start Date:** 10-01-2016* **End Date:** 09-30-2017**Budget Period:** 4

| F. Other Direct Costs | Funds Requested (\$) |
|---|-----------------------------|
| 1. Materials and Supplies | 119,373.00 |
| 2. Publication Costs | |
| 3. Consultant Services | |
| 4. ADP/Computer Services | |
| 5. Subawards/Consortium/Contractual Costs | |
| 6. Equipment or Facility Rental/User Fees | |
| 7. Alterations and Renovations | |
| Total Other Direct Costs | 119,373.00 |

| G. Direct Costs | Funds Requested (\$) |
|--------------------------------------|-----------------------------|
| Total Direct Costs (A thru F) | 147,335.00 |

| H. Indirect Costs | | | |
|---|-------------------------------|--------------------------------|-------------------------------|
| Indirect Cost Type | Indirect Cost Rate (%) | Indirect Cost Base (\$) | * Funds Requested (\$) |
| 1. Wuhan Institute of Virology F&A Rate | 8.00 | 147,335.00 | 11,787.00 |
| Total Indirect Costs | | | 11,787.00 |
| Cognizant Federal Agency | | | |
| (Agency Name, POC Name, and POC Phone Number) | | | |

| I. Total Direct and Indirect Costs | Funds Requested (\$) |
|--|-----------------------------|
| Total Direct and Indirect Institutional Costs (G + H) | 159,122.00 |

| J. Fee | Funds Requested (\$) |
|---------------|-----------------------------|
|---------------|-----------------------------|

| K. * Budget Justification | File Name: 1242-WIV NIAID COV BUDGET JUSTIFICATION.pdf (Only attach one file.) | Mime Type: application/pdf |
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RESEARCH & RELATED Budget (F-K) (Funds Requested)

RESEARCH & RELATED BUDGET - SECTION A & B, BUDGET PERIOD 5

* ORGANIZATIONAL DUNS: 5290274740000

* Budget Type: Project Subaward/Consortium

Enter name of Organization: Wuhan Institute of Virology

* Start Date: 10-01-2017

* End Date: 09-30-2018

Budget Period: 5

| A. Senior/Key Person | | | | | | | | | | | | |
|--|--------------|-------------|-------------|--------|----------------------------|------------------|-------------|--------------|-------------------------|-------------------------|------------------------|------------------------|
| Prefix | * First Name | Middle Name | * Last Name | Suffix | * Project Role | Base Salary (\$) | Cal. Months | Acad. Months | Sum. Months | * Requested Salary (\$) | * Fringe Benefits (\$) | * Funds Requested (\$) |
| 1. | Dr. | Zhengli | | | Co-Investigator | | | | | | | (b) (4), (b) (6) |
| 2. | Dr. | Xingyi | | | Senior Research Technician | | | | | | | (b) (4), (b) (6) |
| Total Funds Requested for all Senior Key Persons in the attached file | | | | | | | | | | | | |
| Additional Senior Key Persons: | | | File Name: | | | Mime Type: | | | Total Senior/Key Person | | | (b) (4), (b) (6) |

| B. Other Personnel | | | | | | | | | | | | |
|-----------------------|-------------------------------------|--|--|--|--|-------------|--------------|-------------|-------------------------|--|------------------------|--|
| * Number of Personnel | * Project Role | | | | | Cal. Months | Acad. Months | Sum. Months | * Requested Salary (\$) | * Fringe Benefits | * Funds Requested (\$) | |
| | Post Doctoral Associates | | | | | | | | | | | |
| | Graduate Students | | | | | | | | | | | |
| | Undergraduate Students | | | | | | | | | | | |
| | Secretarial/Clerical | | | | | | | | | | | |
| 1 | Laboratory Technician | | | | | | | | | | (b) (4), (b) (6) | |
| 1 | Total Number Other Personnel | | | | | | | | | | (b) (4), (b) (6) | |
| | | | | | | | | | | Total Other Personnel | (b) (4), (b) (6) | |
| | | | | | | | | | | Total Salary, Wages and Fringe Benefits (A+B) | (b) (4), (b) (6) | |

