2. Olival K.J, Latinne A, Islam A, Engstrand R, Nelson R, Amato G, Epstein JH, Daszak P (2010). Using bat population genetics to understand Nipah virus dynamics and cross-species transmission in south and southeast Asia. **International Bat Research Conference**,

3. Morand S, Bordes F, Chen H, Claude J, Cosson J, Galan M, Grosbois V, Jittapalapong S, Latinne A, Michaux J, Ribas A (2015) Global parasite and *Rattus* spp. invasions: the consequences for rodent-borne diseases. **Integrative Zoology**, 10(5): 409-423. PMID: 26037785

4. Latinne A, Meynard CN, [illegible] and future climate changes on the distribution of three Southeast Asian murine rodents. **Journal of Biogeography**, 42(9): 1714-1726. doi.org/10.1111/jbi.12528

5. Blasdell K, Bordes F, Chen H, Claude J, Galan M, Latinne A, Michaux J, Morand S, Ribas A, Tran A (2015). Progress on research on rodents and rodent-borne zoonoses in South-east Asia. **Wildlife Research**, 42(2): 98-107. doi.org/10.1071/WR14211

Additional recent publications

1. Mazzoni A, Mastrolilli A, Grill A, Sara M, Kryštufek B, Kryštufek B, Palentinc A, Amori G, Bertolino S, Schulz B, Ehlers S, Lang J, Adamik P, Verheyen G, Dorenbosch M, Trout R, Zemanova M, Aloise G, Mazzotti S, Madsen P, Poitevin F, Michaux JR (2017). Evolutionary history and species delimitations: a case study of the hazel dormouse, *Muscardinus avellanarius*. **Conservation Genetics**, 18(1): 181-196. doi.org/10.1007/s10592-016-0892-8

2. Smitz N, Cornélis D, Chardonnet P, Caron A, de Garine-Wichatitsky M, Latinne A, Pigneur L, Melletti M, Koné I, Bouché P, Michaux J (2014). Genetic structure of fragmented southern populations of African Cape buffalo (*Syncerus caffer caffer*). **BMC Evolutionary Biology**, 14: 203. doi.org/10.1186/s12862-014-0203-2

3. Latinne A, Galan M, Waengsothorn S, Rojanadilok P, Eiamampai K, Sribuarod K, Michaux J (2014). Diet analysis of *Leopoldamys neilli*, a cave-dwelling rodent in Southeast Asia, using Next-Generation Sequencing from feces. **Journal of Cave and Karst Studies**, 76(2): 139-145. doi.org/10.4311/2013LSC0100

4. Latinne A, Chaval Y, Waengsothorn S, Rojanadilok P, Eiamampai K, Sribuarod K, Michaux J (2013). Is *Leopoldamys neilli* (Rodentia, Muridae) [illegible] replyto Balakirev et al. (2013). **Zootaxa**, 3731(4): 589-598. doi.org/10.11646/zootaxa.3731.4.10

5. Latinne A, Waengsothorn S, Rojanadilok P, Eiamampai K, Sribuarod K, Michaux J (2013). Diversity and endemism of Murinae rodents in Thai limestone karsts. **Systematics and Biodiversity**, 11(3): 323-344. doi.org/10.1080/14772000.2013.814858

6. Pauwels OSG, Sumontha M, Latinne A, Grismer LL (2013). *Cyrtodactylus sanook* (Squamata: Gekkonidae), a new cave-dwelling gecko from Chumphon Province, southern Thailand. **Zootaxa**, 3635(3): 275-285. PMID: 26097949

7. Latinne A, Waengsothorn S, Rojanadilok P, Eiamampai K, Sribuarod K, Michaux J (2012). Combined Mitochondrial and Nuclear Markers Reveal [illegible] *Leopoldamys neilli*, a Cave Dwelling Rodent of Thailand. **PLOS One**, 7(10): e47670. PMID: 23118887

1999-2001 Health Res[illegible]
1998 Graduate RA, H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL
1997-1998 Graduate RA, University of South Florida, Department of Anthropology, Tampa, FL
1996-1997 Project Manager, Cultural Systems Analysis Group, Univ Maryland
1995-1996 RA, Cultural Systems Analysis Group, University of Maryland College Park, Maryland

[illegible] Professional Memberships
Member, American Public Health Association (APHA)
Member, American Evaluation Association (AEA)
Member, Global Health Council (GHC)
Member, American Anthropological Association (AAA)
Member, Society for Applied Anthropology (SFAA)

Honors

2007-2010 Johns Hopkins University Tuition Scholarship
2005 Distinguished Service Award, Latin American Youth Center
1999 Center for Urban Transportation Research Graduate Assistantship
1999 Latin American and Caribbean Studies Passport Scholarship
1998 Latin American and Caribbean Studies Research Grant
1997-1998 Department of Anthropology Graduate Assistantship

C. Contribution to Science

1. **Ethical and Robust Human Subjects Research:** My advanced training and experience in [illegible] carry[illegible] allowed me to contribute to the body of literature and recommended practices around balancing robust study design with the ethical treatment of human subjects. Through my research and application experience spanning Africa, Asia, Central America, the Caribbean, and North America, my contributions within this subject area have added to the discourse of building, implementing, and measuring scientific exploration in the name of human health improvements without compromising human privacy, dignity, and respect.

   a. Francisco LV, Abra[illegible] Violence against Women and HIV Risk Behaviours in Kampala, Uganda: Baseline Findings from the SASA! Study. **Violence Against [illegible]**, 19(7):[illegible]832.

   b. Wagman J, Francisco LV, Glass N, Sharps PW, Campbell JC (2008). Ethical challenges of research on and care for violence against intimate partner violence. **Journal of Clinical Ethics**, 19(4):371-80.

   c. Campbell JC, Baty ML, Ghandour RM, Stockman JK, Francisco LV, Wagman J (2008). The intersection of intimate partner violence against women and HIV/AIDS: a review. **International Journal of Injury Control and Safety Promotion**, 15(4):221-31.

   d. Campbell, JC, Baty ML, Ghandour RM, Stockman JK, Francisco LV, Wagman J (2008). The Intersection of Violence Against Women and HIV/AIDS. In Scott KA, Rapp [illegible] (Eds.) **Violence Prevention in the Americas and Middle [illegible]** the Global Agenda, pp 149-166. Washington, DC: Institute of Medicine, Natio[illegible]

