

RESEARCH & RELATED BUDGET - SECTION A & B, Budget Period 3

ORGANIZATIONAL DUNS\*: 5861922530000

Budget Type\*:  Project  Subaward/Consortium

Enter name of Organization: Duke NUS Medical School

Start Date\*: 03-01-2022

End Date\*: 02-28-2023

Budget Period: 3

A. Senior/Key Person													
Prefix	First Name*	Middle Name	Last Name*	Suffix	Project Role*	Base Salary (\$)	Calendar Months	Academic Months	Summer Months	Requested Salary (\$)*	Fringe Benefits (\$)*	Funds Requested (\$)*	
1 . Dr.	Linfa		Wang		Co-Investigator							(b) (4), (b) (6)	
2 . Dr.	Danielle		Anderson		Co-Investigator							(b) (4), (b) (6)	
<b>Total Funds Requested for all Senior Key Persons in the attached file</b>													
<b>Additional Senior Key Persons:</b>											File Name:	<b>Total Senior/Key Person</b>	(b) (4), (b) (6)

B. Other Personnel							
Number of Personnel*	Project Role*	Calendar Months	Academic Months	Summer Months	Requested Salary (\$)*	Fringe Benefits*	Funds Requested (\$)*
1	Post Doctoral Associates						(b) (4), (b) (6)
	Graduate Students						
	Undergraduate Students						
	Secretarial/Clerical						
1	<b>Total Number Other Personnel</b>					<b>Total Other Personnel</b>	(b) (4), (b) (6)
<b>Total Salary, Wages and Fringe Benefits (A+B)</b>							

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

## RESEARCH & RELATED BUDGET - SECTION C, D, & E, Budget Period 3

**ORGANIZATIONAL DUNS\*:** 5861922530000

**Budget Type\*:**     Project     Subaward/Consortium

**Organization:** Duke NUS Medical School

**Start Date\*:** 03-01-2022

**End Date\*:** 02-28-2023

**Budget Period:** 3

<b>C. Equipment Description</b>		<b>Funds Requested (\$)*</b>
List items and dollar amount for each item exceeding \$5,000		
<b>Equipment Item</b>		
<b>Total funds requested for all equipment listed in the attached file</b>		
<b>Total Equipment</b>		<b>0.00</b>
<b>Additional Equipment:</b> File Name:		

<b>D. Travel</b>		<b>Funds Requested (\$)*</b>
1. Domestic Travel Costs ( Incl. Canada, Mexico, and U.S. Possessions)		
2. Foreign Travel Costs		
<b>Total Travel Cost</b>		<b>5,000.00</b>

<b>E. Participant/Trainee Support Costs</b>		<b>Funds Requested (\$)*</b>
1. Tuition/Fees/Health Insurance		
2. Stipends		
3. Travel		
4. Subsistence		
5. Other:		
<b>Number of Participants/Trainees</b>		<b>0.00</b>
<b>Total Participant Trainee Support Costs</b>		<b>0.00</b>

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

## RESEARCH & RELATED BUDGET - SECTIONS F-K, Budget Period 3

**ORGANIZATIONAL DUNS\*:** 5861922530000

**Budget Type\*:**     Project     Subaward/Consortium

**Organization:** Duke NUS Medical School

**Start Date\*:** 03-01-2022

**End Date\*:** 02-28-2023

**Budget Period:** 3

<b>F. Other Direct Costs</b>	<b>Funds Requested (\$)*</b>
1. Materials and Supplies	10,329.00
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. Scientific services	14,500.00
<b>Total Other Direct Costs</b>	<b>24,829.00</b>

<b>G. Direct Costs</b>	<b>Funds Requested (\$)*</b>
<b>Total Direct Costs (A thru F)</b>	<b>100,000.00</b>

<b>H. Indirect Costs</b>			
<b>Indirect Cost Type</b>	<b>Indirect Cost Rate (%)</b>	<b>Indirect Cost Base (\$)</b>	<b>Funds Requested (\$)*</b>
1. Facilities and Administrative costs	8.0		8,000.00
<b>Total Indirect Costs</b>			<b>8,000.00</b>
<b>Cognizant Federal Agency</b>			
(Agency Name, POC Name, and POC Phone Number)			

<b>I. Total Direct and Indirect Costs</b>	<b>Funds Requested (\$)*</b>
<b>Total Direct and Indirect Institutional Costs (G + H)</b>	<b>108,000.00</b>

<b>J. Fee</b>	<b>Funds Requested (\$)*</b>

<b>K. Total Costs and Fee</b>	<b>Funds Requested (\$)*</b>
	<b>108,000.00</b>

<b>L. Budget Justification*</b>
File Name: DUKE_NUS_EIDRC_2019_Subawardbudget_Justification_v01- LW-DEA_FINAL.pdf (Only attach one file.)

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

RESEARCH & RELATED BUDGET - SECTION A & B, Budget Period 4

ORGANIZATIONAL DUNS\*: 5861922530000

Budget Type\*:  Project  Subaward/Consortium

Enter name of Organization: Duke NUS Medical School

Start Date\*: 03-01-2023

End Date\*: 02-29-2024

Budget Period: 4

A. Senior/Key Person												
Prefix	First Name*	Middle Name	Last Name*	Suffix	Project Role*	Base Salary (\$)	Calendar Months	Academic Months	Summer Months	Requested Salary (\$)*	Fringe Benefits (\$)*	Funds Requested (\$)*
1 . Dr.	Linfa		Wang		Co-Investigator							(b) (4), (b) (6)
2 . Dr.	Danielle		Anderson		Co-Investigator							(b) (4), (b) (6)
<b>Total Funds Requested for all Senior Key Persons in the attached file</b>											(b) (4), (b) (6)	
<b>Additional Senior Key Persons:</b> File Name:											<b>Total Senior/Key Person</b>	(b) (4), (b) (6)

B. Other Personnel							
Number of Personnel*	Project Role*	Calendar Months	Academic Months	Summer Months	Requested Salary (\$)*	Fringe Benefits*	Funds Requested (\$)*
1	Post Doctoral Associates						(b) (4), (b) (6)
	Graduate Students						
	Undergraduate Students						
	Secretarial/Clerical						
1	<b>Total Number Other Personnel</b>					<b>Total Other Personnel</b>	(b) (4), (b) (6)
<b>Total Salary, Wages and Fringe Benefits (A+B)</b>							(b) (4), (b) (6)