RESEARCH & RELATED Budget (A-B) (Funds Requested)

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 5* **ORGANIZATIONAL DUNS:** 5290274740000* **Budget Type:** Project Subaward/Consortium**Enter name of Organization:** Wuhan Institute of Virology* **Start Date:** 10-01-2017* **End Date:** 09-30-2018**Budget Period:** 5**C. Equipment Description**

List items and dollar amount for each item exceeding \$5,000

Equipment Item

* Funds Requested (\$)

Total funds requested for all equipment listed in the attached file

Total Equipment

Additional Equipment:

File Name:

Mime Type:

D. Travel

Funds Requested (\$)

1. Domestic Travel Costs (Incl. Canada, Mexico, and U.S. Possessions)

2,060.00

2. Foreign Travel Costs

Total Travel Cost

2,060.00

E. Participant/Trainee Support Costs

Funds Requested (\$)

1. Tuition/Fees/Health Insurance

2. Stipends

3. Travel

4. Subsistence

5. Other:

Number of Participants/Trainees

Total Participant/Trainee Support Costs

RESEARCH & RELATED Budget {C-E} (Funds Requested)

RESEARCH & RELATED BUDGET - SECTIONS F-K, BUDGET PERIOD 5* **ORGANIZATIONAL DUNS:** 5290274740000* **Budget Type:** Project Subaward/Consortium**Enter name of Organization:** Wuhan Institute of Virology* **Start Date:** 10-01-2017* **End Date:** 09-30-2018**Budget Period:** 5

| F. Other Direct Costs | Funds Requested (\$) |
|---|-----------------------------|
| 1. Materials and Supplies | 119,373.00 |
| 2. Publication Costs | |
| 3. Consultant Services | |
| 4. ADP/Computer Services | |
| 5. Subawards/Consortium/Contractual Costs | |
| 6. Equipment or Facility Rental/User Fees | |
| 7. Alterations and Renovations | |
| Total Other Direct Costs | 119,373.00 |

| G. Direct Costs | Funds Requested (\$) |
|--------------------------------------|-----------------------------|
| Total Direct Costs (A thru F) | 147,335.00 |

| H. Indirect Costs | | | |
|---|-------------------------------|--------------------------------|-------------------------------|
| Indirect Cost Type | Indirect Cost Rate (%) | Indirect Cost Base (\$) | * Funds Requested (\$) |
| 1. Wuhan Institute of Virology F&A Rate | 8.00 | 147,355.00 | 11,787.00 |
| Total Indirect Costs | | | 11,787.00 |
| Cognizant Federal Agency | | | |
| (Agency Name, POC Name, and POC Phone Number) | | | |

| I. Total Direct and Indirect Costs | Funds Requested (\$) |
|--|-----------------------------|
| Total Direct and Indirect Institutional Costs (G + H) | 159,122.00 |

| J. Fee | Funds Requested (\$) |
|---------------|-----------------------------|
|---------------|-----------------------------|

| K. * Budget Justification | File Name: 1242-WIV NIAID COV BUDGET JUSTIFICATION.pdf | Mime Type: application/pdf |
|----------------------------------|--|----------------------------|
| | (Only attach one file.) | |

RESEARCH & RELATED Budget (F-K) (Funds Requested)