2. **Scientific Approaches to [illegible]** Through the example of my work in the subject matter expertise in behavior change, I have built a strong case that scientific evidence should make its way into the hands of decision-makers and the community. This evidence-action gap is one that is often recognized, but regularly left unaddressed. My work in Kampala Uganda using a cluster-randomized controlled trial to understand the impact of an intervention in preventing violence against

women at risk reducing their HIV risk was recognized by Harvard University as a program that c… gaps in economic opportunity, politics, health, and education. It was also added to the W… Policy Program's Gender Action Portal, a hub of scient… providing insights on th… policies, strategies and practices aimed at closing gender gaps, and ta… promising inte… scale. Additionally, I led the development of a behavioral interventi… our picture book, "Living Safely with Bats," based upon feedback from communities living in countries and in areas of regular bat-human contact in their ho… homes. Th… resource became a key co… onent in ministerial and community outreach by the USAID PREDICT consortium following the … of the de… of the Bombali ebolavirus in 2018, and re… flects my continued efforts to translate research to practice.

a. Abramsky T, Devries K, Kiss L, Nakuti J, Kyegombe N, Starmann E, Cundill B, Francisco D, Musuya T, Michau L, Watts C (2014). Findings from the SASA! Study: a cluster randomized controlled trial to assess the im… act of a com… unity mobilisation intervention to prevent violence against women and reduce HIV risk in Kampala, Uga… **BMC Medicine**, 12:122.

b. Francisco LV, Sullivan A, Goley J, Martinez S, Saylors K, Euren J, Epstein J… Gol… Wol… g D, Johnson C, Hagan E, Ell… K, K… WP, P… R, M… K (… with Bats: a risk reduction resource to help minimize zoonotic spillover from bats. **USAID** Washington, DC.

c. Cam… bell JC, Pot… M, Ch… … BM, St… … K, Fr… … LV, W… … (2006). The Intersection of Violence against Women and HIV/AIDS. In Scott KA (Rap… … rteur). **Violence Prevention in Low- and Middle-Income Countries: Finding a Place on the Global Ag…**, pp. 1… -166. Washington, DC: Institute of Medicine, The National Academies Press.

3. **Applied … l research:** Through my advance… and m… ixed methods resea… methodology I have focused on promoting the application of behavioral research to on-the-ground problems. My authorship of over 80 technical reports and publications reinforces my track record of commitment to making robustly generated methodologies available and … those who affect policy and programming.

a. Francisco LV, *et al.* (2015). PREPARE CBEP Country Assessment Manual: Guidance for Implementation of CBEP Assessments of Country Capabilities in Biosurveillance, Biosafety, and Biosecurity. **Booz Allen Hamilton**, Lorton, VA.

b. Francisco LV, *et al.* (2011). Resilience and Prevention Study: Program Evaluation Framework for the Never Leave a Marine Behind (NLMB) Program. For the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury, US Department of Defense. **Booz Allen Hamilton**, Rockville, MD.

c. Francisco LV (2010). Operational Plan for Ethnographic and Network Assessment Research Project. For Centers for Disease Control and Prevention, … Zambia. … … …

Complete List of Published Work in My Bibliography:

D. Additional Information: Research Support and/or Scholastic Performance

Ongoing Research Support

R01 AI110964 Daszak (PI) 06/01/14-05/31/19
NIAID: Understanding the Risk of Bat Coronavirus Emergence
Bat ecological, human risk behavioral and virological studies to understand the risk of b… emergence
Role: Research Scientist

USAID EPT PREDICT-2 Mazet (PI) … 09/30/19

Conducting surveillance for novel pathogens in wildlife, livestock and people
behavior; modeling risk for novel disease emergence; identifying mitigation strategies
The goal of this project is to assist focal countries in monitoring viruses with pandemic potential, as well as the behaviors, practices, and conditions that are associated with viral evolution, spillover, amplification, and spread.
Role: Research Scientist

Completed Research Support

CDC CGH DGHT
Centers for Disease Control and Prevention (CDC), Center for Global Health (CGH), Division of Global HIV/AIDS and Tuberculosis (DGHT)
Qualitative Research to Individual Randomized Trial – Zambia
Trial
function.
Role: Project Manager

PFSCM Projects
Partnership for Supply Chain Management (PFSCM) Projects: USAID Supply Chain Management System (SCMS); Global Fund Pooled Procurement Mechanism (PPM); 3MDG Regional Supply Chain Strengthening (RSCSS)
Led and oversaw all company-wide team members and activities associated with the [illegible] projects, as part of a 16-member consortium, known as the Partnership for Supply Chain Management (PFSCM). All projects focused on
performance management.
Role: Program Manager

B. Positions and Honors

1993 Am[illegible]
1994 Albert Einstein College of Medicine Summer Student Award
1996 - 01 Graduate Student, Laboratory of Mark Denison, Vanderbilt University, Nashville, TN
1999 Dissertation Enhancement Award, Vanderbilt University
2001 - 02 Postdoctoral Fellow, Laboratory of Jack K[illegible]
2002 - 05 Postdoctoral Fellow, Laboratory of Ralph Baric, UNC at Chapel Hill
2005 - 14 Infectious Disease Pathol[illegible]
2014 - [illegible]
2017 - [illegible]

C. Contributions to Science

1. *In vitro* models for viral infection. Finding suitable in vitro models for studying newly identified or emerged human respiratory viruses can be a challenge. Primary cells isolated from the human conducting airway can be cultured at an air liquid interface and following maturation recapitulate the morphology of the airway epithelium. These cultures provide a unique in vitro model and for one human coronavirus, HKU1, provide the only model for studying this virus.

a) Sims AC, Pyrc K, Dijkman R, Jebbink M, Long C, Deming D, Donaldson E, Vabret A, Baric RS, van der Hoek L, Pickles R (2010). Culturing the unculturable: human coronavirus HKU1 infects, replicates, and produces progeny virions in human ciliated airway epithelial cultures and organ explants. Journal of Virology, 84(22): 11255-63. PMC2953148

b) Sims AC, Baric RS, Yount B, Burkett SE, Donaldson E, Pickles RJ (2005). SARS-CoV infection of human ciliated airway epithelium: the role of the ciliated cell in viral spread in the conducting airways of the lung. **Journal of Virology**, 79(24): 15511-15524. PMC13[illegible]