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

## RESEARCH & RELATED BUDGET - SECTION C, D, & E, Budget Period 4

**ORGANIZATIONAL DUNS\*:** 5861922530000

**Budget Type\*:**     Project     Subaward/Consortium

**Organization:** Duke NUS Medical School

**Start Date\*:** 03-01-2023

**End Date\*:** 02-29-2024

**Budget Period:** 4

<b>C. Equipment Description</b>		<b>Funds Requested (\$)*</b>
List items and dollar amount for each item exceeding \$5,000		
<b>Equipment Item</b>		
<b>Total funds requested for all equipment listed in the attached file</b>		
	<b>Total Equipment</b>	<b>0.00</b>
<b>Additional Equipment:</b> File Name:		

<b>D. Travel</b>		<b>Funds Requested (\$)*</b>
1. Domestic Travel Costs ( Incl. Canada, Mexico, and U.S. Possessions)		
2. Foreign Travel Costs		5,000.00
	<b>Total Travel Cost</b>	<b>5,000.00</b>

<b>E. Participant/Trainee Support Costs</b>		<b>Funds Requested (\$)*</b>
1. Tuition/Fees/Health Insurance		
2. Stipends		
3. Travel		
4. Subsistence		
5. Other:		
<b>Number of Participants/Trainees</b>	<b>Total Participant Trainee Support Costs</b>	<b>0.00</b>

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

## RESEARCH & RELATED BUDGET - SECTIONS F-K, Budget Period 4

**ORGANIZATIONAL DUNS\*:** 5861922530000

**Budget Type\*:**     Project     Subaward/Consortium

**Organization:** Duke NUS Medical School

**Start Date\*:** 03-01-2023

**End Date\*:** 02-29-2024

**Budget Period:** 4

<b>F. Other Direct Costs</b>	<b>Funds Requested (\$)*</b>
1. Materials and Supplies	9,236.00
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. Scientific services	14,500.00
<b>Total Other Direct Costs</b>	<b>23,736.00</b>

<b>G. Direct Costs</b>	<b>Funds Requested (\$)*</b>
<b>Total Direct Costs (A thru F)</b>	<b>100,000.00</b>

<b>H. Indirect Costs</b>			
<b>Indirect Cost Type</b>	<b>Indirect Cost Rate (%)</b>	<b>Indirect Cost Base (\$)</b>	<b>Funds Requested (\$)*</b>
1. Facilities and administrative costs	8.0		8,000.00
<b>Total Indirect Costs</b>			<b>8,000.00</b>
<b>Cognizant Federal Agency</b>			
(Agency Name, POC Name, and POC Phone Number)			

<b>I. Total Direct and Indirect Costs</b>	<b>Funds Requested (\$)*</b>
<b>Total Direct and Indirect Institutional Costs (G + H)</b>	<b>108,000.00</b>

<b>J. Fee</b>	<b>Funds Requested (\$)*</b>

<b>K. Total Costs and Fee</b>	<b>Funds Requested (\$)*</b>
	<b>108,000.00</b>

<b>L. Budget Justification*</b>
File Name: DUKE_NUS_EIDRC_2019_Subawardbudget_Justification_v01- LW-DEA_FINAL.pdf (Only attach one file.)

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

RESEARCH & RELATED BUDGET - SECTION A & B, Budget Period 5

ORGANIZATIONAL DUNS\*: 5861922530000

Budget Type\*:  Project  Subaward/Consortium

Enter name of Organization: Duke NUS Medical School

Start Date\*: 03-01-2024

End Date\*: 02-28-2025

Budget Period: 5

A. Senior/Key Person												
Prefix	First Name*	Middle Name	Last Name*	Suffix	Project Role*	Base Salary (\$)	Calendar Months	Academic Months	Summer Months	Requested Salary (\$)*	Fringe Benefits (\$)*	Funds Requested (\$)*
1 . Dr.	Linfa		Wang		Co-Investigator							(b) (4), (b) (6)
2 . Dr.	Danielle		Anderson		Co-Investigator							(b) (4), (b) (6)
<b>Total Funds Requested for all Senior Key Persons in the attached file</b>											(b) (4), (b) (6)	
<b>Additional Senior Key Persons:</b>											<b>Total Senior/Key Person</b>	(b) (4), (b) (6)

B. Other Personnel							
Number of Personnel*	Project Role*	Calendar Months	Academic Months	Summer Months	Requested Salary (\$)*	Fringe Benefits*	Funds Requested (\$)*
1	Post Doctoral Associates						(b) (4), (b) (6)
	Graduate Students						
	Undergraduate Students						
	Secretarial/Clerical						
1	<b>Total Number Other Personnel</b>					<b>Total Other Personnel</b>	(b) (4), (b) (6)
<b>Total Salary, Wages and Fringe Benefits (A+B)</b>							(b) (4), (b) (6)

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

## RESEARCH & RELATED BUDGET - SECTION C, D, & E, Budget Period 5

**ORGANIZATIONAL DUNS\*:** 5861922530000

**Budget Type\*:**     Project     Subaward/Consortium

**Organization:** Duke NUS Medical School

**Start Date\*:** 03-01-2024

**End Date\*:** 02-28-2025

**Budget Period:** 5

<b>C. Equipment Description</b>	
List items and dollar amount for each item exceeding \$5,000	
<b>Equipment Item</b>	<b>Funds Requested (\$)*</b>
<b>Total funds requested for all equipment listed in the attached file</b>	
<b>Total Equipment</b>	<b>0.00</b>
<b>Additional Equipment:</b> File Name:	

<b>D. Travel</b>	
1. Domestic Travel Costs ( Incl. Canada, Mexico, and U.S. Possessions)	
2. Foreign Travel Costs	
<b>Total Travel Cost</b>	<b>5,000.00</b>

<b>E. Participant/Trainee Support Costs</b>	
1. Tuition/Fees/Health Insurance	
2. Stipends	
3. Travel	
4. Subsistence	
5. Other:	
<b>Number of Participants/Trainees</b>	<b>Total Participant Trainee Support Costs</b>
	<b>0.00</b>

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



## RESEARCH & RELATED BUDGET - SECTIONS F-K, Budget Period 5

**ORGANIZATIONAL DUNS\*:** 5861922530000

**Budget Type\*:**     Project     Subaward/Consortium

**Organization:** Duke NUS Medical School

**Start Date\*:** 03-01-2024

**End Date\*:** 02-28-2025

**Budget Period:** 5

<b>F. Other Direct Costs</b>	<b>Funds Requested (\$)*</b>
1. Materials and Supplies	8,141.00
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. Scientific services	14,500.00
<b>Total Other Direct Costs</b>	<b>22,641.00</b>

