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 (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)

B.S.	1990	E CONTROL DE LA
= (3:25)	1990	Endemic Diseases
M.D.	2005	Medicine
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

 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

- 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
- 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
- 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)

- 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
- 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
- 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: 01/01/2011-12/01/2013

Yunnan applied basic research projects

**Budget Type:	Principa	d Investigator/Progr	am Director (Last, fi	rst, middle): Daszak, F	Peter								MB Number: 4040-0001 iration Date: 06/30/2011
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Total Salary, Wages and Fringe Benefits (A+B) 221,876.00

RESEARCH & RELATED BUI	DGET - SECTION C, D	, & E, BUD	GET PERIOD 1	
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1. Domestic Travel Costs (Incl. Canada, Mexico and U.S. F	ossessions)	3,605.00		
2. Foreign Travel Costs		32,313.00		
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RESEARCH & RELATED Budget (C-E) (Funds Requested)

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	nd Date:	Budget P	eriad	
F. Other Direct Costs			Funds Requested (\$)	
Materials and Supplies			21,400.00	
2. Publication Costs			21,400.00	
3. Consultant Services				
4. ADP/Computer Services				
5. Subawards/Consortium/Contractual Costs			227,663.00	
6. Equipment or Facility Rental/User Fees			2217 093.00	
7. Alterations and Renovations				
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RESEARCH & RELATED Budget (C-E) (Funds Requested)

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F. Other Direct Costs			Funds Requested (\$)	
1. Materials and Supplies			19,250.00	
2. Publication Costs			2,600,00	
3. Consultant Services				
4. ADP/Computer Services				
5. Subawards/Consortium/Contractual Costs			211,699.00	
6. Equipment or Facility Rental/User Fees				
7. Alterations and Renovations				
8. Shipping and Communications			10,000.00	
9. Local Reimbursement		t,	950.00	
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1	Prog	ram Coordinator										0.1
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		Manage & Arrange	W.4									
2	Total	Number Other Person	inel								Other Personnel	100/101/00
							Total S	Salary	, Wages	and Fringe I	Benefits (A+B)	248,318.00

* ORGANIZATIONAL DUNS: UV789006600000			GET PERIOD 3	
* Budget Type: Project Subaward/Consortium				
Enter name of Organization: Entertal Allbande, Inc.				
Delete Entry *Start Date: 10/01/13015 *End Date: 39/30/2016	Budget Perla	d 3		
C. Equipment Description				
List items and dollar amount for each item exceeding \$5,000				
Equipment item		Funds Req	uested (\$)	
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11. Total funds requested for all equipment listed in the attached file				
11. Total funds requested for all equipment listed in the attached file	al Equipment			
11. Total funds requested for all equipment listed in the attached file	al Equipment	tachment	Delsta Atranhmant	View Attachment
11. Total funds requested for all equipment listed in the attached file Total	al Equipment	tachment	Delete Atrantiment	View Attachment
Total funds requested for all equipment listed in the attached file Total Additional Equipment:	al Equipment	tachment Funds Requ		View Attachment
11. Total funds requested for all equipment listed in the attached file Total	al Equipment	Funds Requ		View Attachment
Total funds requested for all equipment listed in the attached file Tot Additional Equipment: D. Travel	al Equipment	Funds Requ	ested (\$)	View Attachment
11. Total funds requested for all equipment listed in the attached file Total Additional Equipment: D. Travel 1. Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions) 2. Foreign Travel Costs	al Equipment	Funds Requ 3,605.00 32,313.00	ested (\$)	View Attachment
11. Total funds requested for all equipment listed in the attached file Total Additional Equipment: D. Travel 1. Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions) 2. Foreign Travel Costs To	al Equipment Add A	Funds Requ 3,605.00 32,313.00 35,918.00	ested (\$)	View Attachment
11. Total funds requested for all equipment listed in the attached file Total Additional Equipment: D. Travel 1. Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions) 2. Foreign Travel Costs To	al Equipment Add A	Funds Requ 3,605.00 32,313.00	ested (\$)	View Attachment
11. Total funds requested for all equipment listed in the attached file Total Additional Equipment: D. Travel 1. Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions) 2. Foreign Travel Costs To	al Equipment Add A	Funds Requ 3,605.00 32,313.00 35,918.00	ested (\$)	View Attachment
11. Total funds requested for all equipment listed in the attached file Total Additional Equipment: D. Travel 1. Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions) 2. Foreign Travel Costs To E. Participant/Trainee Support Costs	al Equipment Add A	Funds Requ 3,605.00 32,313.00 35,918.00	ested (\$)	View Attachment
11. Total funds requested for all equipment listed in the attached file Total Additional Equipment: D. Travel 1. Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions) 2. Foreign Travel Costs To E. Participant/Trainee Support Costs 1. Tuition/Fees/Health Insurance	al Equipment Add A	Funds Requ 3,605.00 32,313.00 35,918.00	ested (\$)	View Attachment
11. Total funds requested for all equipment listed in the attached file Total Additional Equipment: D. Travel 1. Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions) 2. Foreign Travel Costs To E. Participant/Trainee Support Costs 1. Tuition/Fees/Health Insurance 2. Stipends	al Equipment Add A	Funds Requ 3,605.00 32,313.00 35,918.00	ested (\$)	View Attachment