2. Gene pathways to regulate viral replication. While at the University of Wisconsin Madison and Pacific Northwest National Laboratories, I have been working to identify specific host gene networks and pathways that regulate lethal human respiratory virus replication and pathogenesis. Specifically, I was interested in [illegible] human cell lines, models of [illegible]

a) Sims AC, Tilton SC, Menachery VD, Gralinski LE, Schäfer A, Matzke MM, Webb-Robertson BM, Chang J, Luna ML, Long CE, Shukla AK, Bankhead AR, Burkett SE, Zornetzer G, [illegible] R, McWeeney S, [illegible] RD, [illegible] AC, Wang W, Waters KM, and Baric RS (2[illegible] SARS-CoV Nuclear Import Block Enhances Host Transcription in Human Lung [illegible] Journal of Virology, 87(7): 3885-902. PMC3624188

b) Mitchell HD, Eisfeld AJ, Sims AC, Waters KM. A Network Integration Approach to Identify Highly Conserved Regulatory Targets Related to Pathogenicity for Influenza and SARS-CoV Respiratory Viruses. **PLoS ONE** 8(7): e69374. PMC3723910

c) Menachery VD, Eisfeld AJ, Jos[illegible] Sims AC, Schäfer A, Matzke MM, Webb-Robertson BJ, Luna ML, Long C, Green R, Gralinski LE, Chang J, Gralinski LE, Long C, Green R, Matzke MM, Webb-Robertson BJ, Shukla AK, Burkett S, Metz TO, Pickles R, Smith RD, Waters KM, Katze M, Kawaoka Y, Baric RS (2014). Pathogenic [illegible] PMC4050454

d) Aevermann BD, Pickett BE, Kumar S, Sims AC, Sm[illegible] Hutchinek N, Thomas PG, Tilton SC, Totura A, Wang J, Webb-Robertson B, Wen J, Weiss J, Yang J, Yount B, Zhang S, Waters KM, Weeney S, Smith RD, Waters KM, Kawaoka Y, Bu[illegible] Aderem A, Katze MM, Scheuermann R (2014). A Comprehensive Collection of Systems Biology Data Characterizing the Host Response to Viral Infection. **Nature Scientific Data**, 1(10). 1038/sdata.2014.33. PMC4410982

Complete List of Published Work in NCBI MyBibliography:

China and Bangladesh and have publishe[illegible] currently drafting 4 manuscripts concerning behavioral risk discoveries in [illegible]

a) Wang [illegible], Li S, [illegible], Huang H, Zhang Y, [illegible], Miller M, [illegible], Shi Z (2012). Serological evidence of bat SARS-related coronavirus J, Zhang Y, W[illegible] infection in humans, China. **Virologica Sinica**, 33(1), 104-107.

b) Miller M, Hagan E (201[illegible]). Integrated biological–behavioural surveillance in pandemic-threat warning syst[illegible] **...th Organization**, 95(1), 62.

2. **Research collaboration in developing countri[illegible]** [illegible]lyzing and reporting novel serological, quantitative, and qualitative findings from in-country st[illegible] [illegible]loping countries. This has take[illegible] [illegible] of training local anthropologists, physicians, clinicians, and social scientists in ethical data collection, methods of quantitative and qualitative data analysis, usage of the R statistical software, usage of the NVIVO 9 qualitative analysis software, and understanding the norms of scientific journal article pre[illegible] [illegible] Manuscript writing and publication of research experiences will be useful in the current proposed work through coordinating surveys and scientific work in China.

a) Miller M, Hagan E (2017). Integrated biological–behavioural surveillance in pandemic-threat warning systems. **Bulletin of th[illegible]**

b) Wang N, Li S, Yang X, Huang H, Zhang Y, [illegible], Miller M, [illegible], Shi Z (2012). Serological evidence of bat SARS-related coronavirus J, Zhang Y, Wang L, Daszak P, Shi Z (2012). Serological evidence of bat SARS-related coronavirus infection in humans, China. **Virologica Sinica**, 33(1), 104-107.

D. Additional Information: Research Support and/or Scholastic Performance

Ongoing Research Support

R01 AI110964 Daszak (PI) 06/01/14-05/31/19
NIAID: Understanding the Risk of Bat Coronavirus Emerg[illegible]
Bat e[illegible]
emergence
Role: Research Scientist

USAID EPT PREDICT-2 Mazet (PI) 10/01/14 – 09/30/19
Conducting surveillance for novel pathogens in wildlife, livestock and people; characterizing human risk b[illegible] [illegible] risk of novel disease emergen[illegible] [illegible]dentifying mitigation strateg[illegible]
The goal of this project is to ass[illegible] [illegible]cal countries in monitoring viruses with pandemic potential, as well a[illegible] behaviors, practices, and conditions that are associated with viral evolution, spillover, amplification, and spread.
Role: Research Scientist

Completed Research Support

USAID EPT PREDICT-1 Mazet (PI) 10/01/09 – 09/30/14
Modeling hotspots for disease emergence and conducting surveil[illegible] [illegible] [illegible]l hotspots for emerging zoonoses

This project preceded PREDICT-2
diseas
strategies across sever
Role: Rese

Zhu G, Han N, Hong T, Tan M, Yu D, Zhang L (2008). Echolocation Call Boost and ND 1 Sequence Analysis of New Record of *Nyctalus plancyi* (Chiroptera: Vespertilionidae) on Hainan Island. **Zoological Research**, 447-451.

Zhu G, Li D, Ye J, Hong T, Zhang L (2006). New Record of *Ia io* in Hainan Island, its Echolocation Pulses and ND1 Analysis. **Chinese Journal of Zoology**, 41(6): 69-75.

Sun Y, Yu D, Zhu G, Liu X, Liu X, Zhang SY, Chen J (2009). Isolation, characterization of 11 microsatellite loci in *Scotophilus kuhlii* (Lesser Asiatic Yellow House Bat). **Conservation**

Mao X, Zhu G, Zhang SY, Rossiter SJ (2010). Pleistocene climatic oscillations drive intraspecific genetic differentiation in the intermediate horseshoe bat (*Rhinolophus affinis*) in Southern China. **Molecular Ecology**, 19(13): 2754-2769.

Hua P, Zhang L, Zhu G, Jones G, Zhang SY, Rossiter SJ (2011). Historical demography in multiple species of flat-headed bats. **Molecular Ecology**, 20(17): 3669-3680.

Additional recent publications of importance to the field (in

Mazet JAK, Wei Q, Zhao G, Cummings DAT, Desmond JS, Rosenthal BM, King CH, Cao W, Chmura AA, Hagan EA, Zhu G, Hu S, Xiao X, Xu J, Shi Z, Feng F, Liu X, Pan W, Zhu G, Zuo G, Daszak P (2015). Joint China-Us Call for Employing a Transdisciplinary Approach To Emerging Infectious Diseases. **EcoHealth** 12(4): 555-559.

Hu B, Chmura AA, Li J, Zhu G, Desmond JS, Zhang YJ, Zhang JS, Epstein JH, Daszak P, Shi Z (2014). Detection of Diverse Novel Astrovirus
2442-2449.

Zhu G, Wang R, Xuan F, Daszak P, Anthony SJ, Zhang SY, Zhang L, He G (20). Characterization of Recombinant H China. **Veterinary Microbiology** 1 327-336.