<b>G. Direct Costs</b>	<b>Funds Requested (\$)*</b>
<b>Total Direct Costs (A thru F)</b>	<b>100,000.00</b>

<b>H. Indirect Costs</b>			
<b>Indirect Cost Type</b>	<b>Indirect Cost Rate (%)</b>	<b>Indirect Cost Base (\$)</b>	<b>Funds Requested (\$)*</b>
1. Facilities and administrative costs	8.0		8,000.00
<b>Total Indirect Costs</b>			<b>8,000.00</b>
<b>Cognizant Federal Agency</b>			
(Agency Name, POC Name, and POC Phone Number)			

<b>I. Total Direct and Indirect Costs</b>	<b>Funds Requested (\$)*</b>
<b>Total Direct and Indirect Institutional Costs (G + H)</b>	<b>108,000.00</b>

<b>J. Fee</b>	<b>Funds Requested (\$)*</b>

<b>K. Total Costs and Fee</b>	<b>Funds Requested (\$)*</b>
	<b>108,000.00</b>

<b>L. Budget Justification*</b>
File Name: DUKE_NUS_EIDRC_2019_Subawardbudget_Justification_v01- LW-DEA_FINAL.pdf (Only attach one file.)

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

## **DUKE-NATIONAL SINGAPORE UNIVERSITY BUDGET JUSTIFICATION, SUBAWARD**

### **A. Senior/Key Personnel**

Linfa Wang, PhD Co-Investigator will commit (b) (4), (b) (6) to this project. Dr. Wang is a well-known expert in cross species transmission and pathogenesis of emerging bat viruses, including coronaviruses and henipaviruses and has been an international leader of the field for over 25 years. Dr. Wang will lead and supervise the Duke-NUS team to develop multiplex diagnostic platforms for testing of various field samples generated in this project.

Danielle Anderson, PhD Co-Investigator will commit (b) (4), (b) (6) to this project. Dr. Anderson has over 15 years of research studying RNA virus replication and is the scientific director of the Duke-NUS ABSL3 facility. Dr. Anderson will co-lead the Duke-NUS team with focus on international liaison and experiments involving animal samples.

### **B. Other Personnel**

A research fellow will be hired and he/she will commit (b) (4), (b) (6) to this project. The research fellow will be a skilled virologist/immunologist/molecular biologist and will develop the molecular and serology platforms to test the samples collected in this project. The RF will also be mainly responsible for data analysis, data presentation with the extended team of this large project and play a key role in manuscript preparation. In addition, the RF may also be required to supervise junior technical staff or students should the need arises.

### **Fringe Benefits.**

Fringe benefits are included in the direct cost requested for each personnel. The rate is inclusive of employee benefits according to the Duke-NUS Medical School's HR policy. This includes 17% retirement for Singapore citizens, \$855 (S\$1,200) housing allowance for foreigners and \$1,200 for health insurance.

### **C. Equipment**

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

### **D. Travel**

*Domestic travel.* Not requested.

*Foreign Travel.* 1 trip for Co-Investigator(s) and additional personnel (1) to EHA in NYC (3-to-4-days) and NIH in DC (2-days) is estimated at \$5,000.00 USD per person per year.

### **E. Participant/Trainee Support Costs**

*No participant/trainee support costs are requested.*

### **F. Other Direct Costs**

*Materials and Supplies.* A variety of culture media and serum (\$3,000), DNA/RNA extraction and purification kits (\$5,000), PCR reagents (\$2000) an assortment of miscellaneous supplies (e.g., gloves, chemicals, plasticware, etc.)((\$2000) are needed during the course of the program to develop the serology assays and test the samples.

*Other.* Scientific services. Funds are requested to cover the costs of next-generation sequencing of the samples.

### **H. Indirect Costs (8%)**

The facilities and administrative rate is at 8% of the total direct costs.

**RESEARCH & RELATED BUDGET - Cumulative Budget**

	Totals (\$)	
Section A, Senior/Key Person		15,884.00
Section B, Other Personnel		335,000.00
Total Number Other Personnel	5	
Total Salary, Wages and Fringe Benefits (A+B)		350,884.00
Section C, Equipment		0.00
Section D, Travel		25,000.00
1. Domestic	0.00	
2. Foreign	25,000.00	
Section E, Participant/Trainee Support Costs		0.00
1. Tuition/Fees/Health Insurance	0.00	
2. Stipends	0.00	
3. Travel	0.00	
4. Subsistence	0.00	
5. Other	0.00	
6. Number of Participants/Trainees	0	
Section F, Other Direct Costs		124,116.00
1. Materials and Supplies	51,616.00	
2. Publication Costs	0.00	
3. Consultant Services	0.00	
4. ADP/Computer Services	0.00	
5. Subawards/Consortium/Contractual Costs	0.00	
6. Equipment or Facility Rental/User Fees	0.00	
7. Alterations and Renovations	0.00	
8. Other 1	72,500.00	
9. Other 2	0.00	
10. Other 3	0.00	
Section G, Direct Costs (A thru F)		500,000.00
Section H, Indirect Costs		40,000.00
Section I, Total Direct and Indirect Costs (G + H)		540,000.00
Section J, Fee		0.00
Section K, Total Costs and Fee (I + J)		540,000.00

RESEARCH & RELATED BUDGET - SECTION A & B, Budget Period 1

ORGANIZATIONAL DUNS\*: 1446765660000

Budget Type\*:  Project  Subaward/Consortium

Enter name of Organization: The Henry M. Jackson Fdn. for the Adv'mt. of Mil. Med., Inc.