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

RESEARCH & F	TELATED BUI	Dari - Scono	MIN, DODGET FEMODS	Next Period
* ORGANIZATIONAL DUNS: 1777990680000				
*Budget Type: Project Subawa	rd/Consortium			
Enter name of Organization: Replication All	ianite, înc.			
	* End Date:	Budget P	eriad 3	
F. Other Direct Costs			Funds Requested (\$)	
Materials and Supplies			7,250.00	
2. Publication Costs			2,600.00	
3. Consultant Services			2,000,00	
4. ADP/Computer Services				
5. Subawards/Consortium/Contractual Costs			213,238.00	
6. Equipment or Facility Rental/User Fees			213/230.00	
7. Alterations and Renovations				
8. Shipping and Communications		- 1	7,500.00	
9. Local Reimbursement			950.00	
10.				
	Total	Other Direct Cos	ata and and	
G. Direct Costs	Total Dire	ct Costs (A thru	Funds Requested (\$)	
G. Direct Costs H. Indirect Costs Indirect Cost Type	Total Direct Con	ct Costs (A thru st Indirect Cost Base (\$)	Contract of the second	
H. Indirect Costs Indirect Cost Type	Indirect Con Rate (%)	st Indirect Cost Base (\$)	* Funds Requested (\$)	
H. Indirect Costs Indirect Cost Type 1. EcoHealth Alliance F&A Rate	Indirect Co Rate (%)	st Indirect Cost Base (\$)	* Funds Requested (\$)	
H. Indirect Costs Indirect Cost Type 1. EcoHealth Alliance F&A Rate	Indirect Co Rate (%)	st Indirect Cost Base (\$)	* Funds Requested (\$)	
H. Indirect Costs Indirect Cost Type 1. EcoHealth Alliance F&A Rate 2. EcoHealth Alliance F&A Rate on 2	Indirect Co Rate (%)	st Indirect Cost Base (\$)	* Funds Requested (\$)	
H. Indirect Costs Indirect Cost Type 1. EcoHealth Alliance F&A Rate 2. EcoHealth Alliance F&A Rate on 2 3.	Indirect Cor Rate (%)	st Indirect Cost Base (\$)	*Funds Requested (\$) 133,418.00 22,050.00	
H. Indirect Costs Indirect Cost Type 1. EcoHealth Alliance F&A Rate 2. EcoHealth Alliance F&A Rate on 2 3.	Indirect Cor Rate (%)	st Indirect Cost Base (\$)	*Funds Requested (\$) 133,418.00 22,050.00	
H. Indirect Costs Indirect Cost Type 1. EcoHealth Alliance F&A Rate 2. EcoHealth Alliance F&A Rate on 2 3. 4.	Indirect Cor Rate (%)	st Indirect Cost Base (\$)	*Funds Requested (\$) 133,418.00 22,050.00	
H. Indirect Costs Indirect Cost Type 1. EcoHealth Alliance F&A Rate 2. EcoHealth Alliance F&A Rate on 2 3. 4. Cognizant Federal Agency	Indirect Cor Rate (%)	st Indirect Cost Base (\$)	*Funds Requested (\$) 133,418.00 22,050.00	
H. Indirect Costs Indirect Cost Type 1. EcoHealth Alliance F&A Rate 2. EcoHealth Alliance F&A Rate on 2 3. 4. Cognizant Federal Agency	Indirect Cor Rate (%)	st Indirect Cost Base (\$)	*Funds Requested (\$) 133,418.00 22,050.00	
H. Indirect Costs Indirect Cost Type 1. EcoHealth Alliance F&A Rate 2. EcoHealth Alliance F&A Rate on 2 3. 4. Cognizant Federal Agency (Agency Name, POC Name, and POC Phone Number)	Indirect Cor Rate (%)	st Indirect Cost Base (\$) 302,536,00 50,000.00 otal Indirect Cost	*Funds Requested (\$) 133,418.00 22,050.00 155,468.00	
H. Indirect Costs Indirect Cost Type 1. EcoHealth Alliance F&A Rate 2. EcoHealth Alliance F&A Rate on 2 3. 4. Cognizant Federal Agency (Agency Name, POC Name, and POC Phone Number) 1. Total Direct and Indirect Costs	Indirect Cor Rate (%)	st Indirect Cost Base (\$) 302,536,00 50,000.00 otal Indirect Cost	* Funds Requested (\$) 133,418.00 22,050.00 sts 155,468.00 Funds Requested (\$)	
H. Indirect Costs Indirect Cost Type 1. EcoHealth Alliance F&A Rate 2. EcoHealth Alliance F&A Rate on 2 3. 4. Cognizant Federal Agency (Agency Name, POC Name, and POC Phone Number) 1. Total Direct and Indirect Costs Total Direct and Indirect	Indirect Cor Rate (%)	st Indirect Cost Base (\$) 302,536,00 50,000.00 otal Indirect Cost	*Funds Requested (\$) 133,418.00	
H. Indirect Costs Indirect Cost Type 1. EcoHealth Alliance F&A Rate 2. EcoHealth Alliance F&A Rate on 2 3. 4. Cognizant Federal Agency (Agency Name, POC Name, and POC Phone Number) 1. Total Direct and Indirect Costs	Indirect Cor Rate (%)	st Indirect Cost Base (\$) 302,536,00 50,000.00 otal Indirect Cost	* Funds Requested (\$) 133,418.00 22,050.00 sts 155,468.00 Funds Requested (\$)	
H. Indirect Costs Indirect Cost Type 1. EcoHealth Alliance F&A Rate 2. EcoHealth Alliance F&A Rate on 2 3. 4. Cognizant Federal Agency (Agency Name, POC Name, and POC Phone Number) 1. Total Direct and Indirect Costs Total Direct and Indirect	Indirect Cor Rate (%)	st Indirect Cost Base (\$) 302,536,00 50,000.00 otal Indirect Cost	*Funds Requested (\$) 133,418.00	
H. Indirect Costs Indirect Cost Type 1. EcoHealth Alliance F&A Rate 2. EcoHealth Alliance F&A Rate on 2 3. 4. Cognizant Federal Agency (Agency Name, POC Name, and POC Phone Number) 1. Total Direct and Indirect Costs Total Direct and Indirect	Indirect Cor Rate (%)	st Indirect Cost Base (\$) 302,536,00 50,000.00 otal Indirect Cost	*Funds Requested (\$) 133,418.00	
H. Indirect Costs Indirect Cost Type 1. EcoHealth Alliance F&A Rate 2. EcoHealth Alliance F&A Rate on 2 3. 4. Cognizant Federal Agency (Agency Name, POC Name, and POC Phone Number) 1. Total Direct and Indirect Costs Total Direct and Indirect J. Fee K. * Budget Justification 1239-EHA NIAID CO	Indirect Cor Rate (%) 44.10 Sub 44.10 To	st Indirect Cost Base (\$) 302,536.00 50,000.00 otal Indirect Cost	*Funds Requested (\$) 133,418.00 22,050.00 sts 155,468.00 Funds Requested (\$) 671,242.00	nt View Attachment