Zhu G, Chmura AA, Z (2011). Microbiology, echolocation calls and Vespertilionidae) Hainan Island, ropter(4): 175-181.

Ma J, Jones G, Zhu G, Metzner W (2010). Echolocation behaviours of the Japanese pipistrelle bat *Pipistrellus abramus* during foraging flight. **Acta Theriologica**, 55(4): 315-3

Tan M, Jones G, tin2. **PLoS One**, 4(10), e7553.

Zhang L, Zhu G, **ORYX**, 43(2): 179-182.

Zhu G, Tang Z **Journal of Zoology**, 42(4): 22-27.

D. Research Support

Ongoing Res
USAID EPT

Program Director/Principal Inv

Modeling hotspots for dis for disease emergence and conducting surveillance in wildlife in hotspots for new emerg
zoonoses
Amount: $18 million subcontract on a $75 million awar
Role: Lead Field Scientist

1R01AI110964 Daszak (PI) 05/ 4 – 05/ /19
NIAID: Understanding the Ba avirus Em gence
Bat ecological, viral, human risk ben oral
emergence
Amount: $2.5 m
Role: Lead Fi Scientist

Con
U
Modeling hotspots for
zoonoses
Amount:
Role: Lead Fie

1 R01AI079231 Daszak (PI) 09/18/08 – 08/31/13
NIAID:
Risk of viral em ence from
To model hotspots for be diversity, identify & characterize new bat viruses & und their pat
Role: Research Scientist

a. Bossart KN, McEachern JA, Hickey [illegible] Neutralization assays for [illegible] **Journal of Virological Methods** [illegible]

b. Thalmann CM, Cummins DM, Yu M, Luo R, Pritchard LI, Hansson E, Crameri S, Hyatt A, Wang LF (2010) Broome virus, a new fusogenic [illegible] paramyxovirus species isolated from an Australian bat. **Virology** 402:26-40.

c. Cui J, Tachedjian G, Tachedjian M, Holmes EC, Zhang SY, Wang LF (2012) Identification of diverse groups of endogenous gammaretroviruses in mammals and microbats. **Journal of General Virology** 93:2037-2045.

d. Wang J, Selleck P, Yu M, Ha W, Rootes C, Gales H, Wise T, Crameri S, Chen H, Broz I, Hyatt A, Woods R, Meehan B, McCullough S, Wang LF (2014) Novel Phlebovirus and Numerous Retroviruses Isolated from Ticks, Australia. **Emerging Infectious Diseases**

2. Identification of bats as major reservoir of emerging zoonotic viruses

I have used surveillance in wildlife, livestock and humans, coupled with [illegible] primers, [illegible] and laboratory assays to identify evidence that bats are the reservoir for a series of emerging viruses in people, including Hendra virus, Nipah virus, SARS-CoV, and others. This work has been one of the foundations for current interest in bats in emerging infectious disease research.

a. Eaton BT, Broder CC, Middleton D, and Wang LF, (2006). Hendra and Nipah viruses: different and dangerous. **Nature Reviews Microbiology**, 4: 23-35.

b. Chua KB, Crameri C, Hyatt A, Yu M, Tompang MR, Rosli J, Byrareddy S, Kumarasamy V, Eaton BT, Wang LF (2007). A previously unknown reovirus of bat origin is associated with an acute respiratory disease in humans. **Proceedings of the National Academy of Sciences** 104:11424-11429.

c. Mahalingam S, Herrero LJ, Playford G, Yu M, Nissen MD, Sloots TP, Hyatt A, Crameri G, Wang LF, Eaton BT, Broz I, Rootes CL, Smith I, Crameri S, Kung YH, Field H, Wang LF (2012) Hendra virus: an emerging paramyxovirus in Australia. **Antiviral Therapy** **Diseases** 12:839-865.

d. Clayton BA, Middleton D, Arkinstall R, Frazer L, Wang LF, Marsh GA (2016) The Nature of Exposure Drives Transmission of Nipah Viruses from Malaysia and Bangladesh in Ferrets. **PLOS Neglected Tropical Diseases** 10(6): e0004775.

3. Establishment of bats as a new mammalian model system to study virus-host interactions and evolutionary biology

Working with collaborators around the world, my lab has amassed an unprecedented collection of serological, tissue and other samples from bat surveillance programs. I have used these to develop and disseminate primary and [illegible] cell lines and [illegible] reagents that my team and collaborators are using to test hypotheses about why bats are able to [illegible] Current projects include bat genomic and proteomic examining the bat MHC using gene knockout technology to identify links between flight, virus resistance, and longevity.

a. Wynne JW, Shiell BJ, Marsh G, Boyd V, Monaghan P, Zhou P, Klein R, Todd S, Michalski WP, Tachedjian M, Baker M, Matthews D, Wang LF (2014). Proteomics informed by transcriptomics reveals Hendra virus sensitizes bat cells to TRAIL mediated apoptosis. **Genome Biology** 5:532.

b. Zhou P, Tachedjian M, Wynne JW, Boyd V, Cui J, Smith I, Cowled C, Ng JH, Mok L, Michalski WP, Mottram TJ, Imhall IH, Tachedjian G, Wang LF, Baker ML (2016) Contraction of the type I IFN locus and unusual constitutive expression of IFN-α in bats. **Proceedings of the National Academy of Sciences** 113: 2696-2701.

Honors

2008 - 10 Outstanding Young Scientist (National Natural Science Foundation of China), granted by National Natural Science Foundation of China. Principal Investigator.

2015 2nd prize of the advanced science and technology progress award, second author, granted by Ministry of Education, China

2016 1st prize of the advanced science and technology progress award, second author, granted by Ministry of Education, China.

2017 Excellent teacher of Peking Union Medical College (PUMC), China

C. Selected peer-reviewed publications most relevant to the current application

* = Co-corresponding

Ren L*, Richard C-A, Wang Y, He Z*, Xiang Z*, Wang Y, Zhang J, Xiao Y, Yang C, Zhang J, Chen L, Wang W, Li Y, Li T, Meng X, Zhang Y, Guy V, Paranhos-Baccalà G, Jin Q, Wang J (2009) Prevalence of human respiratory viruses in adults with acute respiratory tract infections in Beijing, 2005–2007. **Clinical Microbiology and Infection** 15(12): 1146-1153.

Ren L, Gonzalez R, Xu Y, Li J, Zhang J, Vernet G, Paranhos-Baccalà G, Lin Q, Wang J (2009) WU polyomavirus in fecal specimens of children with acute gastroenteritis, China. **Emerging Infectious Diseases**, 15(1): 134-135.