Start Date\*: 03-01-2020

End Date\*: 02-28-2021

Budget Period: 1

A. Senior/Key Person													
Prefix	First Name*	Middle Name	Last Name*	Suffix	Project Role*	Base Salary (\$)	Calendar Months	Academic Months	Summer Months	Requested Salary (\$)*	Fringe Benefits (\$)*	Funds Requested (\$)*	
1.	Christopher		Broder	PhD	Co-Investigator							(b) (4), (b) (6)	
2.	Eric		Laing	PhD	Co-Investigator								
<b>Total Funds Requested for all Senior Key Persons in the attached file</b>													
<b>Additional Senior Key Persons:</b>											File Name:	<b>Total Senior/Key Person</b>	(b) (4), (b) (6)

B. Other Personnel							
Number of Personnel*	Project Role*	Calendar Months	Academic Months	Summer Months	Requested Salary (\$)*	Fringe Benefits*	Funds Requested (\$)*
	Post Doctoral Associates						
	Graduate Students						
	Undergraduate Students						
	Secretarial/Clerical						
1	Research Assistant						(b) (4), (b) (6)
1	<b>Total Number Other Personnel</b>					<b>Total Other Personnel</b>	(b) (4), (b) (6)
<b>Total Salary, Wages and Fringe Benefits (A+B)</b>							

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

## RESEARCH & RELATED BUDGET - SECTION C, D, & E, Budget Period 1

**ORGANIZATIONAL DUNS\*:** 1446765660000

**Budget Type\*:**     Project     Subaward/Consortium

**Organization:** The Henry M. Jackson Fdn. for the Adv'mt. of Mil. Med., Inc.

**Start Date\*:** 03-01-2020

**End Date\*:** 02-28-2021

**Budget Period:** 1

<b>C. Equipment Description</b>		<b>Funds Requested (\$)*</b>
List items and dollar amount for each item exceeding \$5,000		
<b>Equipment Item</b>		
<b>Total funds requested for all equipment listed in the attached file</b>		
	<b>Total Equipment</b>	<b>0.00</b>
<b>Additional Equipment:</b> File Name:		

<b>D. Travel</b>		<b>Funds Requested (\$)*</b>
1. Domestic Travel Costs ( Incl. Canada, Mexico, and U.S. Possessions)		3,500.00
2. Foreign Travel Costs		18,500.00
	<b>Total Travel Cost</b>	<b>22,000.00</b>

<b>E. Participant/Trainee Support Costs</b>		<b>Funds Requested (\$)*</b>
1. Tuition/Fees/Health Insurance		
2. Stipends		
3. Travel		
4. Subsistence		
5. Other:		
<b>Number of Participants/Trainees</b>	<b>Total Participant Trainee Support Costs</b>	<b>0.00</b>

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

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

**ORGANIZATIONAL DUNS\*:** 1446765660000

**Budget Type\*:**     Project     Subaward/Consortium

**Organization:** The Henry M. Jackson Fdn. for the Adv'mt. of Mil. Med., Inc.

**Start Date\*:** 03-01-2020

**End Date\*:** 02-28-2021

**Budget Period:** 1

<b>F. Other Direct Costs</b>	<b>Funds Requested (\$)*</b>
1. Materials and Supplies	41,439.00
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. AKTA Service Contract	4,500.00
<b>Total Other Direct Costs</b>	<b>45,939.00</b>

<b>G. Direct Costs</b>	<b>Funds Requested (\$)*</b>
<b>Total Direct Costs (A thru F)</b>	<b>74,999.99</b>

<b>H. Indirect Costs</b>			
<b>Indirect Cost Type</b>	<b>Indirect Cost Rate (%)</b>	<b>Indirect Cost Base (\$)</b>	<b>Funds Requested (\$)*</b>
1. USU Indirect Cost Rate FY20	30.45	74,999.99	22,837.50
2. HJF Companywide G&A FY20	16.9	97,837.48	16,534.53
		<b>Total Indirect Costs</b>	<b>39,372.03</b>
<b>Cognizant Federal Agency</b>		USAMRAA, Jennifer C. Jackson, 301-619-2054	
(Agency Name, POC Name, and POC Phone Number)			

<b>I. Total Direct and Indirect Costs</b>	<b>Funds Requested (\$)*</b>
<b>Total Direct and Indirect Institutional Costs (G + H)</b>	<b>114,372.02</b>

<b>J. Fee</b>	<b>Funds Requested (\$)*</b>

<b>K. Total Costs and Fee</b>	<b>Funds Requested (\$)*</b>
	<b>114,372.02</b>

<b>L. Budget Justification*</b>
File Name: Budget_Justification_Broder_SE_Asia_(1).pdf (Only attach one file.)

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

RESEARCH & RELATED BUDGET - SECTION A & B, Budget Period 2

ORGANIZATIONAL DUNS\*: 1446765660000

Budget Type\*:  Project  Subaward/Consortium

Enter name of Organization: The Henry M. Jackson Fdn. for the Adv'mt. of Mil. Med., Inc.

Start Date\*: 03-01-2021

End Date\*: 02-28-2022

Budget Period: 2

A. Senior/Key Person												
Prefix	First Name*	Middle Name	Last Name*	Suffix	Project Role*	Base Salary (\$)	Calendar Months	Academic Months	Summer Months	Requested Salary (\$)*	Fringe Benefits (\$)*	Funds Requested (\$)*
1.	Christopher		Broder	PhD	Co-Investigator							(b) (4), (b) (6)
2.	Eric		Laing	PhD	Co-Investigator							(b) (4), (b) (6)
Total Funds Requested for all Senior Key Persons in the attached file												
Additional Senior Key Persons: File Name:											Total Senior/Key Person	(b) (4), (b) (6)

B. Other Personnel							
Number of Personnel*	Project Role*	Calendar Months	Academic Months	Summer Months	Requested Salary (\$)*	Fringe Benefits*	Funds Requested (\$)*
	Post Doctoral Associates						
	Graduate Students						
	Undergraduate Students						
	Secretarial/Clerical						
1	Research Assistant						(b) (4), (b) (6)
1	<b>Total Number Other Personnel</b>					<b>Total Other Personnel</b>	(b) (4), (b) (6)
<b>Total Salary, Wages and Fringe Benefits (A+B)</b>							

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

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

**ORGANIZATIONAL DUNS\*:** 1446765660000

**Budget Type\*:**     Project     Subaward/Consortium

**Organization:** The Henry M. Jackson Fdn. for the Adv'mt. of Mil. Med., Inc.

**Start Date\*:** 03-01-2021

**End Date\*:** 02-28-2022

**Budget Period:** 2

<b>C. Equipment Description</b>		<b>Funds Requested (\$)*</b>
List items and dollar amount for each item exceeding \$5,000		
<b>Equipment Item</b>		
<b>Total funds requested for all equipment listed in the attached file</b>		
<b>Total Equipment</b>		<b>0.00</b>
<b>Additional Equipment:</b> File Name:		

<b>D. Travel</b>		<b>Funds Requested (\$)*</b>
1. Domestic Travel Costs ( Incl. Canada, Mexico, and U.S. Possessions)		3,500.00
2. Foreign Travel Costs		18,500.00
<b>Total Travel Cost</b>		<b>22,000.00</b>

<b>E. Participant/Trainee Support Costs</b>		<b>Funds Requested (\$)*</b>
1. Tuition/Fees/Health Insurance		
2. Stipends		
3. Travel		
4. Subsistence		
5. Other:		
<b>Number of Participants/Trainees</b>		<b>0.00</b>
<b>Total Participant Trainee Support Costs</b>		<b>0.00</b>