vious Pe	eriod	-	HESEAHOI	TO HELLA	ED BUDGET - SECTI	Oli A G D, DO	DULL	LINOL				
DRGANIZA	ATIONAL DUNS											
	rpe: Project		rd/Consortium									
iter name	of Organization	n: EcoHealth All	liance, Inc.									
elete En	ntry * Start	Date: 10/01/2018	* End Date: 09/	30/2017 B	udget Period 4							
enior/Key		Ordata Nasa		C. 40.	* Division Paris	no building	Cal.		Sum.	* Requested	* Fringe	ensa estati
	* First Name	Middle Name	* Last Name	Suffix	* Project Role	Base Salary (\$)	Months	Months	Months	Salary (\$)	Benefits (\$)	Funds Request (b) (4),
	eter		Daszak		PD/PI		1					
	Jonathan	H.	Epstein		Senior/Key Personne	1	1					
	Kevin	[a.	Olival		Senior/Key Personne	15						
. P	arviez	R.	Hosseini		Senior/Key Personna	1						
						1						
		1	1			1						
					11	1						
	s requested for a	all Senior Key Pers	Sons in the attache	ed file	Add Attachment	Damin Anne	hmant	View	Attrichme	-	nior/Key Person	116,925.00
dditional :	Senior Key Per		 sons in the attache	ed file	Add Attachment	Down Arms	drimpant	View	Attrichme	-	nior/Key Person	116,925.00
dditional :	Senior Key Per		ons in the attache	ed file	Add Attachment	Danin Anne	cal.	View Acad.		inte		116,925.00
dditional :	Senior Key Persersonnel			ed file		Damin-Ayne	Cal.		Sum.	* Requested	* Fringe	
dditional : . Other Pe * Numb	Senior Key Pers ersonnel per of nnel					Damin Anne	Cal.	Acad.	Sum.	*Requested	* Fringe	
dditional : . Other Pe * Numb	Senior Key Persersonnel per of nnel Post D	sons:				Damin-Aires	Cal.	Acad.	Sum.	*Requested	* Fringe	
dditional : . Other Pe * Numb	Senior Key Persersonnel per of nnel Post D Gradu	sons:				Damin Anne	Cal.	Acad.	Sum.	* Requested	* Fringe	* Funds Request
dditional : . Other Pe * Numb	Senior Key Persersonnel per of nnel Post D Gradu Under	sons: Doctoral Associates ate Students				Damin-Aires	Cal.	Acad.	Sum.	* Requested	* Fringe	* Funds Request
dditional : . Other Pe * Numb	Senior Key Persersonnel per of nnel Post D Gradu Under	sons: Doctoral Associates ate Students graduate Students				Damin Anne	Cal.	Acad.	Sum.	* Requested	* Fringe	
dditional : . Other Pe * Numb	Senior Key Persersonnel per of nnel Post D Gradu Under	Sons: Doctoral Associates ate Students graduate Students tarial/Clerical				Damin-Alpha	Cal.	Acad.	Sum.	* Requested	* Fringe	* Funds Request
dditional : . Other Pe * Numb	Senior Key Persersonnel per of nnel Post D Gradu Under	octoral Associates ate Students graduate Students tarial/Clerical				Damin Anne	Cal.	Acad.	Sum.	* Requested	* Fringe	* Funds Request
dditional : . Other Pe * Numb	Senior Key Persersonnel per of nnel Post D Gradu Under	octoral Associates ate Students graduate Students tarial/Clerical				Down Alms	Cal.	Acad.	Sum.	* Requested	* Fringe	* Funds Request
dditional : . Other Pe * Numb	Senior Key Persersonnel per of nnel Post D Gradu Under	octoral Associates ate Students graduate Students tarial/Clerical				Damin Anna	Cal.	Acad.	Sum.	* Requested	* Fringe	* Funds Reques
dditional : . Other Pe * Numb	Senior Key Persersonnel per of onnel Post D Gradu Unders Secret Resea	octoral Associates ate Students graduate Students tarial/Clerical				Damin Attno	Cal.	Acad.	Sum.	*Requested Salary (\$)	* Fringe	(b) (4). (b)

	TION C, D, & E, B	DOLL I LINOD	
ORGANIZATIONAL DUNS: [147/19/01/6/00/00			
* Budget Type: Project Subaward/Consortium			
Enter name of Organization: ENSEELL Allbance Inc.			
Delete Entry Start Date: 10/01/19616 End Date: 35/30/2007 But	dget Period 4		
C. Equipment Description			
List items and dollar amount for each item exceeding \$5,000			
Equipment item	* Funds Red	quested (\$)	
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10. 11. Total funds requested for all equipment listed in the attached file	uipment		
10. 11. Total funds requested for all equipment listed in the attached file	uipment Add Attachment	Delsia Atranhmant	View Attachment
10. 11. Total funds requested for all equipment listed in the attached file Total Eq			View Attachment
10. 11. Total funds requested for all equipment listed in the attached file Total Eq Additional Equipment:	Add Attachment Funds Req	uested (\$)	View Attachment
10. 11. Total funds requested for all equipment listed in the attached file Total Eq Additional Equipment: D. Travel	Add Attachment Funds Req 3,605.00	uested (\$)	View Attachment
10. 11. Total funds requested for all equipment listed in the attached file Total Eq Additional Equipment: D. Travel 1. Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions) 2. Foreign Travel Costs	Add Attachment Funds Req	uested (\$)	View Attachment
10. 11. Total funds requested for all equipment listed in the attached file Total Eq Additional Equipment: D. Travel 1. Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions) 2. Foreign Travel Costs	Add Attachment Funds Req 3,605.00 32,313.0	uested (\$)	View Attachment
10. 11. Total funds requested for all equipment listed in the attached file Total Eq Additional Equipment: D. Travel 1. Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions) 2. Foreign Travel Costs Total Tr	Add Attachment Funds Req 3,605.00 32,313.0 ravel Cost 35,918.0	uested (\$)	View Attachment
10. 11. Total funds requested for all equipment listed in the attached file Total Eq Additional Equipment: D. Travel 1. Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions) 2. Foreign Travel Costs Total Tr	Add Attachment Funds Req 3,605.00 32,313.0 ravel Cost 35,918.0	uested (\$)	View Attachment
10. 11. Total funds requested for all equipment listed in the attached file Total Eq Additional Equipment: D. Travel 1. Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions) 2. Foreign Travel Costs Total Tr E. Participant/Trainee Support Costs 1. Tuition/Fees/Health Insurance	Add Attachment Funds Req 3,605.00 32,313.0 ravel Cost 35,918.0	uested (\$)	View Attachment
10. 11. Total funds requested for all equipment listed in the attached file Total Eq Additional Equipment: D. Travel 1. Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions) 2. Foreign Travel Costs Total Tr E. Participant/Trainee Support Costs 1. Tuition/Fees/Health Insurance 2. Stipends	Add Attachment Funds Req 3,605.00 32,313.0 ravel Cost 35,918.0	uested (\$)	View Attachment