Ren L, Gonzalez R, Xiao Y, Xu Y, Chen L, Vernet G, Paranhos-Baccalà G, Lin Q, Wang J (2009) Saffold cardiovirus in children with acute gastroenteritis, Beijing. **Emerging Infectious Diseases**, 15(9): 1509-1511.

Ren L, Gonzalez R, Xu J, Xiao Y, Li Y, Zhou H, Li J, Yang Q, Zhang J, Vernet G, Paranhos-Baccalà G, Wang Z, Wang J (2011). Prevalence of human coronaviruses in adults with acute respiratory tract infections in Beijing, China. **Journal of Medical Virology** 83(8): 1381-1387.

Yang J*, Yang F*, Ren L*, Xiong Z, Wu Z, Dong L, Sun L, Zhang T, Hu Y, Du J, Wang L, Lin Q (2011). Unbiased parallel detection of viral pathogens in clinical samples by use of a metagenomic approach. **Journal of Clinical Microbiology** 49(10): 3463-3469.

Guo L*, Zhang XA, Ren L*, Yu X, Shen L, Zhou H, Gao X, Yang L, Hu Y, Wu S, Xiao X, Zhu Y, Wang G, Pang X, Jin Q, Wu F, Wang J (2014). Human antibody responses to avian influenza A(H7N9) virus. **Emerging Infectious Diseases**, 20(2): 192-200.

Ren L*, Yu X*, Zhao B*, Wu F, Jin Q, Zhang X, Wang J (2014). Infection with possible precursor of avian influenza A(H7N9) virus in a Child, China, 2013. **Emerging Infectious Diseases** 20(2): 1-3.

Ren L*, Zhang Y*, Li J, Xiao Y, Zhang J, Wang Y, Chen L, Paranhos-Baccalà G, Wang J (2015). Genetic drift of human coronavirus OC43 spike gene during adaptive evolution. **Scientific Reports**, 5: 11451. doi.org/10.1038/srep11451

Zhang Y, Li J, Xiao Y, Zhang J, Wang Y, Chen L, Paranhos-Baccalà G, Ren L*, Wang J* (2015). Genotype shift in human coronavirus OC43 and emergence of a novel genotype by natural recombination. **The Journal of Infection** 70(6): 641-650.

Yuan F, Xiao Y, Li L, Zhang H, Zhang R, Zhou H, Shen H, Wang J, Ren L* (2017). Metagenomic analysis identified human rhinovirus B91 infection in an adult suffering from severe pneumonia. **American Journal of Respiratory and Critical Care Medicine**, 195(11): 1535-1536.

Ren L*, Yang D*, Ren X*, Li M, Mu Y, Wang Q, Cao L, Hu K, Yan C, Fan H, Li X, Chen Y, Wang R, An F, An S, Luo M, War
rhinovirus in [illegible] with acute [illegible] respiratory virus infections identified predominant infections of genotyp
A21. **Scientific Reports**, 7:41001.

Ren L*, Zha[illegible], Luo, L, Xiao, Y, Zhang, Z, Yang, B, Cao, D, Zho[illegible] (2018). Transcriptionally Active Lung Microbiome and Its A[illegible] Inflammatory Stat[illegible] **mSystems**, 3:e00199-18.

D. Research Support

Ongoing Research Support

1. 2[illegible]
Viral etiology and spectrum of respiratory tract infections and the mutations characte
The goal of this project is to identify the etiology of community
and mutations of the important respiratory viruses.
Role: PI

Completed Research Support

1. 2012ZX10004-206 Key [illegible] 12/31/2015
Viral etiology and spectrum of respiratory tract infections and the mutations charact
The goal of this project is to investigate the etiology of acute respiratory tract infections in China and the sero-
epidemiological of important respiratory viruses.
Role: PI

2. 2008ZX10004-206 Key project of infectious diseases [illegible] 12/31/2010
Viral etiology and spectrum of [illegible]
The goal of this project is to establish the surveillance network and to investigate the etiology of acute respiratory
tract infections in China.
Role: PI

Yang J*, Zhang T*, Guo L*, Hu YF, Li JL, Su HX, Xiao Y, Ren XW, Dong J, Sun LL, Xiao Y, Li LL, Tong JW, Yuan H, Jin Q (2014). Mutations of Novel Influenza A(H10N8) Virus in Chicken Eggs and MDCK Cells. **Emergining Infectious Diseases**, [illegible]

Zhou Z, Gao X, Wang Y, Zhou H, Wu C, Paranhos-Baccalà G, Vernet G, Guo L*, Wang J* (2014). Conserved B-cell Epitopes among Human Bocavirus Species Indicate Potential Diagnostic Targets. [illegible](1): e86[illegible]960.

Guo L, Zhang X, Ren L, Yu X, Chen L, Zhou H, Gao X, Teng Z, Li J, Hu J, Wu C, Xiao X, Zhu Y, Wang Q, Pang X, Lin Q, Wu F, Wang L (2014). Human antibody responses to avian influenza A(H7N9) virus. **Emerging Infectious Diseases**, [illegible]

Guo L, Wu C, Zhou H, Wu C, Paranhos-Baccalà G, Vernet G, Jin Q, Wang J, Hung T (2013). Identification of a nonstructural DNA-binding protein (DBP) as an antigen with diagnostic potential [illegible] **One**, 8(3): e56708.

Guo L, Wang Y, Zhou H, Wu C, Song J, Li J, Paranhos-Baccalà G, Vernet G, Wang J, Hung T (2012). Differential seroprevalence of human bocavirus species 1-4 in Beijing, China. **PLoS One**, 7(5): e36941.

Guo L, Gonzalez R, Zhou H, Wu C, Vernet G, Wang Z, Wang J (2012). Detection of three human adenovirus species in adults with acute respiratory infection in China. **European Journal of Clinical Microbiology and Infectious Disease**, 31(6): 1051-1058.

Guo L, Gonzalez R, Xie Z, Zhou H, Liu C, Wu C, Vernet G, Shen K, Wang J (2011). Bocavirus in children with respiratory tract infections. **Emerging Infectious Diseases**, 17(9): 1773-1777.

Wang Y, Gonzalez R, Zhou H, Li J, Li Y, Paranhos-Baccalà G, Vernet G, Wang J, Guo L*, Wang J* (2011). Detection of human bocavirus 3 in China. **European Journal of Clinical Microbiology and Infectious Disease**, 30(6): 799-805.

Guo L, Gonzalez R, Wang W, Vernet G, Paranhos-Baccalà G, Wang J (2010). Complete genomic sequence of human astrovirus genotype 6. **Virology Journal**, 7: 239.