RESEARCH & RELATED BUDGET - Cumulative Budget

| | Totals (\$) | |
|---|-------------|------------|
| Section A, Senior/Key Person | | 79,325.00 |
| Section B, Other Personnel | | 50,185.00 |
| Total Number Other Personnel | 5 | |
| Total Salary, Wages and Fringe Benefits (A+B) | | 129,510.00 |
| Section C, Equipment | | |
| Section D, Travel | | 10,300.00 |
| 1. Domestic | 10,300.00 | |
| 2. Foreign | | |
| Section E, Participant/Trainee Support Costs | | |
| 1. Tuition/Fees/Health Insurance | | |
| 2. Stipends | | |
| 3. Travel | | |
| 4. Subsistence | | |
| 5. Other | | |
| 6. Number of Participants/Trainees | | |
| Section F, Other Direct Costs | | 554,612.00 |
| 1. Materials and Supplies | 554,612.00 | |
| 2. Publication Costs | | |
| 3. Consultant Services | | |
| 4. ADP/Computer Services | | |
| 5. Subawards/Consortium/Contractual Costs | | |
| 6. Equipment or Facility Rental/User Fees | | |
| 7. Alterations and Renovations | | |
| 8. Other 1 | | |
| 9. Other 2 | | |
| 10. Other 3 | | |
| Section G, Direct Costs (A thru F) | | 694,422.00 |
| Section H, Indirect Costs | | 55,554.00 |
| Section I, Total Direct and Indirect Costs (G + H) | | 749,976.00 |
| Section J, Fee | | |

WUHAN INSTITUTE OF VIROLOGY BUDGET JUSTIFICATION, SUBAWARD

A. Senior/Key Personnel:

Co-Investigator, Dr. Zhengli Shi, a Senior Research Scientist at the Chinese Academy of Science's Wuhan Institute of Virology will commit (b) (4), (b) (6) per year (b) (4), (b) (6) to this project to refine study protocols, coordinate research, oversee implementation of all activities, analyze data, lead regular meetings with other PD/PI and Other Senior/Key Personnel as well as draft papers. Dr. Xingyi Ge, Senior Research Technician, will commit (b) (4), (b) (6) per year to perform all laboratory work and directly supervise the laboratory technician.

B. Other Personnel

One laboratory technician will commit (b) (4), (b) (6) per year (b) (4), (b) (6) each to this project to perform all required laboratory assays and maintenance as well as participate in selected meetings, perform research for papers, and assist Dr. Shi in performing the work under this award.

All Wuhan Institute of Virology salaries include the US "overhead" or "fringe", so this is not calculated separately.

C. Equipment

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

D. Travel

We are requesting \$2,060 per year for all years for Senior/Key Personnel Dr. Shi and Dr. Ge to travel to Shanghai to visit partner laboratory at East China Normal University (ECNU) and meet with the PD/PI as well as with collaborators on this proposal: these include EcoHealth Alliance, East China Normal University, Yunnan CDC, Shanghai CDC, and Guangdong CDC. Travel is calculated at one round trip airfare from Wuhan to Shanghai (\$300), three-night hotel in Shanghai (\$150 per night), and four days per diem (at \$70 per day)

F. Other Direct Costs

We are requesting support for laboratory experiments and related costs.

RNA Extractions

We will be running RNA Extractions for 1,000 bats per year (three samples per bat: oral, anal, and blood) in each year of the project. This will cost \$13,922 per year (QIAamp ViralRNA Mini Kit with Axygen Pipette Tips and Filter Tubes at \$4.64 per sample). Extracted RNA per animal will be pooled.

RT-PCR

Costs for 1-Step RT-PCR assays for Coronavirus conducted on 1,000 samples per year for each year of the project total \$7,123 and are detailed as follows: Superscript III one step kit (\$5.18 per sample); Platinum Tag DNA Polymerase (\$0.57 per sample); nuclease-free water (\$0.16 per sample); and Axygen Pipette Tips and Filter Tubes (\$1.21 per sample).

DNA Sequencing

In each year of the project, DNA Sequencing will be performed on 3,200 samples at a cost of \$2.91 per reaction. We request a total of \$9,325 per year in each year.

Laboratory Supplies

We request support for *in vitro* infection experiments using pseudoviruses carrying the spike proteins (wild type or mutants) or live viruses in cell lines of different origins, binding affinity assays between the spike proteins (wild type or mutants) and different cellular receptor molecules, and humanized mouse experiments.