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

* ORGANIZATIONAL DUNS: [7779900680000		DULI - SECTION	N F-K, BUDGET PERIOD 4	Next Period
*Budget Type: Project Subaward/C	Consortium			
Enter name of Organization: Replication Allian	nce, Inc.			
	nd Date:	Budget P	eriad 4	
F. Other Direct Costs			Funds Requested (\$)	
Materials and Supplies			7,000.00	
2. Publication Costs			2,600.00	
3. Consultant Services			2,000.00	
4. ADP/Computer Services				
5. Subawards/Consortium/Contractual Costs			201,422.00	
6. Equipment or Facility Rental/User Fees			2017 822.00	
7. Alterations and Renovations				
8. Shipping & Communications		- 1	6,250.00	
9. Local Reimbursement			950,00	
10.				
	Total	Other Direct Cos	nto [040, 000, 00	
	Total Dire	ct Costs (A thru	Funds Requested (\$)	
H. Indirect Costs Indirect Cost Type	Total Dire	ct Costs (A thru st Indirect Cost Base (\$)		
Indirect Cost Type	Indirect Co Rate (%)	st Indirect Cost Base (\$)	F) 514, 873.00 * Funds Requested (\$)	
Indirect Cost Type 1. EcoHealth Alliance F&A	Indirect Co	st Indirect Cost Base (\$)	*Funds Requested (\$)	
Indirect Cost Type 1. EcoHealth Alliance F&A	Indirect Co Rate (%)	st Indirect Cost Base (\$)	F) 514, 873.00 * Funds Requested (\$)	
Indirect Cost Type 1. ScoHealth Alliance F&A 2. ScoHealth Alliance F&A on 2 Subawar	Indirect Co Rate (%)	st Indirect Cost Base (\$)	*Funds Requested (\$)	
Indirect Cost Type 1. EcoHealth Alliance F&A 2. EcoHealth Alliance F&A on 2 Subawar 3.	Indirect Co Rate (%)	st Indirect Cost Base (\$)	*Funds Requested (\$) 136,232.00 22,050.00	
Indirect Cost Type 1. EcoHealth Alliance F&A 2. EcoHealth Alliance F&A on 2 Subawar 3.	Indirect Co Rate (%)	st Indirect Cost Base (\$)	*Funds Requested (\$) 136,232.00 22,050.00	
Indirect Cost Type 1. EcoHealth Alliance F&A 2. EcoHealth Alliance F&A on 2 Subawar 3. 4.	Indirect Co Rate (%)	st Indirect Cost Base (\$)	*Funds Requested (\$) 136,232.00 22,050.00	
Indirect Cost Type 1. EcoHealth Alliance F&A 2. EcoHealth Alliance F&A on 2 Subawar 3. 4. Cognizant Federal Agency	Indirect Co Rate (%)	st Indirect Cost Base (\$)	*Funds Requested (\$) 136,232.00 22,050.00	
Indirect Cost Type 1. EcoHealth Alliance F&A 2. EcoHealth Alliance F&A on 2 Subawar 3. 4. Cognizant Federal Agency	Indirect Co Rate (%)	st Indirect Cost Base (\$)	*Funds Requested (\$) 136,232.00 22,050.00	
Indirect Cost Type 1. EcoHealth Alliance F&A 2. EcoHealth Alliance F&A on 2 Subawar 3. 4. Cognizant Federal Agency (Agency Name, POC Name, and POC Phone Number)	Indirect Cor Rate (%)	st Indirect Cost Base (\$) 313,452.00 50,000.00 otal Indirect Cost	*Funds Requested (\$) 136,232.00 22,050.00 160,282.00	
Indirect Cost Type 1. EcoHealth Alliance F&A 2. EcoHealth Alliance F&A on 2 Subawar 3. 4. Cognizant Federal Agency (Agency Name, POC Name, and POC Phone Number) 1. Total Direct and Indirect Costs	Indirect Cor Rate (%)	st Indirect Cost Base (\$) 313,452.00 50,000.00 otal Indirect Cost	*Funds Requested (\$) 138,232.00 22,050.00 sts 160,282.00 Funds Requested (\$)	
Indirect Cost Type 1. EcoHealth Alliance F&A 2. EcoHealth Alliance F&A on 2 Subawar 3. 4. Cognizant Federal Agency (Agency Name, POC Name, and POC Phone Number) 1. Total Direct and Indirect Costs Total Direct and Indirect In	Indirect Cor Rate (%)	st Indirect Cost Base (\$) 313,452.00 50,000.00 otal Indirect Cost	*Funds Requested (\$) 136,232.00 22,056.00 sts 160,282.00 Funds Requested (\$) 675,155.00	
Indirect Cost Type 1. EcoHealth Alliance F&A 2. EcoHealth Alliance F&A on 2 Subawar 3. 4. Cognizant Federal Agency (Agency Name, POC Name, and POC Phone Number) 1. Total Direct and Indirect Costs	Indirect Cor Rate (%)	st Indirect Cost Base (\$) 313,452.00 50,000.00 otal Indirect Cost	*Funds Requested (\$) 138,232.00 22,050.00 sts 160,282.00 Funds Requested (\$)	
Indirect Cost Type 1. EcoHealth Alliance F&A 2. EcoHealth Alliance F&A on 2 Subawar 3. 4. Cognizant Federal Agency (Agency Name, POC Name, and POC Phone Number) 1. Total Direct and Indirect Costs Total Direct and Indirect In	Indirect Cor Rate (%)	st Indirect Cost Base (\$) 313,452.00 50,000.00 otal Indirect Cost	*Funds Requested (\$) 136,232.00 22,056.00 sts 160,282.00 Funds Requested (\$) 675,155.00	
Indirect Cost Type 1. EcoHealth Alliance F&A 2. EcoHealth Alliance F&A on 2 Subawar 3. 4. Cognizant Federal Agency (Agency Name, POC Name, and POC Phone Number) 1. Total Direct and Indirect Costs Total Direct and Indirect In	Indirect Cor Rate (%)	st Indirect Cost Base (\$) 313,452.00 50,000.00 otal Indirect Cost	*Funds Requested (\$) 136,232.00 22,056.00 sts 160,282.00 Funds Requested (\$) 675,155.00	
Indirect Cost Type 1. EcoHealth Alliance F&A 2. EcoHealth Alliance F&A on 2 Subawar 3. 4. Cognizant Federal Agency (Agency Name, POC Name, and POC Phone Number) 1. Total Direct and Indirect Costs Total Direct and Indirect In	Indirect CorRate (%) 44.10 44.10 Total Stitutional Corrections of the stitutional Correction of the stitution of the stitutional Correction of the stitution of the st	st Indirect Cost Base (\$) 313,452.00 50,000.00 otal Indirect Cost	*Funds Requested (\$) 136,232.00 22,056.00 sts 160,282.00 Funds Requested (\$) 675,155.00	t View Attachment