Guo L, Xu X, Song J, Wang W, Wang J, Hung T (2010). Molecular Characterization of Norovirus Infection in Children with Diarrhea in Beijing, 2009. [illegible]

Guo L, Zhou H, Wang M, Song J, Han B, Shu Y, Ren L, Si H, Qu J, Zhao Z, Wang J, Hung T (2009). A recombinant adenovirus prime-virus-like particle boost regimen elicits effective norovirus-specific immunities against norovirus in mice. **Vaccine**, 27(38): 5233-5238.

Guo L, Song J, Xu X, Ren L, Li J, Zhou H, Wang M, Qu J, Wang J, Hung T (2009). Genetic analysis of norovirus in children affected by acute gastroenteritis in Beijing, 2004-2007. **Journal of Clinical Virology** 44(1): 94-98.

Guo L, Wang [illegible] administration of a recombinant adenovirus expressing the norovirus capsid [illegible] mucosal and cellular immune responses in mice. **Vaccine**, 26(4): 460-468.

D. Research Support

Ongoing Research Support

2018ZX10734404-[illegible] 01/01/2018-12/31/2020

5. Wang MN, Zhang W, Gao YT, Hu B, Ge XY, Yang XL, Zhang YZ, Shi Z (2016). Longitudinal surveillance of SARS-like coronaviruses in bats by quantitative real-time PCR. **Virologica Sinica**, 31(1): 78-80. doi.org/10.1007/s12250-015-3703-3

6. Yang XL, Hu B, Wang B, Wang MN, Zhang Q, Zhang W, Wu LJ, Ge XY, Zhang YZ, Daszak P, Wang LF, Shi Z (2016). Isolation and Characterization of a Novel Bat Coronavirus Closely Related to the Direct Progenitor of Severe Acute Respiratory Syndrome Coronavirus. Journal of Virology, 90(6): 3253-3256. doi: 10.1128/JVI.02582-15

7. Waruhiu C, Ommeh S, Obanda V, Agwanda B, Gakuya F, Ge XY, Yang XL, Wu LJ, Zohaib A, Hu B, Shi Z (2017). Molecular epidemiology of group A rotaviruses. **Virologica Sinica**, 32(2):101-114. doi.org/10.1007/s12250-016-3896-9

8. Hu B, Zeng LP, Yang XL, Ge XY, Zhang W, Li B, Xie JZ, Shen XR, Zhang YZ, Wang N, Luo DS, Zheng XS, Wang MN, Daszak P, Wang LF, Cui J, Shi Z (2017). Discovery of a Rich Gene Pool of Bat SARS-Related Coronaviruses Provides New Insights into the Origin of SARS Coronavirus. **PLOS Pathogens**, 13(11): e1006698.

9. Luo CM, Wang N, Yang XL, Liu HZ, Zhang W, Li B, Hu B, Peng C, Poon LLM, Jiang RD, Zhu Y, Chmura AA, Shi ZL, Daszak P, Shi Z (2018). Discovery of Novel Bat Coronaviruses in South China That Use the Same Receptor as Middle East Respiratory Syndrome Coronavirus. **Journal of Virology**

10. Luo Y, Li B, Jiang RD, Hu B, Luo DS, Zhu Y, Shi ZL, Hu B, Liu MQ, Zhang YZ, Shi Z (2018). Surveillance of Betacoronaviruses in Fruit Bats in Yunnan Province, China during 2009-2016. **Virologica Sinica**. 33(1):87-95. doi.org/10.1007/s12250-018-0017-2

D. Research Support

Ongoing Research Support

31800142 Hu (PI) 01/01/2019-12/31/2021
National Natural Science Foundation of China
Pathogenicity studies of two novel bat SARS-like coronaviruses in transgenic mice expressing human ACE2
Role: PI

R01 AI110964 Daszak (PI) 06/01/14-05/31/19
Understanding the Risk of Bat Coronavirus Emergence
The goal of this study is to analyze the risk of bat coronavirus spillover from bats to people in Southern China
Role: Research Scientist

Emerging Pandemic Threat Program, USAID Mazet (PI) 10/01/14-09/30/19
PREDICT 2
The goal of this project is to create and implement a global virus surveillance system to detect and analyze spillover risk.
Role: Laboratory Scientist

Completed Research Support

USAID EPT PREDICT Mazet (PI) 10/[illegible]
Modeling hotspots for disease emergence and conducting surveillance in wildlife in hotspots for new emerging zoonoses
Amount: $18 million subcontract on a $75 million award
Role: Laboratory Scientist

Hu B, Chmura A, Li J, Zhu G, Desmond, JS, Zhang Y, Zhang, JS, Epstein, JH, Daszak P, Shi Z (2014) Detection of Diverse N[illegible] viruses from Sri[illegible] 2442-2449.

Ge XY, Li JL, Yang X-L, Chmura AA, Zhu G, Epstein JH, Mazet JK, Hu B, Zhang W, Peng C, Tan B, Wang N, Zhu Y, Crameri G, Zhang S, Wang LF, Daszak P, Shi Z (2013). Isolation and characterization of a bat SARS-like Coronavirus that uses the ACE2 receptor. **Nature**. 503: 535-538.

Zhu G, Chmura AA, Zhang L (2011). Morphology, echolocation calls and diet of [illegible] Vespertilionidae) on Hainan Island, south China. **Acta Chiropterologica**. 14(1): 175-181.

Kilpatrick AM, Chmura AA, Gibbons DW, Fleischer RC, Marra PP, Daszak P (2006). Predicting the global spread of H5N1 avian influenza. [illegible]

D. Research Support

Ongoing Research Support

R01 AI110964 Daszak (PI) 06/01/14-05/31/19
Understanding Risk of Bat Coronaviruses
The goal of this study is to analyze the risk of coronavirus spillover from bats to humans in Southern China
Role: Research Scientist

Emerging Pandemic Threat Program, USAID Mazet (PI) 10/01/14-09/30/[illegible]
PREDICT 2
The goal is to [illegible]ate and implement a global virus surveillance system in animals and humans and analyze spillover risk.
Role: Program Coordinator

Completed Research Support

USAID EPT PREDICT 1 Mazet (PI) 10/01/09 – 09/30/14
Modeling hotspots for disease emergence and conducting surveillance in wildlife in hotspots for emerging zoonoses
Role: Program Coordinator

2 R01 TW[illegible] Daszak (PI) 09/01/08 – 08/31/13
NIH Ecology of Infectious Diseases (Fogarty International Center)
The Ecology, Emergence and Pandemic Potential [illegible]
To conduct mathematical modeling and fieldwork to understand the dynamics of Nipah virus in Bangladesh
Role: Research Scientist

NSF DEB-1257513 Daszak (PI) 08/15/12-07/31/13
US-China Ecology and Evolution of Infectious Diseases Collaborative Workshop, Kunming, China 2012
Role: Program Coordinator

1 R01AI079201 Daszak (PI) 09/18/08 – 08/31/13
NIAID Non-Biodefense Emerging Infectious Diseases
Risk of viral emergence from bats.
To model hotspots for bat viral diversity, [illegible]
Role: Research Scientist

RESEARCH & RELATED BUDGET - SECTIONS F-K, Budget Period 1

ORGANIZATIONAL DUNS*: 0330900660000

Budget Type*: ● Project ○ S

Organization: ECOHEALTH ALLIANCE, INC.