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



## RESEARCH & RELATED BUDGET - SECTIONS F-K, Budget Period 2

**ORGANIZATIONAL DUNS\*:** 1446765660000

**Budget Type\*:**     Project     Subaward/Consortium

**Organization:** The Henry M. Jackson Fdn. for the Adv'mt. of Mil. Med., Inc.

**Start Date\*:** 03-01-2021

**End Date\*:** 02-28-2022

**Budget Period:** 2

F. Other Direct Costs	Funds Requested (\$)*
1. Materials and Supplies	41,439.00
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. AKTA Service Contract	4,500.00
<b>Total Other Direct Costs</b>	<b>45,939.00</b>

G. Direct Costs	Funds Requested (\$)*
<b>Total Direct Costs (A thru F)</b>	<b>74,999.99</b>

H. Indirect Costs			
Indirect Cost Type	Indirect Cost Rate (%)	Indirect Cost Base (\$)	Funds Requested (\$)*
1. USU Indirect Cost Rate FY20	30.45	74,999.99	22,837.50
2. HJF Companywide G&A FY20	16.9	97,837.48	16,534.53
		<b>Total Indirect Costs</b>	<b>39,372.03</b>
<b>Cognizant Federal Agency</b>		USAMRAA, Jennifer C. Jackson, 301-619-2054	
(Agency Name, POC Name, and POC Phone Number)			

I. Total Direct and Indirect Costs	Funds Requested (\$)*
<b>Total Direct and Indirect Institutional Costs (G + H)</b>	<b>114,372.02</b>

J. Fee	Funds Requested (\$)*

K. Total Costs and Fee	Funds Requested (\$)*
	<b>114,372.02</b>

L. Budget Justification*
File Name: Budget_Justification_Broder_SE_Asia_(1).pdf (Only attach one file.)

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

RESEARCH & RELATED BUDGET - SECTION A & B, Budget Period 3

ORGANIZATIONAL DUNS\*: 1446765660000

Budget Type\*:  Project  Subaward/Consortium

Enter name of Organization: The Henry M. Jackson Fdn. for the Adv'mt. of Mil. Med., Inc.

Start Date\*: 03-01-2022

End Date\*: 02-28-2023

Budget Period: 3

A. Senior/Key Person												
Prefix	First Name*	Middle Name	Last Name*	Suffix	Project Role*	Base Salary (\$)	Calendar Months	Academic Months	Summer Months	Requested Salary (\$)*	Fringe Benefits (\$)*	Funds Requested (\$)*
1.	Christopher		Broder	PhD	Co-Investigator							(b) (4), (b) (6)
2.	Eric		Laing	PhD	Co-Investigator							(b) (4), (b) (6)
Total Funds Requested for all Senior Key Persons in the attached file											(b) (4), (b) (6)	
Additional Senior Key Persons: File Name:											Total Senior/Key Person	(b) (4), (b) (6)

B. Other Personnel							
Number of Personnel*	Project Role*	Calendar Months	Academic Months	Summer Months	Requested Salary (\$)*	Fringe Benefits*	Funds Requested (\$)*
	Post Doctoral Associates						
	Graduate Students						
	Undergraduate Students						
	Secretarial/Clerical						
1	Research Assistant						(b) (4), (b) (6)
1	<b>Total Number Other Personnel</b>					<b>Total Other Personnel</b>	(b) (4), (b) (6)
<b>Total Salary, Wages and Fringe Benefits (A+B)</b>							(b) (4), (b) (6)

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

## RESEARCH & RELATED BUDGET - SECTION C, D, & E, Budget Period 3

**ORGANIZATIONAL DUNS\*:** 1446765660000

**Budget Type\*:**     Project     Subaward/Consortium

**Organization:** The Henry M. Jackson Fdn. for the Adv'mt. of Mil. Med., Inc.

**Start Date\*:** 03-01-2022

**End Date\*:** 02-28-2023

**Budget Period:** 3

<b>C. Equipment Description</b>		<b>Funds Requested (\$)*</b>
List items and dollar amount for each item exceeding \$5,000		
<b>Equipment Item</b>		
<b>Total funds requested for all equipment listed in the attached file</b>		
<b>Total Equipment</b>		<b>0.00</b>
<b>Additional Equipment:</b> File Name:		

<b>D. Travel</b>	<b>Funds Requested (\$)*</b>
1. Domestic Travel Costs ( Incl. Canada, Mexico, and U.S. Possessions)	3,500.00
2. Foreign Travel Costs	18,500.00
<b>Total Travel Cost</b>	<b>22,000.00</b>

<b>E. Participant/Trainee Support Costs</b>	<b>Funds Requested (\$)*</b>
1. Tuition/Fees/Health Insurance	
2. Stipends	
3. Travel	
4. Subsistence	
5. Other:	
<b>Number of Participants/Trainees</b>	
<b>Total Participant Trainee Support Costs</b>	<b>0.00</b>

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

## RESEARCH & RELATED BUDGET - SECTIONS F-K, Budget Period 3

**ORGANIZATIONAL DUNS\*:** 1446765660000

**Budget Type\*:**     Project     Subaward/Consortium

**Organization:** The Henry M. Jackson Fdn. for the Adv'mt. of Mil. Med., Inc.

**Start Date\*:** 03-01-2022

**End Date\*:** 02-28-2023

**Budget Period:** 3

F. Other Direct Costs	Funds Requested (\$)*
1. Materials and Supplies	41,439.00
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. AKTA Service Contract	4,500.00
<b>Total Other Direct Costs</b>	<b>45,939.00</b>

G. Direct Costs	Funds Requested (\$)*
<b>Total Direct Costs (A thru F)</b>	<b>74,999.99</b>

H. Indirect Costs			
Indirect Cost Type	Indirect Cost Rate (%)	Indirect Cost Base (\$)	Funds Requested (\$)*
1. USU Indirect Cost Rate FY20	30.45	74,999.99	22,837.50
2. HJF Companywide G&A FY20	16.9	97,837.48	16,534.53
		<b>Total Indirect Costs</b>	<b>39,372.03</b>
<b>Cognizant Federal Agency</b>		USAMRAA, Jennifer C. Jackson, 301-619-2054	
(Agency Name, POC Name, and POC Phone Number)			

I. Total Direct and Indirect Costs	Funds Requested (\$)*
<b>Total Direct and Indirect Institutional Costs (G + H)</b>	<b>114,372.02</b>

J. Fee	Funds Requested (\$)*

K. Total Costs and Fee	Funds Requested (\$)*
	<b>114,372.02</b>

L. Budget Justification*
File Name: Budget_Justification_Broder_SE_Asia_(1).pdf (Only attach one file.)

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

RESEARCH & RELATED BUDGET - SECTION A & B, Budget Period 4

ORGANIZATIONAL DUNS\*: 1446765660000

Budget Type\*:  Project  Subaward/Consortium

Enter name of Organization: The Henry M. Jackson Fdn. for the Adv'mt. of Mil. Med., Inc.