	Period	. Consume and an	44.00	& RELAT	ED BUDGET - SECTI	ON A & B, BU	DGET	PERIO	D 5			
	NIZATIONAL DUNS											
	t Type: Project	the second second	rd/Consortium	-								
-	me of Organization											
Delete	Entry * Start I	Date: 10/01/2013	7 * End Date: 09/3	0/2018 E	Sudget Period 5							
Senior	Key Person											
Prefix	* First Name	Middle Name	* Last Name	Suffix	* Project Role	Base Salary (\$)	Cal.		Sum. s Months	* Requested Salary (\$)	* Fringe Benefits (\$)	* Funds Requested
	Peter	1	Daszak		PD/PI	Dado Jaiary (4)	Months	MOTILIT	3 MOTHERS	Guidi y (φ)	Deficites (4)	(b) (4), (b)
Dr.	Jonathan	н.	Epstein		Senior/Key Personne							
	Kevin	0:-	Olival	i –	Senior/Key Personns	1						
	Parviez	R.	Hosseiní		Senior/Key Personns	1						
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	Gradu	ate Students		Project Rol	e							* Funds Requested
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	Gradu Under	ate Students graduate Students arial/Clerical		Project Rol	e							* Funds Requested
1	Gradu Under Secret	ate Students graduate Students arial/Clerical		Project Rol	ė.							
1	Gradu Under Secret	ate Students graduate Students arial/Clerical		Project Rol	e)							
1	Gradu Under Secret	ate Students graduate Students arial/Clerical		Project Rol	ė.							
<u>i</u>	Gradu Under Secret	ate Students graduate Students arial/Clerical		Project Rol	e							
i I	Gradu Underes Secret Resea	ate Students graduate Students arial/Clerical arch Scientist		Project Rol	e					s Salary (\$)	Benefits (\$)	
	Gradu Underes Secret Resea	ate Students graduate Students arial/Clerical		Project Rol	e		Months	Month	s Month	Total	Benefits (\$)	(b) (4), (b) (6)

		DGET PERIOD 5	
ORGANIZATIONAL DUNS: 0778900660000			
Budget Type: Project Subaward/Consortium			
Enter name of Organization: Enter Fill Bauce Tire.			
Delete Entry *Start Date: 10.701.43617 * End Date: 199./307.2018 Bud	iget Perlad 5		
C. Equipment Description			
List items and dollar amount for each item exceeding \$5,000			
Equipment item	* Funds Reg	uested (\$)	
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Total funds requested for all equipment listed in the attached file Total Equ	uipment		
11. Total funds requested for all equipment listed in the attached file	Add Attachment	Delare Atrenhment	View Attachment
Total funds requested for all equipment listed in the attached file Total Equ			View Attachment
11. Total funds requested for all equipment listed in the attached file Total Equ Additional Equipment:	Add Attachment Funds Requ		View Attachment
11. Total funds requested for all equipment listed in the attached file Total Equipment: D. Travel	Add Attachment Funds Required 3, 605.00	uested (\$)	View Attachment
11. Total funds requested for all equipment listed in the attached file Total Equ Additional Equipment: D. Travel 1. Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions) 2. Foreign Travel Costs	Add Attachment Funds Required 3, 605.00 32,313.00	uested (\$)	View Attachment
11. Total funds requested for all equipment listed in the attached file Total Equ Additional Equipment: D. Travel 1. Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions) 2. Foreign Travel Costs	Add Attachment Funds Requirement 3,605.00 32,313.00	uested (\$)	View Attachment
11. Total funds requested for all equipment listed in the attached file Total Equ Additional Equipment: D. Travel 1. Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions) 2. Foreign Travel Costs Total Tr	Add Attachment Funds Required 3, 605.00 32,313.00	uested (\$)	View Attachment
11. Total funds requested for all equipment listed in the attached file Total Equ Additional Equipment: D. Travel 1. Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions) 2. Foreign Travel Costs Total Tr	Add Attachment Funds Requ 3,605.00 32,313.00 avel Cost 35,918.00	uested (\$)	View Attachment
11. Total funds requested for all equipment listed in the attached file Total Equ Additional Equipment: D. Travel 1. Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions) 2. Foreign Travel Costs Total Tr	Add Attachment Funds Requ 3,605.00 32,313.00 avel Cost 35,918.00	uested (\$)	View Attachment
11. Total funds requested for all equipment listed in the attached file Total Equ Additional Equipment: D. Travel 1. Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions) 2. Foreign Travel Costs Total Tr E. Participant/Trainee Support Costs 1. Tuition/Fees/Health Insurance	Add Attachment Funds Requ 3,605.00 32,313.00 avel Cost 35,918.00	uested (\$)	View Attachment
11. Total funds requested for all equipment listed in the attached file Total Equ Additional Equipment: D. Travel 1. Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions) 2. Foreign Travel Costs Total Tr E. Participant/Trainee Support Costs 1. Tuition/Fees/Health Insurance 2. Stipends	Add Attachment Funds Requ 3,605.00 32,313.00 avel Cost 35,918.00	uested (\$)	View Attachment

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

RESEARCH & RE	LATED BUD	GET - SECTION I	F-K, BUDGET PERIOD 5	
* ORGANIZATIONAL DUNS: [TTTT9: U 6600 U D				
*Budget Type: Project Subaward/0	Jonsarlium			
Enter name of Organization: Rophealth Allian	ider Ido.			
Delete Entry Start Date: [* E		Budget Perio	ad 5	
			entoet.mateur	
F. Other Direct Costs			Funds Requested (\$)	
Materials and Supplies			3,500.00	
2. Publication Costs			2,600,00	
3. Consultant Services				
4. ADP/Computer Services				
5. Subawards/Consortium/Contractual Costs			191,576.00	
6. Equipment or Facility Rental/User Fees				
7. Alterations and Renovations				
8. Shipping & Communications			6,250.00	
9. Local Reimbursement			550,00	
10.				
	Total C	Other Direct Costs	204.476.00	
H. Indirect Costs Indirect Cost Type	Indirect Cos Rate (%)	t Indirect Cost Base (\$)	* Funds Requested (\$)	
1. ScoHealth Alliance F&A	44.10	322,588.00	142,262.00	
2. EcoHealth Alliance F&A on 2 Subawar	44.10	50,000.00	22,050.00	
3.				
4.				
	To	otal Indirect Costs	164,312.00	
Cognizant Federal Agency		21-40-21-40-21-00-00-00-00-00-00-00-00-00-00-00-00-00		
(Agency Name, POC Name, and POC Phone Number)				
A Section (Continued and Continued and Continued Continu				
I. Total Direct and Indirect Costs			Funds Requested (\$)	
Total Direct and Indirect In	stitutional Co	sts (G + H)		
			678,477.00	
J. Fee			Funds Requested (\$)	