In Year 1, \$65,367 is requested: Lipofectamine2000 transfection reagent at a cost of \$2,428; cell lines from bats and other mammals including primates and humans at a cost of \$971; *in vitro* infection experiments require GIBCO Fetal Bovine Serum (\$3,562), GIBCO antibiotic antimycotic (\$563), GIBCO medium (\$2,914) as well as \$19,426 for Corning Cell culture; receptor-mutant pseudovirus binding assays require Luciferase assay system E1500 (\$858), pseudovirus package (\$3,885), and sequencing (\$22,664); \$8,094 is required for protein expression from the binding affinity assays.

In Year 2, \$70,385 is requested: Lipofectamine2000 transfection reagent at a cost of \$2,428; cell lines from bats and other mammals including primates and humans at a cost of \$971 – sufficient cell lines will be established by the end of Year 2, so this cost requirement will discontinue in Years 3-5; increased number of *in vitro* infection experiments require slightly more funding for GIBCO Fetal Bovine Serum (\$4,047) as well as GIBCO antibiotic antimycotic (\$563), GIBCO medium (\$2,914) as well as \$19,426 for Corning Cell culture; receptor-mutant pseudovirus binding assays require Luciferase assay system E1500 (\$858), pseudovirus package requirements will approximately double from Y1 (\$6,799), and sequencing (\$22,664); \$9,713 is required for protein expression from the increased Year 2 number of binding affinity assays at a slightly higher cost than year one as well.

In Years 3, 4 and 5, \$89,002 is requested per year: Lipofectamine2000 transfection reagent at a cost of \$2,428 per year; increased number of *in vitro* infection experiments require slightly more funding for GIBCO Fetal Bovine Serum (\$5,828 per year) as well as GIBCO antibiotic antimycotic (\$563 per year), GIBCO medium (\$2,914 per year) as well as \$19,426 per year for Corning Cell culture; receptor-mutant pseudovirus binding assays require Luciferase assay system E1500 (\$858 per year), pseudovirus package requirements will be \$6,799 per year, sequencing (\$22,664 per year) and gene synthesis (\$12,915 per year) will also be required; \$9,713 per year is required for protein expression from binding affinity assays; in only years 3, 4, and 5 humanized mouse *in vivo* experimental animals will be raised at an annual cost of \$4,857 per year.

H. Indirect Costs

We are requesting an extremely indirect cost of 8% on all direct costs.

RESEARCH & RELATED BUDGET - SECTION A & B, BUDGET PERIOD 1* **ORGANIZATIONAL DUNS:** 4209454950000* **Budget Type:** Project Subaward/Consortium**Enter name of Organization:** East China Normal University* **Start Date:** 10-01-2013* **End Date:** 09-30-2014**Budget Period:** 1**A. Senior/Key Person**

| Prefix | * First Name | Middle Name | * Last Name | Suffix | * Project Role | Base Salary (\$) | Cal. Months | Acad. Months | Sum. Months | * Requested Salary (\$) | * Fringe Benefits (\$) | * Funds Requested (\$) |
|--------|--------------|-------------|-------------|--------|---------------------|------------------|-------------|--------------|-------------|-------------------------|------------------------|------------------------|
| 1. | Dr. | Shuyi | Zhang | | Co-Investigator | | | | | | | (b) (4), (b) (6) |
| 2. | Dr. | Guangjian | Zhu | | Research Technician | | | | | | | (b) (4), (b) (6) |

Total Funds Requested for all Senior Key Persons in the attached file**Additional Senior Key Persons:**

File Name:

Mime Type:

Total Senior/Key Person

(b) (4), (b) (6)