Start Date\*: 03-01-2023

End Date\*: 02-29-2024

Budget Period: 4

A. Senior/Key Person												
Prefix	First Name*	Middle Name	Last Name*	Suffix	Project Role*	Base Salary (\$)	Calendar Months	Academic Months	Summer Months	Requested Salary (\$)*	Fringe Benefits (\$)*	Funds Requested (\$)*
1.	Christopher		Broder	PhD	Co-Investigator							(b) (4), (b) (6)
2.	Eric		Laing	PhD	Co-Investigator							(b) (4), (b) (6)
<b>Total Funds Requested for all Senior Key Persons in the attached file</b>												
<b>Additional Senior Key Persons:</b>											<b>Total Senior/Key Person</b>	(b) (4), (b) (6)

B. Other Personnel							
Number of Personnel*	Project Role*	Calendar Months	Academic Months	Summer Months	Requested Salary (\$)*	Fringe Benefits*	Funds Requested (\$)*
	Post Doctoral Associates						
	Graduate Students						
	Undergraduate Students						
	Secretarial/Clerical						
1	Research Assistant						(b) (4), (b) (6)
1	<b>Total Number Other Personnel</b>					<b>Total Other Personnel</b>	(b) (4), (b) (6)
<b>Total Salary, Wages and Fringe Benefits (A+B)</b>							(b) (4), (b) (6)

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

## RESEARCH & RELATED BUDGET - SECTION C, D, & E, Budget Period 4

**ORGANIZATIONAL DUNS\*:** 1446765660000

**Budget Type\*:**     Project     Subaward/Consortium

**Organization:** The Henry M. Jackson Fdn. for the Adv'mt. of Mil. Med., Inc.

**Start Date\*:** 03-01-2023

**End Date\*:** 02-29-2024

**Budget Period:** 4

<b>C. Equipment Description</b>		<b>Funds Requested (\$)*</b>
List items and dollar amount for each item exceeding \$5,000		
<b>Equipment Item</b>		
<b>Total funds requested for all equipment listed in the attached file</b>		
<b>Total Equipment</b>		<b>0.00</b>
<b>Additional Equipment:</b> File Name:		

<b>D. Travel</b>	<b>Funds Requested (\$)*</b>
1. Domestic Travel Costs ( Incl. Canada, Mexico, and U.S. Possessions)	3,500.00
2. Foreign Travel Costs	18,500.00
<b>Total Travel Cost</b>	<b>22,000.00</b>

<b>E. Participant/Trainee Support Costs</b>	<b>Funds Requested (\$)*</b>
1. Tuition/Fees/Health Insurance	
2. Stipends	
3. Travel	
4. Subsistence	
5. Other:	
<b>Number of Participants/Trainees</b>	
<b>Total Participant Trainee Support Costs</b>	<b>0.00</b>

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

## RESEARCH & RELATED BUDGET - SECTIONS F-K, Budget Period 4

**ORGANIZATIONAL DUNS\*:** 1446765660000

**Budget Type\*:**     Project     Subaward/Consortium

**Organization:** The Henry M. Jackson Fdn. for the Adv'mt. of Mil. Med., Inc.

**Start Date\*:** 03-01-2023

**End Date\*:** 02-29-2024

**Budget Period:** 4

F. Other Direct Costs	Funds Requested (\$)*
1. Materials and Supplies	41,439.00
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. AKTA Service Contract	4,500.00
<b>Total Other Direct Costs</b>	<b>45,939.00</b>

G. Direct Costs	Funds Requested (\$)*
<b>Total Direct Costs (A thru F)</b>	<b>74,999.99</b>

H. Indirect Costs			
Indirect Cost Type	Indirect Cost Rate (%)	Indirect Cost Base (\$)	Funds Requested (\$)*
1. USU Indirect Cost Rate FY20	30.45	74,999.99	22,837.50
2. HJF Companywide G&A FY20	16.9	97,837.48	16,534.53
		<b>Total Indirect Costs</b>	<b>39,372.03</b>
<b>Cognizant Federal Agency</b>		USAMRAA, Jennifer C. Jackson, 301-619-2054	
(Agency Name, POC Name, and POC Phone Number)			

I. Total Direct and Indirect Costs	Funds Requested (\$)*
<b>Total Direct and Indirect Institutional Costs (G + H)</b>	<b>114,372.02</b>

J. Fee	Funds Requested (\$)*

K. Total Costs and Fee	Funds Requested (\$)*
	<b>114,372.02</b>

L. Budget Justification*
File Name: Budget_Justification_Broder_SE_Asia_(1).pdf (Only attach one file.)

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

RESEARCH & RELATED BUDGET - SECTION A & B, Budget Period 5

ORGANIZATIONAL DUNS\*: 1446765660000

Budget Type\*:  Project  Subaward/Consortium

Enter name of Organization: The Henry M. Jackson Fdn. for the Adv'mt. of Mil. Med., Inc.

Start Date\*: 03-01-2024

End Date\*: 02-28-2025

Budget Period: 5

A. Senior/Key Person												
Prefix	First Name*	Middle Name	Last Name*	Suffix	Project Role*	Base Salary (\$)	Calendar Months	Academic Months	Summer Months	Requested Salary (\$)*	Fringe Benefits (\$)*	Funds Requested (\$)*
1.	Christopher		Broder	PhD	Co-Investigator							(b) (4), (b) (6)
2.	Eric		Laing	PhD	Co-Investigator							(b) (4), (b) (6)
<b>Total Funds Requested for all Senior Key Persons in the attached file</b>												
<b>Additional Senior Key Persons:</b>											<b>Total Senior/Key Person</b>	(b) (4), (b) (6)