(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 (6) (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 ($$333 \times 3$ months x 3 provinces = \$3,000 per year) from provincial areas to Wuhan Institute of Virology. We also will support the technician's allowable room/transportation/food costs expected to average monthly at food (\$62), room (\$100), and transportation (\$100): $$262 \times 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 (6) (4), (6) (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 institutional discretionary funds.
- b) Other personnel: A full time field biologist, Dr. GuanJian Zhu (6) (4) (6) (6) per year), will implement field site visits, sample collection, and sample shipment to Wuhan or to Co-Pls. A full time field technician, Mr. Junpeng Zhang (6) (4) (6) (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 = 15x2= 30; Internet = 5x2 = 10, GPS (batteries) = 3.5x2 = 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 (= 250x4x2 = \$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) 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 \$3,000each. 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	s (\$)
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		

Cumulative Budget

Page 67

RESEARCH & RELATED BUDGET - SECTION A & B, BUDGET PERIOD 1

* ORGANIZATIONAL DUNS: 5290274740000

*Budget Type: O Project • Subaward/Consortium

Enter name of Organization: Wuhan Institute of Virology

A.	Senior/	Cey 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. Dr.	Zhengli Xingyi		Shi Ge		Co-Investigator Senior Research Technician							(b) (4), (b) (6
To	al Fund	s Requested fo	r all Senior Key Pe	ersons in the attached file									
Ac	ditional	Senior Key Per	rsons:	File Name:			Mime Type:				Total Seni	or/Key Person	(b) (4), (b)

0.01			
B. Other Pe	ersonnel		
* Number	of	* Project Role	Cal. Acad. Sum. *Requested *Fringe *Funds Requested
Personne	el .		Months Months Salary (\$) Benefits (\$)
'n	Post Doctoral Associates Graduate Students Undergraduate Students Secretarial/Clerical Laboratory Technician 100		(b) (4), (b) (
1	Total Number Other Personnel		Total Other Personnel (b) (4)_0

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

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 1

* ORGANIZATIONAL DUNS: 5290274740000

* Budget Type: O 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

* Funds Requested (\$) **Equipment Item**

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)

Total Travel Cost 2,060.00

2. Foreign Travel Costs

E. Participant/Trainee Support Costs

Funds Requested (\$)

2,060.00

- 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)

Subaward 1 Tracking Number: GRANT11418584 Page 69

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

* ORGANIZATIONAL DUNS: 5290274740000

* Budget Type: O Project • Subaward/Consortium

Enter name of Organization: Wuhan Institute of Virology

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 Mime Type: application/pdf

JUSTIFICATION.pdf (Only attach one file.)

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

Tracking Number: GRANT11418584 Subaward 1 Page 70 OMB Number: 4040-0001 Expiration Date: 06/30/2011

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

* ORGANIZATIONAL DUNS: 5290274740000

*Budget Type: O Project • Subaward/Consortium

Enter name of Organization: Wuhan Institute of Virology

A. 5	enior/k	(ey Person											
Ü	refix	* First Name	Middle Name	* Last Name	Suffix	* Project Role	Base Salary (\$)	Cal. Months	Acad. Months	Sum. Months	* Requested Salary (\$)	* Fringe Benefits (\$)	
1.	Dr. Dr.	Zhengli Xingyi		Shi Ge		Co-Investigator Senior Research Technician							(b) (4). (b) (6
Tot	I Fund	s Requested fo	r all Senior Key Pe	rsons in the attached file									
Ad	itional	Senior Key Per	sons:	File Name:			Mime Type:				Total Sen	ior/Key Perso	(b) (4), (b)

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

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

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 2

* ORGANIZATIONAL DUNS: 5290274740000

* Budget Type: O 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

* Funds Requested (\$) **Equipment Item**

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)

Total Travel Cost 2,060.00

2. Foreign Travel Costs

E. Participant/Trainee Support Costs

Funds Requested (\$)

2,060.00

- 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)

Subaward 1 Tracking Number: GRANT11418584 Page 72

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

* ORGANIZATIONAL DUNS: 5290274740000

* Budget Type: O 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 * Funds Requested (\$) Indirect Cost Rate (%) Indirect Cost Base (\$)

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 Mime Type: application/pdf

> JUSTIFICATION.pdf (Only attach one file.)

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

OMB Number: 4040-0001 Subaward 1 Page 73 Tracking Number: GRANT11418584 Expiration Date: 06/30/2011

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

* ORGANIZATIONAL DUNS: 5290274740000

*Budget Type: O Project • Subaward/Consortium

Enter name of Organization: Wuhan Institute of Virology

A. 5	Senior/	Cey Person											
O	Prefix	* First Name	Middle Name	* Last Name	Suffix	* Project Role	Base Salary	Cal.	Acad.	Sum.	* Requested	* Fringe	* Funds Requested (\$)
							(\$)	Months	Months	Months	Salary (\$)	Benefits (\$)	
1,	Dr.	Zhengli		Shi		Co-Investigator							(b) (4), (b) (6
2.	Dr.	Xingyi		Ge		Senior Research Technnician							
Tot	tal Fund	Is Requested fo	or all Senior Key Pe	rsons in the attached file									
Ad	ditional	Senior Key Pe	rsons:	File Name:			Mime Type:				Total Seni	or/Key Person	(b) (4), (b)

A 40 4		
B. Other Personnel		
* Number of	* Project Role	Cal. Acad. Sum. *Requested *Fringe *Funds Requested
Personnel		Months Months Salary (\$) Benefits (\$)
Post Doctoral A Graduate Stude Undergraduate Secretarial/Cler 1 Laboratory Tec	ents Students ical	(b) (4) ₋ (b)
1 Total Number	Other Personnel	Total Other Personnel (b) (4). Total Salary, Wages and Fringe Benefits (A+B)

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

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 3

* ORGANIZATIONAL DUNS: 5290274740000

* Budget Type: O Project Subaward/Consortium Enter name of Organization: Wuhan Institute of Virology

> * Start Date: 10-01-2015 **Budget Period: 3** * End Date: 09-30-2016

C. Equipment Description

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

* Funds Requested (\$) **Equipment Item**

Total funds requested for all equipment listed in the attached file

Total Equipment

Total Travel Cost

Additional Equipment: File Name: Mime Type:

D. Travel Funds Requested (\$)

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

2,060.00

2,060.00

Funds Requested (\$)

2. Foreign Travel Costs

1. Tuition/Fees/Health Insurance

E. Participant/Trainee Support Costs

2. Stipends

3. Travel

4. Subsistence

5. Other:

Number of Participants/Trainees **Total Participant/Trainee Support Costs**

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

Subaward 1 OMB Number: 4040-0001 Tracking Number: GRANT11418584 Page 75 Expiration Date: 06/30/2011

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

* ORGANIZATIONAL DUNS: 5290274740000

* Budget Type: O Project • Subaward/Consortium

Enter name of Organization: Wuhan Institute of Virology

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 Mime Type: application/pdf

JUSTIFICATION.pdf (Only attach one file.)