B. Other Personnel

| * Number of Personnel | * Project Role | Cal. Months | Acad. Months | Sum. Months | * Requested Salary (\$) | * Fringe Benefits | * Funds Requested (\$) |
|-----------------------|-------------------------------------|-------------|--------------|-------------|--|------------------------------|------------------------|
| | Post Doctoral Associates | | | | | | |
| | Graduate Students | | | | | | |
| | Undergraduate Students | | | | | | |
| | Secretarial/Clerical | | | | | | |
| 0 | Total Number Other Personnel | | | | | | |
| | | | | | | Total Other Personnel | |
| | | | | | Total Salary, Wages and Fringe Benefits (A+B) | | 25,000.00 |

RESEARCH & RELATED Budget (A-B) (Funds Requested)

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 1* **ORGANIZATIONAL DUNS:** 4209454950000* **Budget Type:** Project Subaward/Consortium**Enter name of Organization:** East China Normal University* **Start Date:** 10-01-2013* **End Date:** 09-30-2014**Budget Period:** 1**C. Equipment Description**

List items and dollar amount for each item exceeding \$5,000

Equipment Item

* Funds Requested (\$)

Total funds requested for all equipment listed in the attached file

Total Equipment

Additional Equipment:

File Name:

Mime Type:

D. Travel

Funds Requested (\$)

1. Domestic Travel Costs (Incl. Canada, Mexico, and U.S. Possessions)

2,700.00

2. Foreign Travel Costs

Total Travel Cost

2,700.00

E. Participant/Trainee Support Costs

Funds Requested (\$)

1. Tuition/Fees/Health Insurance

2. Stipends

3. Travel

4. Subsistence

5. Other:

Number of Participants/Trainees

Total Participant/Trainee Support Costs

RESEARCH & RELATED Budget {C-E} (Funds Requested)

RESEARCH & RELATED BUDGET - SECTIONS F-K, BUDGET PERIOD 1* **ORGANIZATIONAL DUNS:** 4209454950000* **Budget Type:** Project Subaward/Consortium**Enter name of Organization:** East China Normal University* **Start Date:** 10-01-2013* **End Date:** 09-30-2014**Budget Period:** 1

| F. Other Direct Costs | Funds Requested (\$) |
|---|-----------------------------|
| 1. Materials and Supplies | |
| 2. Publication Costs | |
| 3. Consultant Services | |
| 4. ADP/Computer Services | |
| 5. Subawards/Consortium/Contractual Costs | |
| 6. Equipment or Facility Rental/User Fees | |
| 7. Alterations and Renovations | |
| 8. Fieldwork Support Costs | 59,400.00 |
| Total Other Direct Costs | 59,400.00 |

| G. Direct Costs | Funds Requested (\$) |
|--------------------------------------|-----------------------------|
| Total Direct Costs (A thru F) | 87,100.00 |

| H. Indirect Costs | | | |
|---|-------------------------------|--------------------------------|-------------------------------|
| Indirect Cost Type | Indirect Cost Rate (%) | Indirect Cost Base (\$) | * Funds Requested (\$) |
| 1. East China Normal University F&A Rate | 8.00 | 87,100.00 | 6,968.00 |
| Total Indirect Costs | | | 6,968.00 |
| Cognizant Federal Agency | | | |
| (Agency Name, POC Name, and POC Phone Number) | | | |

| I. Total Direct and Indirect Costs | Funds Requested (\$) |
|--|-----------------------------|
| Total Direct and Indirect Institutional Costs (G + H) | 94,068.00 |

| J. Fee | Funds Requested (\$) |
|---------------|-----------------------------|
| | |

| K. * Budget Justification | File Name: 1243-ECNU NIAID COV BUDGET JUSTIFICATION.pdf | Mime Type: application/pdf |
|----------------------------------|---|----------------------------|
| | (Only attach one file.) | |

RESEARCH & RELATED Budget {F-K} (Funds Requested)