B. Other Personnel							
Number of Personnel*	Project Role*	Calendar Months	Academic Months	Summer Months	Requested Salary (\$)*	Fringe Benefits*	Funds Requested (\$)*
	Post Doctoral Associates						
	Graduate Students						
	Undergraduate Students						
	Secretarial/Clerical						
1	Research Assistant						(b) (4), (b) (6)
1	<b>Total Number Other Personnel</b>					<b>Total Other Personnel</b>	(b) (4), (b) (6)
<b>Total Salary, Wages and Fringe Benefits (A+B)</b>							(b) (4), (b) (6)

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



## RESEARCH & RELATED BUDGET - SECTION C, D, & E, Budget Period 5

**ORGANIZATIONAL DUNS\*:** 1446765660000

**Budget Type\*:**     Project     Subaward/Consortium

**Organization:** The Henry M. Jackson Fdn. for the Adv'mt. of Mil. Med., Inc.

**Start Date\*:** 03-01-2024

**End Date\*:** 02-28-2025

**Budget Period:** 5

<b>C. Equipment Description</b>		<b>Funds Requested (\$)*</b>
List items and dollar amount for each item exceeding \$5,000		
<b>Equipment Item</b>		
<b>Total funds requested for all equipment listed in the attached file</b>		
	<b>Total Equipment</b>	<b>0.00</b>
<b>Additional Equipment:</b> File Name:		

<b>D. Travel</b>		<b>Funds Requested (\$)*</b>
1. Domestic Travel Costs ( Incl. Canada, Mexico, and U.S. Possessions)		3,500.00
2. Foreign Travel Costs		18,500.00
	<b>Total Travel Cost</b>	<b>22,000.00</b>

<b>E. Participant/Trainee Support Costs</b>		<b>Funds Requested (\$)*</b>
1. Tuition/Fees/Health Insurance		
2. Stipends		
3. Travel		
4. Subsistence		
5. Other:		
<b>Number of Participants/Trainees</b>	<b>Total Participant Trainee Support Costs</b>	<b>0.00</b>

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

## RESEARCH & RELATED BUDGET - SECTIONS F-K, Budget Period 5

**ORGANIZATIONAL DUNS\*:** 1446765660000

**Budget Type\*:**     Project     Subaward/Consortium

**Organization:** The Henry M. Jackson Fdn. for the Adv'mt. of Mil. Med., Inc.

**Start Date\*:** 03-01-2024

**End Date\*:** 02-28-2025

**Budget Period:** 5

F. Other Direct Costs	Funds Requested (\$)*
1. Materials and Supplies	41,439.00
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. AKTA Service Contract	4,500.00
<b>Total Other Direct Costs</b>	<b>45,939.00</b>

G. Direct Costs	Funds Requested (\$)*
<b>Total Direct Costs (A thru F)</b>	<b>74,999.99</b>

H. Indirect Costs			
Indirect Cost Type	Indirect Cost Rate (%)	Indirect Cost Base (\$)	Funds Requested (\$)*
1. USU Indirect Cost Rate FY20	30.45	74,999.99	22,837.50
2. HJF Companywide G&A FY20	16.9	97,837.48	16,534.53
		<b>Total Indirect Costs</b>	<b>39,372.03</b>
<b>Cognizant Federal Agency</b>		USAMRAA, Jennifer C. Jackson, 301-619-2054	
(Agency Name, POC Name, and POC Phone Number)			

I. Total Direct and Indirect Costs	Funds Requested (\$)*
<b>Total Direct and Indirect Institutional Costs (G + H)</b>	<b>114,372.02</b>

J. Fee	Funds Requested (\$)*

K. Total Costs and Fee	Funds Requested (\$)*
	<b>114,372.02</b>

L. Budget Justification*
File Name: Budget_Justification_Broder_SE_Asia_(1).pdf (Only attach one file.)

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

**HENRY M. JACKSON FOUNDATION BUDGET JUSTIFICATION**

The Henry M. Jackson Foundation for the Advancement of Military Medicine Inc. (HJM) in partnership with the Uniformed Services University of the Health Sciences (USUHS) will manage this proposal, if awarded.

**A. Key Personnel**

Christopher Broder, Ph.D., Principal Investigator (b) (4), (b) (6) for Years 1-5). Dr. Broder will be responsible for the overall coordination of this project. He will provide necessary instruction to the Co-Investigator and assist with collaboration with the prime. Dr. Broder is a government employee and no salary support is requested.

Eric Laing, Ph.D., Co-Investigator (b) (4), (b) (6) for Years 1-5). Dr. Laing will be responsible for conducting training on site, and for the Luminex training modules to be conducted at partner institutes. He will coordinate efforts in Bethesda, MD and Southeast Asian regional partners and provide the necessary concepts and practice of viral glycoprotein antigen preparation for uses in and validation of Luminex and other serological assays such as ELISA. Dr. Laing will co-supervise serological work performed and participate in data analysis. Dr. Laing is a government employee and no salary support is requested.

**B. Other Personnel**

TBD, Research Assistant I (b) (4), (b) (6) for Years 1-5). This individual will provide partial laboratory support for this project. They will be responsible for producing protein antigens, ordering beads, supplies, preparing shipments and other laboratory support as instructed by the senior staff. This person will be an employee of the Henry M. Jackson Foundation and salary support is requested.

**C. Equipment**

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

**D. Travel**

*Domestic Travel.* Domestic travel will be used for Co-Investigator to attend annual NIH meetings as well as to attend conferences and meetings to learn new techniques, disseminate research data and professional advancement. Depending on the location, 1-2 lab members will attend an annual conference such as The American Society of Virology. The government GSA rates will be used for all domestic travel. This will be for all years.

Year 1	Year 2	Year 3	Year 4	Year 5
\$3,500	\$3,500	\$3,500	\$3,500	\$3,500

*Foreign Travel.* Foreign travel support for will be used to travel to partner institutes in Southeast Asia to provide the serological assay training and data interpretation/analysis. We anticipate 1-2 members of the lab to provide training, and oversight of serological screening. The government GSA rates will be used for all international travel. This will be for all years.

Year 1	Year 2	Year 3	Year 4	Year 5
\$18,500	\$18,500	\$18,500	\$18,500	\$18,500

**F. Other Direct Costs**

*Materials and Supplies.* Based on current prices, the following supplies will be needed to support this project: 20 protein production, magnetic beads, cell culture materials, affinity matrices and control IgG materials. There is a fluctuation in between years due to using stored samples versus gathering other samples.

Year 1	Year 2	Year 3	Year 4	Year 5
\$41,439	\$41,439	\$41,439	\$41,439	\$41,439

*Service agreement*

We request support of \$4,500 for a maintenance agreement for the ÄKTA full service contract. This ÄKTA pure protein purification system is critical to meeting the specific aims of this research. This is for all years.