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

Tracking Number: GRANT11418584 Subaward 1 Page 76 OMB Number: 4040-0001 Expiration Date: 06/30/2011

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

* ORGANIZATIONAL DUNS: 5290274740000

*Budget Type: O Project • Subaward/Consortium

Enter name of Organization: Wuhan Institute of Virology

A. Senior/k	Cey 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. 2. Dr.	Zhengli Xingyi	Shi Ge		Co-Investigator Senior Research Technician							(b) (4), (b) (6
Total Fund	s Requested for all Senior Key Pe	rsons in the attached file									-
Additional	Senior Key Persons:	File Name:			Mime Type:				Total Seni	or/Key Persor	(b) (4), (b) (6)
* Number of		* Project Rol	е			Cal.	Acad.		* Requested		* Funds Requested
B. Other Personnel * Number of Personnel Post Doctoral Associates		* Project Rol	é					Sum. Months	The state of the	* Fringe Benefits	* Funds Requested (\$)
Ť	Graduate Students Undergraduate Students Secretarial/Clerical Laboratory Technician										(b) (4), (b) (6
1	Total Number Other Personne	i,						. 100		ther Personne	(6
							Total Sal	ary, Wag	es and Fringe	Benefits (A+B)

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

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 4

* ORGANIZATIONAL DUNS: 5290274740000

* Budget Type: O Project Subaward/Consortium Enter name of Organization: Wuhan Institute of Virology

> * Start Date: 10-01-2016 **Budget Period: 4** * End Date: 09-30-2017

C. Equipment Description

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

* Funds Requested (\$) **Equipment Item**

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)

Total Travel Cost 2,060.00

2. Foreign Travel Costs

E. Participant/Trainee Support Costs

Funds Requested (\$)

2,060.00

- 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)

Subaward 1 Tracking Number: GRANT11418584 Page 78

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

* ORGANIZATIONAL DUNS: 5290274740000

* Budget Type: O Project • Subaward/Consortium

Enter name of Organization: Wuhan Institute of Virology

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 Mime Type: application/pdf

JUSTIFICATION.pdf (Only attach one file.)

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

Tracking Number: GRANT11418584 Subaward 1 Page 79 OMB Number: 4040-0001 Expiration Date: 06/30/2011

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

* ORGANIZATIONAL DUNS: 5290274740000

*Budget Type: O Project • Subaward/Consortium

Enter name of Organization: Wuhan Institute of Virology

				o. To di Lair		00 00 2010		T Onto a	7			
Senior/	Key Person											
refix	* First Name	Middle Name	* Last Name	Suffix	* Project Role	Base Salary	Cal.	Acad.	Sum.	* Requested	* Fringe	* Funds Requested (\$
						(\$)	Months	Months	Months	Salary (\$)	Benefits (\$)	
Dr.	Zhengli		Shi		Co-Investigator							(b) (4), (b) (6
Dr.	Xingyi		Ge		Senior Research Technician							
al Fund	ds Requested fo	or all Senior Key Pe	ersons in the attached file									
Additional Senior Key Persons:		File Name:	File Name:		Mime Type:	Total Senior/Key Po			ior/Key Persor	(b) (4), (b) (6		
	Dr. Dr. Dr.	Dr. Zhengli Dr. Xingyi al Funds Requested fo	Prefix First Name Middle Name Dr. Zhengli Dr. Xingyi al Funds Requested for all Senior Key Pe	Prefix * First Name Middle Name * Last Name Dr. Zhengli Shi Dr. Xingyi Ge al Funds Requested for all Senior Key Persons in the attached file	Prefix * First Name Middle Name * Last Name Suffix Dr. Zhengli Shi Dr. Xingyi Ge al Funds Requested for all Senior Key Persons in the attached file	Prefix * First Name Middle Name * Last Name Suffix * Project Role Dr. Zhengli Shi Co-Investigator Dr. Xingyi Ge Senior Research Technician al Funds Requested for all Senior Key Persons in the attached file	Prefix *First Name Middle Name *Last Name Suffix *Project Role Base Salary (\$) Dr. Zhengli Shi Co-Investigator Dr. Xingyi Ge Senior Research Technician al Funds Requested for all Senior Key Persons in the attached file	Senior/Key Person Prefix * First Name Middle Name * Last Name Suffix * Project Role Base Salary Cal. (\$) Months Dr. Zhengli Shi Co-Investigator Dr. Xingyi Ge Senior Research Technician al Funds Requested for all Senior Key Persons in the attached file	Senior/Key Person Prefix * First Name Middle Name * Last Name Suffix * Project Role Base Salary Cal. Acad. (\$) Months Months Dr. Zhengli Shi Co-Investigator Dr. Xingyi Ge Senior Research Technician al Funds Requested for all Senior Key Persons in the attached file	Senior/Key Person Prefix * First Name Middle Name * Last Name Suffix * Project Role Base Salary Cal. Acad. Sum. (\$) Months Months Months Dr. Zhengli Shi Co-Investigator Dr. Xingyi Ge Senior Research Technician al Funds Requested for all Senior Key Persons in the attached file	Senior/Key Person Prefix * First Name Middle Name * Last Name Suffix * Project Role Base Salary Cal. Acad. Sum. * Requested (\$) Months Months Months Salary (\$) Dr. Zhengli Shi Co-Investigator Dr. Xingyi Ge Senior Research Technician al Funds Requested for all Senior Key Persons in the attached file	Senior/Key Person Prefix * First Name Middle Name * Last Name Suffix * Project Role Base Salary Cal. Acad. Sum. * Requested * Fringe (\$) Months Months Months Salary (\$) Benefits (\$). Dr. Zhengli Shi Co-Investigator Dr. Xingyi Ge Senior Research Technician al Funds Requested for all Senior Key Persons in the attached file