RESEARCH & RELATED BUDGET - SECTION A & B, BUDGET PERIOD 2* **ORGANIZATIONAL DUNS:** 4209454950000* **Budget Type:** Project Subaward/Consortium**Enter name of Organization:** East China Normal University* **Start Date:** 10-01-2014* **End Date:** 09-30-2015**Budget Period:** 2**A. Senior/Key Person**

| Prefix | * First Name | Middle Name | * Last Name | Suffix | * Project Role | Base Salary (\$) | Cal. Months | Acad. Months | Sum. Months | * Requested Salary (\$) | * Fringe Benefits (\$) | * Funds Requested (\$) |
|--------|--------------|-------------|-------------|--------|---------------------|---------------------|----------------|-----------------|----------------|----------------------------|---------------------------|------------------------|
| 1. | Dr. | Shuyi | Zhang | | Co-Investigator | | | | | | | (b) (4), (b) (6) |
| 2. | Dr. | Guangjian | Zhu | | Research Technician | | | | | | | (b) (4), (b) (6) |

Total Funds Requested for all Senior Key Persons in the attached file**Additional Senior Key Persons:**

File Name:

Mime Type:

Total Senior/Key Person

(b) (4), (b) (6)

B. Other Personnel

| * Number of Personnel | * Project Role | Cal. Months | Acad. Months | Sum. Months | * Requested Salary (\$) | * Fringe Benefits | * Funds Requested (\$) |
|--------------------------|-------------------------------------|----------------|-----------------|----------------|--|------------------------------|---------------------------|
| | Post Doctoral Associates | | | | | | |
| | Graduate Students | | | | | | |
| | Undergraduate Students | | | | | | |
| | Secretarial/Clerical | | | | | | |
| 0 | Total Number Other Personnel | | | | | | |
| | | | | | | Total Other Personnel | |
| | | | | | Total Salary, Wages and Fringe Benefits (A+B) | | (b) (4), (b) (6) |

RESEARCH & RELATED Budget (A-B) (Funds Requested)

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 2* **ORGANIZATIONAL DUNS:** 4209454950000* **Budget Type:** Project Subaward/Consortium**Enter name of Organization:** East China Normal University* **Start Date:** 10-01-2014* **End Date:** 09-30-2015**Budget Period:** 2**C. Equipment Description**

List items and dollar amount for each item exceeding \$5,000

Equipment Item

* Funds Requested (\$)

Total funds requested for all equipment listed in the attached file

Total Equipment

Additional Equipment:

File Name:

Mime Type:

D. Travel

Funds Requested (\$)

1. Domestic Travel Costs (Incl. Canada, Mexico, and U.S. Possessions)

2,700.00

2. Foreign Travel Costs

Total Travel Cost

2,700.00

E. Participant/Trainee Support Costs

Funds Requested (\$)

1. Tuition/Fees/Health Insurance

2. Stipends

3. Travel

4. Subsistence

5. Other:

Number of Participants/Trainees

Total Participant/Trainee Support Costs

RESEARCH & RELATED Budget {C-E} (Funds Requested)

RESEARCH & RELATED BUDGET - SECTIONS F-K, BUDGET PERIOD 2* **ORGANIZATIONAL DUNS:** 4209454950000* **Budget Type:** Project Subaward/Consortium**Enter name of Organization:** East China Normal University* **Start Date:** 10-01-2014* **End Date:** 09-30-2015**Budget Period:** 2

| F. Other Direct Costs | Funds Requested (\$) |
|---|-----------------------------|
| 1. Materials and Supplies | |
| 2. Publication Costs | |
| 3. Consultant Services | |
| 4. ADP/Computer Services | |
| 5. Subawards/Consortium/Contractual Costs | |
| 6. Equipment or Facility Rental/User Fees | |
| 7. Alterations and Renovations | |
| 8. Field Work Support Costs | 39,600.00 |
| Total Other Direct Costs | 39,600.00 |

| G. Direct Costs | Funds Requested (\$) |
|--------------------------------------|-----------------------------|
| Total Direct Costs (A thru F) | 67,300.00 |