Start Date*:

F. Other Direct

1. Materials and Supplies	20,850.00
2. Publication Costs	
3. Consultant Services	79,750.00
4. ADP/Computer Services	
5. Subawards/Consortium/Contractual Costs	
6. Equipment or Facility Rental/User Fees	
7. Alterations and Renovations	
Total Other Direct Costs	**291,249.00**

G. Direct Costs

Total Direct Costs (A	

H. Indirect

Indirect Cost Type	Indirect Cost Rate (%)	Indirect Cost Base ($)	Funds Requested ($)
1 . EcoHealth Alliance Indirect Cost	32.74	363,710.00	119,079.00
2 . [illegible] Indirect Cost on 3 Subawards (IPB UNC, WIV)	32.74	75,000.00	24,555.00
3 . University of [illegible] Chapel Hill Indirect Cost	55.5	50,000.00	27,750.00
4 . IPB and WIV Subawards (2) Indirect Costs	8.0	140,649.00	11,252.00
Total Indirect Costs			**182,636.00**

Cognizant Federal Agency

(Agency Name, POC Name, and Phone Number)

I. Total Direct and Indirect Costs

Total Direct and Indirect Institutional Costs (G + H)	

J. Fee

K. Total Costs

736,996.00

L. Budget Justification

File Name:

EHA_NIAID_C[illegible]

(Only attach one file.)

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

RESEARCH & RELATED BUDGET - SECTION C, D, & E, Budget Period 2

ORGANIZATIONAL DUNS*:
Budget Type*: ● Project ○ Subaward/Consortium
Organization: ECOHEALTH ALLIANCE

Start Date*: 06-01-2020 **End Date*:**

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 attachment	
Total Equipment	0.00

Additional Equipment: File Name:

D. Travel	Funds Requested ($)
1. Domestic Travel Costs (Incl. Canada, Mexico, and U.S. Possessions)	9,440.00
2. Foreign Travel Costs	29,958.00
Total Travel Cost	39,398.00

E. Participant/Trainee Support Costs	Funds Requested ($)*
1. Tuition/Fees/Health Insurance	
2. Stipends	
3. Travel	
4. Subsistence	
5. Other	
Number of Participants/Trainees	

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

RESEARCH & RELATED BUDGET - S[illegible]

ORG[illegible]

Budget Type*: ● Project ○ Subaward/Consortium

Organization: ECOHEALTH ALLIANCE, INC.

Start Date*: 06-01-2020 **End Date*:** 05-31-2021 **Budget Period:** 2

F. Other Direct Costs	Funds Requested ($)*
1. Materials and Supplies	14,850.00
2. Publication Costs	6,000.00
3. Consultant Services	79,750.00
4. ADP/Computer Services	
5. Subawards/Consortium/Contractual Costs	190,649.00
6. Equipment or Facility Rental/User Fees	
7. Alterations and Renovations	
Total Other Direct Costs	291,249.00

G. Direct Costs	
Total Direct Costs (A thru F)	554,360.00

H. Indirect Costs

Indirect Cost Type	Indirect Cost Rate (%)	Indirect Cost Base ($)	Funds Requested ($)*
1 . EcoHealth Alliance Indirect Cost	32.74	363,710.00	119,079.00
2 . University of [illegible] Indirect Cost	[illegible]	[illegible]	[illegible]
3 . IPB and WIV Subawards (2) Indirect Costs	8.0	140,649.00	11,252.00
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)	712,441.00

J. Fee	Funds Requested ($)*

K. Total Costs and Fee	Funds Requested ($)*
	712,441.00

L. Budget Justification* File Name: EHA_NIAID_CCV_BUDGET_JUSTIFICATION_FINAL.pdf

(Only attach one file.)

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

RESEARCH

ORGANIZATIONAL DUNS*: 0770900660000
Budget Type*: ● Project ○ Subaward/Consortium
Organization: ECOHEALTH ALLIANCE, INC.

Start Date*: 06-01-2021 **End Date*:** 05-31-2022 **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 attached file	
	Total Equipment 0.00

Additional Equipment: File Name:

D. Travel	**Funds Requested ($)***
1. Domestic Travel Costs (Incl. Canada, Mexico, and U.S. Possessions)	9
2. Foreign Travel Costs	0.00
	Total Travel Cost 39,398.00

E. Participant/Trainee Support Costs	**Funds Requested ($)***
1. Tuition/Fees/Health Insurance	
2. Stipends	
3. Travel	
4. Subsistence	
5. Other	
Number of Participants/Trainees	

RESEARCH & RELATED Budget {C-E} (Funds Requested) 39,398.00

RESEARCH & RELATED BUDGET - S[illegible]

ORG[illegible]
Budget Type*: ● Pr[illegible]
Organization: ECOHEALTH ALLIANCE, INC.

Start Da[illegible]*: 06-01-2021 **End Date*:** 05-31-2022 **Budget Period:** 3

F. Other Direct Costs	Funds Requested ($)*
1. Materials and Supplies	14,850.00
2. Publication Costs	6,000.00
3. Consultant Services	79,750.00
4. ADP/Comput[illegible] Services	
5. Subawards/Consortium/Contractual Costs	190,649.00
6. Equipment or Facility Rental/User Fees	
7. Alterations and Renovations	
Total Other Direct Costs	291,249.00

G. Direct [illegible]	
Total Direct Costs (A [illegible])	554,360.00

H. Indirect Costs

Indirect Cost Type	Indirect Cost Rate (%)	Indirect [illegible] Base ($)	Funds Requested ($)*
1 . EcoHealth Alliance Indirect Cost	32.74	363,710.00	119,079.00
2 . University of [illegible] at Chapel Hill Indirect Cost	[illegible]	[illegible]	[illegible]
3 . IPB and WIV Subawards (2) Indirect Costs	8.0	140,649.00	11,252.00
Total Indirect Co[illegible]			

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

I. Total Direct and Indirect Cost[illegible]	Funds Requ[illegible]sted ($)*
Total Direct [illegible] Indirect Institutional Costs (G + H)	712,441.00

J. Fee	Funds Requested ($)*

K. Total Costs and Fee	Funds Requested ($)*
	712,441.00

L. Budget Justification* File Name:
EHA_NIAID_CC[illegible]_BUDGET_JUSTIFICATION_FINAL.pdf
(Only attach one file.)

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

RESEARCH & RELATED BUDGET - SECTION

ORGANIZATI 077090066000

Budg Subaward/Cor

Organization: ECOHEALTH ALLIANCE, INC.