B. Other Pe	ersonnel		THE STREET, NOT A STREET OF THE PARTY				
* Number	of	* Project Role	Cal. Acad. Sum. *Requested *Fringe *Funds Requested				
Personne	el		Months Months Salary (\$) Benefits (\$)				
ar.	Post Doctoral Associates Graduate Students Undergraduate Students Secretarial/Clerical Laboratory Technician Total Number Other Personnel		(b) (4), (b				
1			Total Other Personnel (b) (4), (b) Total Salary, Wages and Fringe Benefits (A+B)				

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

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 5

* ORGANIZATIONAL DUNS: 5290274740000

* Budget Type: O Project • Subaward/Consortium

Enter name of Organization: Wuhan Institute of Virology

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)

Total Travel Cost 2.060.00

2. Foreign Travel Costs

E. Participant/Trainee Support Costs

Funds Requested (\$)

2,060.00

- 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)

Tracking Number: GRANT11418584 Subaward 1 Page 81 OMB Number: 4040-0001 Expiration Date: 06/30/2011

RESEARCH & RELATED BUDGET - SECTIONS F-K, BUDGET PERIOD 5

* ORGANIZATIONAL DUNS: 5290274740000

* Budget Type: O 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 * Funds Requested (\$) Indirect Cost Rate (%) Indirect Cost Base (\$)

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

Funds Requested (\$) J. Fee

K. * Budget Justification File Name: 1242-WIV NIAID COV BUDGET Mime Type: application/pdf

> JUSTIFICATION.pdf (Only attach one file.)

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

OMB Number: 4040-0001 Subaward 1 Page 82 Tracking Number: GRANT11418584

Expiration Date: 06/30/2011

Section J, Fee

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

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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: O Project • Subaward/Consortium

Enter name of Organization: East China Normal University

A. S	enior/k	(ey Person		July 2010	10 01 2010	Life bate. 9	2 50 2515	- uugu	· citoui				
	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. 2.	Dr. Dr.	Shuyi Guangjian		Zhang Zhu		Co-Investigator Research Techni- cian					980	- "	(b) (4), (b) (6
000		ls Requested fo Senior Key Per		rsons in the attached file File Name:			Mime Type:				Total Sen	ior/Key Persor	(b) (4), (b) (t

B. Other Per	rsonnel		
* Number o	of	* Project Role	Cal. Acad. Sum. * Requested * Fringe * Funds Requested
Personnel			Months Months Salary (\$) Benefits (\$)
	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

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)

Total Travel Cost 2,700.00

2. Foreign Travel Costs

E. Participant/Trainee Support Costs

Funds Requested (\$)

2,700.00

- 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)

Tracking Number: GRANT11418584 Subaward 2 Page 87 OMB Number: 4040-0001 Expiration Date: 06/30/2011

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

* ORGANIZATIONAL DUNS: 4209454950000

* Budget Type: O 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
- 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 (\$)

87,100.00 Total Direct Costs (A thru F)

H. Indirect Costs

Indirect Cost Type

Indirect Cost Rate (%)

Indirect Cost Base (\$)

* Funds Requested (\$)

1. East China Normal University F&A Rate

87,100.00 8.00

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

Mime Type: application/pdf

JUSTIFICATION.pdf

(Only attach one file.)

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

Subaward 2 Tracking Number: GRANT11418584 Page 88

OMB Number: 4040-0001 Expiration Date: 06/30/2011

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

* ORGANIZATIONAL DUNS: 4209454950000

*Budget Type: O Project • Subaward/Consortium

Enter name of Organization: East China Normal University

A. Senior/	Cey Person											
Prefix	* First Name	Middle Name	* Last Name	Suffix	* Project Role	Base Salary (\$)	Cal. Months	Acad. Months	Sum. Months	* Requested Salary (\$)	* Fringe Benefits (\$)	
1. Dr. 2. Dr.	Shuyi Guangjian		Zhang Zhu		Co-Investigator Research Techni- cian							(ъ) (4), (ъ) (6
	Is Requested for Senior Key Pe	Name of the same o	rsons in the attached file			Mime Type:				21/0/20	ior/Key Perso	(b) (4), (b) (6

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

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

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 2

* ORGANIZATIONAL DUNS: 4209454950000

* Budget Type: O 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

* Funds Requested (\$) **Equipment Item**

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)

Total Travel Cost 2,700.00

2. Foreign Travel Costs

E. Participant/Trainee Support Costs

Funds Requested (\$)

2,700.00

- 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)

Subaward 2 Tracking Number: GRANT11418584 Page 90

OMB Number: 4040-0001 Expiration Date: 06/30/2011

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

F. Other Direct Costs

Funds Requested (\$)

1. Materials and Supplies

2. Publication Costs

3. Consultant Services

4. ADP/Computer Services

Subawards/Consortium/Contractual Costs

6. Equipment or Facility Rental/User Fees

7. Alterations and Renovations

8. Field Work Support Costs

39,600.00 otal Other Direct Costs 39,600.00

Total Other Direct Costs

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 Mime Type: application/pdf

JUSTIFICATION.pdf

(Only attach one file.)

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

Tracking Number: GRANT11418584 Subaward 2 Page 91 OMB Number: 4040-0001 Expiration Date: 06/30/2011

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

* ORGANIZATIONAL DUNS: 4209454950000

*Budget Type: O Project • Subaward/Consortium

Enter name of Organization: East China Normal University

A. S	enior/	Cey Person											
P	refix	* First Name	Middle Name	* Last Name	Suffix	* Project Role	Base Salary (\$)	Cal. Months	Acad.	Sum. Months	* Requested Salary (\$)	* Fringe Benefits (\$)	* Funds Requested (\$)
1. 2.	Dr. Dr.	Shuyi Guangjian		Zhang Zhu		Co-Investigator Research Techni- cian					940		(ъ) (4), (ъ) (6
Tota	al Fund	ls Requested fo	or all Senior Key Pe	ersons in the attached file									
Add	litional	Senior Key Pe	rsons:	File Name:			Mime Type:				Total Seni	ior/Key Person	(b) (4), (b) (

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

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

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 3

* ORGANIZATIONAL DUNS: 4209454950000

* Budget Type: O 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

* Funds Requested (\$) **Equipment Item**

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)

Total Travel Cost 2,700.00

2. Foreign Travel Costs

E. Participant/Trainee Support Costs

Funds Requested (\$)

2,700.00

- 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)

Subaward 2 Tracking Number: GRANT11418584 Page 93

OMB Number: 4040-0001 Expiration Date: 06/30/2011