| H. Indirect Costs | | | |
|---|-------------------------------|--------------------------------|-------------------------------|
| Indirect Cost Type | Indirect Cost Rate (%) | Indirect Cost Base (\$) | * Funds Requested (\$) |
| 1. East China Normal University F&A Rate | 8.00 | 67,300.00 | 5,384.00 |
| Total Indirect Costs | | | 5,384.00 |
| Cognizant Federal Agency | | | |
| (Agency Name, POC Name, and POC Phone Number) | | | |

| I. Total Direct and Indirect Costs | Funds Requested (\$) |
|--|-----------------------------|
| Total Direct and Indirect Institutional Costs (G + H) | 72,684.00 |

| J. Fee | Funds Requested (\$) |
|---------------|-----------------------------|
| | |

| K. * Budget Justification | File Name: 1243-ECNU NIAID COV BUDGET JUSTIFICATION.pdf | Mime Type: application/pdf |
|----------------------------------|---|----------------------------|
| | (Only attach one file.) | |

RESEARCH & RELATED Budget {F-K} (Funds Requested)

RESEARCH & RELATED BUDGET - SECTION A & B, BUDGET PERIOD 3

* ORGANIZATIONAL DUNS: 4209454950000

* Budget Type: Project Subaward/Consortium

Enter name of Organization: East China Normal University

* Start Date: 10-01-2015

* End Date: 09-30-2016

Budget Period: 3

A. Senior/Key Person

| Prefix | * First Name | Middle Name | * Last Name | Suffix | * Project Role | Base Salary (\$) | Cal. Months | Acad. Months | Sum. Months | * Requested Salary (\$) | * Fringe Benefits (\$) | * Funds Requested (\$) |
|--------|--------------|-------------|-------------|--------|---------------------|------------------|-------------|--------------|-------------|-------------------------|------------------------|------------------------|
| 1. | Dr. | Shuyi | Zhang | | Co-Investigator | | | | | | | (b) (4), (b) (6) |
| 2. | Dr. | Guangjian | Zhu | | Research Technician | | | | | | | (b) (4), (b) (6) |

Total Funds Requested for all Senior Key Persons in the attached file

Additional Senior Key Persons: File Name: Mime Type: Total Senior/Key Person (b) (4), (b) (6)

B. Other Personnel

| * Number of Personnel | * Project Role | Cal. Months | Acad. Months | Sum. Months | * Requested Salary (\$) | * Fringe Benefits | * Funds Requested (\$) |
|--|-------------------------------------|-------------|--------------|-------------|-------------------------|-------------------|------------------------|
| | Post Doctoral Associates | | | | | | |
| | Graduate Students | | | | | | |
| | Undergraduate Students | | | | | | |
| | Secretarial/Clerical | | | | | | |
| 0 | Total Number Other Personnel | | | | | | |
| Total Other Personnel | | | | | | | |
| Total Salary, Wages and Fringe Benefits (A+B) | | | | | | | (b) (4), (b) (6) |

RESEARCH & RELATED Budget (A-B) (Funds Requested)

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 3* **ORGANIZATIONAL DUNS:** 4209454950000* **Budget Type:** Project Subaward/Consortium**Enter name of Organization:** East China Normal University* **Start Date:** 10-01-2015* **End Date:** 09-30-2016**Budget Period:** 3**C. Equipment Description**

List items and dollar amount for each item exceeding \$5,000

Equipment Item

* Funds Requested (\$)

Total funds requested for all equipment listed in the attached file

Total Equipment

Additional Equipment:

File Name:

Mime Type:

D. Travel

Funds Requested (\$)

1. Domestic Travel Costs (Incl. Canada, Mexico, and U.S. Possessions)

2,700.00

2. Foreign Travel Costs

Total Travel Cost

2,700.00

E. Participant/Trainee Support Costs

Funds Requested (\$)

1. Tuition/Fees/Health Insurance

2. Stipends

3. Travel

4. Subsistence

5. Other:

Number of Participants/Trainees

Total Participant/Trainee Support Costs

RESEARCH & RELATED Budget {C-E} (Funds Requested)