Start Da

C. Equipment Descrip

List and dollar amo for each item exceeding $5,000

Equipment Item	Funds Reque
Total funds requested for all equipme	
Total Eq	

Additional Equipment: File Na

D. Travel Funds Req

1. Domestic Travel Costs (Incl. Canada, Mexico, and U.S. Possessions)	9,440.00
2. Foreign Trave	29,95
Total Travel Cost	**39,398.00**

E. Participant/Trainee Sup rt Costs Funds

1. Tuition/Fees/Health Insurance	
2. Stipends	
3. Travel	
4. Subsistence	
5. Other:	
Number ants/Trainees	**Total Participa**

RESEARCH & RELATED Budget (2 FINE Form Page)

RESEARCH & RELATED BUDGET - S[illegible]

ORG[illegible]
Budget Type*: ● Pr[illegible]
Organization: ECOHEALTH ALLIANCE, INC.

Start Da[illegible]*: 06-01-2022 **End Date*:** 05-31-2023 **Budget Period:** 4

F. Other Direct Costs	Funds Requested ($)*
1. Materials and Supplies	14,850.00
2. Publication Costs	6,000.00
3. Consultant Services	79,750.00
4. ADP/Comput[illegible] Services	
5. Subawards/Consortium/Contractual Costs	190,649.00
6. Equipm[illegible]	
7. Alterations and Renovations	
Total Other Direct Costs	291,249.00

G. Direct [illegible]	
Total Direct Costs (A [illegible])	554,360.00

H. Indirect Costs

Indirect Cost Type	Indirect Cost Rate (%)	Indirect [illegible]	Funds Requested ($)
1 . EcoHealth Alliance Indirect Cost	32.74	363,710.00	119,079.00
2 . University of [illegible]	[illegible]	[illegible]	[illegible]
3 . IPB and WIV Subawards (2) Indirect Costs	8.0	140,649.00	11,252.00
Total Indirect Co[illegible]			

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

I. Total Direct and Indirect Cost[illegible]	Funds Requested ($)*
Total Direct and Indirect Institutional Costs (G + H)	712,441.00

J. Fee	Funds Requested ($)*

K. Total Costs and Fee	Funds Requested ($)*
	712,441.00

L. Budget Justification* File Name:
EHA_NIAID_CC[illegible]_BUDGET_JUSTIFICATION_FINAL.pdf
(Only attach one file.)

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

RESEARCH & RELATED BUDGET - SECTION

ORGANIZATI 077090066000

Budg O Subaward/Cor

Organization: ECOHEALTH ALLIANCE, INC.

Start Da

C. Equipment Descrip

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

Equipment Item	Funds Reque
Total funds requested for all equipment listed	
Total Eq	

Additional Equipment: File Na

D. Travel Funds Req

1. Domestic Travel Costs (Incl. Canada, Mexico, and U.S. Possessions)	9,440.00
2. Foreign Trave	29,95
Total Travel Cost	**39,398.00**

E. Participant/Trainee Support Costs Funds

1. Tuition/Fees/Health Insurance	
2. Stipends	
3. Travel	
4. Subsistence	
5. Other:	

Number ants/Trainees Total Participant

RESEARCH & RELATED Budget (2 FINAL Form Page)

RESEARCH & RELATED BUDGET - S[illegible]

ORG[illegible]
Budget Type*: ● Pr[illegible]
Organization: ECOHEALTH ALLIANCE, INC.

Start Da[illegible]*: 06-01-2023 **End Date*:** 05-31-2024 **Budget Period:** 5

F. Other Direct Costs	Funds Requested ($)*
1. Materials and Supplies	14,850.00
2. Publication Costs	6,000.00
3. Consultant Services	79,750.00
4. ADP/Comput[illegible] Services	
5. Subawards/Consortium/Contractual Costs	190,649.00
6. Equipm[illegible]	
7. Alterations and Renovations	
Total Other Direct Costs	291,249.00

G. Direct [illegible]	
Total Direct Costs (A [illegible])	554,360.00

H. Indirect Costs

Indirect Cost Type	Indirect Cost Rate (%)	Indirect [illegible]	Funds Requested ($)
1 . EcoHealth Alliance Indirect Cost	32.74	363,710.00	119,079.00
2 . University of [illegible]	[illegible]	[illegible]	[illegible]
3 . IPB and WIV Subawards (2) Indirect Costs	8.0	140,649.00	11,252.00
Total Indirect Co[illegible]			

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

I. Total Direct and Indirect Cost[illegible]	Funds Requested ($)*
Total Direct and Indirect Institutional Costs (G + H)	712,441.00

J. Fee	Funds Requested ($)*

K. Total Costs and Fee	Funds Requested ($)*
	712,441.00

L. Budget Justification* File Name:
EHA_NIAID_CC[illegible]_BUDGET_JUSTIFICATION_FINAL.pdf
(Only attach one file.)

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

the use in field across Year 1-5; 3) $4[illegible] for nitrile gloves (~3,000 IND) for sampling work for Year 1-5.

Cold Chain Ma[illegible] for preserve[illegible] nitrogen dry shippers for biological sa[illegible] The expense is calculated at the rate of $1,349 each, with 1 purchased per year from Year 1-3 totaling $4,047.

Equipment ($[illegible] [illegible] be purc[illegible].

Other Costs ([illegible] We request 1) a total of $1,2[illegible]5 for specim[illegible] transportation or delivery from the field to partn[illegible] labs from Year 1-5, at the rate of $85/delivery with [illegible] 2) a total of $[illegible] for rabies and tetanus vaccination. Field team members from Year 1-5, at the rate of $199/year/person.

H. Indirect Costs

We are requesting the EcoHealth Alliance federally approved indirect cost rate of 52.7% on all applicable direct costs. Indirect is taken only on the first $25,000 for each consortium/contractual agreement in each year. As there are 3 (W[illegible] Institute of [illegible] versity of North Carolin[illegible] a total of $24,[illegible] ($8,[illegible] x 5) is requested as indirect costs on consortium/contractual/subaward agreements. This is [illegible] uded as part of direct cost calculations and is only will be taken on consortium/co[illegible]