**H. HJF FY20 Fringe Benefit and In Direct Cost Rates**

The HJF indirect cost is calculated based on the value-added cost base overhead rates. The IDC rate applied is 30.45% USU on-site overhead rate for all allowable direct costs; an additional 16.90% HJF Companywide G&A rate is applied on the total direct cost less subaward plus the USU on-site overhead rate.

The HJF fringe benefit rate is 30.75% for Tier 1 employees and 4.87% for Tier 2 employees. The HJF employees on this project are all Tier 1 employees.

The above fringe benefits and indirect cost provisional billing rates for FY 2020 were approved by the U.S. Army Medical Research Acquisition Activity on May 7, 2019.

**RESEARCH & RELATED BUDGET - Cumulative Budget**

	Totals (\$)	
Section A, Senior/Key Person		0.00
Section B, Other Personnel		35,304.95
Total Number Other Personnel	5	
Total Salary, Wages and Fringe Benefits (A+B)		35,304.95
Section C, Equipment		0.00
Section D, Travel		110,000.00
1. Domestic	17,500.00	
2. Foreign	92,500.00	
Section E, Participant/Trainee Support Costs		0.00
1. Tuition/Fees/Health Insurance	0.00	
2. Stipends	0.00	
3. Travel	0.00	
4. Subsistence	0.00	
5. Other	0.00	
6. Number of Participants/Trainees	0	
Section F, Other Direct Costs		229,695.00
1. Materials and Supplies	207,195.00	
2. Publication Costs	0.00	
3. Consultant Services	0.00	
4. ADP/Computer Services	0.00	
5. Subawards/Consortium/Contractual Costs	0.00	
6. Equipment or Facility Rental/User Fees	0.00	
7. Alterations and Renovations	0.00	
8. Other 1	22,500.00	
9. Other 2	0.00	
10. Other 3	0.00	
Section G, Direct Costs (A thru F)		374,999.95
Section H, Indirect Costs		196,860.15
Section I, Total Direct and Indirect Costs (G + H)		571,860.10
Section J, Fee		0.00
Section K, Total Costs and Fee (I + J)		571,860.10

RESEARCH & RELATED BUDGET - SECTION A & B, Budget Period 1

ORGANIZATIONAL DUNS\*: 6081952770000

Budget Type\*:  Project  Subaward/Consortium

Enter name of Organization: The University of North Carolina at Chapel Hill

Start Date\*: 03-01-2020

End Date\*: 02-28-2021

Budget Period: 1

A. Senior/Key Person												
Prefix	First Name*	Middle Name	Last Name*	Suffix	Project Role*	Base Salary (\$)	Calendar Months	Academic Months	Summer Months	Requested Salary (\$)*	Fringe Benefits (\$)*	Funds Requested (\$)*
1 . Dr.	Ralph		Baric		Co-Investigator							(b) (4), (b) (6)
2 . Dr.	Amy		Sims		Co-Investigator							(b) (4), (b) (6)
<b>Total Funds Requested for all Senior Key Persons in the attached file</b>												
<b>Additional Senior Key Persons:</b> File Name:											<b>Total Senior/Key Person</b>	(b) (4), (b) (6)

B. Other Personnel							
Number of Personnel*	Project Role*	Calendar Months	Academic Months	Summer Months	Requested Salary (\$)*	Fringe Benefits*	Funds Requested (\$)*
	Post Doctoral Associates						
	Graduate Students						
	Undergraduate Students						
	Secretarial/Clerical						
1	Research Assistant						(b) (4), (b) (6)
1	Lab Technician						(b) (4), (b) (6)
<b>2</b>	<b>Total Number Other Personnel</b>					<b>Total Other Personnel</b>	(b) (4), (b) (6)
<b>Total Salary, Wages and Fringe Benefits (A+B)</b>							(b) (4), (b) (6)

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

## RESEARCH & RELATED BUDGET - SECTION C, D, & E, Budget Period 1

**ORGANIZATIONAL DUNS\*:** 6081952770000

**Budget Type\*:**     Project     Subaward/Consortium

**Organization:** The University of North Carolina at Chapel Hill

**Start Date\*:** 03-01-2020

**End Date\*:** 02-28-2021

**Budget Period:** 1

<b>C. Equipment Description</b>		<b>Funds Requested (\$)*</b>
List items and dollar amount for each item exceeding \$5,000		
<b>Equipment Item</b>		
<b>Total funds requested for all equipment listed in the attached file</b>		
<b>Total Equipment</b>		<b>0.00</b>
<b>Additional Equipment:</b> File Name:		

<b>D. Travel</b>		<b>Funds Requested (\$)*</b>
1. Domestic Travel Costs ( Incl. Canada, Mexico, and U.S. Possessions)		1,000.00
2. Foreign Travel Costs		
<b>Total Travel Cost</b>		<b>1,000.00</b>

<b>E. Participant/Trainee Support Costs</b>		<b>Funds Requested (\$)*</b>
1. Tuition/Fees/Health Insurance		
2. Stipends		
3. Travel		
4. Subsistence		
5. Other:		
<b>Number of Participants/Trainees</b>		<b>0.00</b>
<b>Total Participant Trainee Support Costs</b>		<b>0.00</b>

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

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

**ORGANIZATIONAL DUNS\*:** 6081952770000

**Budget Type\*:**     Project     Subaward/Consortium

**Organization:** The University of North Carolina at Chapel Hill

**Start Date\*:** 03-01-2020

**End Date\*:** 02-28-2021

**Budget Period:** 1

<b>F. Other Direct Costs</b>	<b>Funds Requested (\$)*</b>
1. Materials and Supplies	30,585.00
2. Publication Costs	500.00
3. Consultant Services	
4. ADP/Computer Services	
5. Subawards/Consortium/Contractual Costs	
6. Equipment or Facility Rental/User Fees	
7. Alterations and Renovations	
8. Animal Housing	1,000.00
<b>Total Other Direct Costs</b>	<b>32,085.00</b>

<b>G. Direct Costs</b>	<b>Funds Requested (\$)*</b>
<b>Total Direct Costs (A thru F)</b>	<b>125,000.00</b>

<b>H. Indirect Costs</b>			
<b>Indirect Cost Type</b>	<b>Indirect Cost Rate (%)</b>	<b>Indirect Cost Base (\$)</b>	<b>Funds Requested (\$)*</b>
1. UNC Indirect Cost Rate	55.5	125,000.00	69,375.00
<b>Total Indirect Costs</b>			<b>69,375.00</b>
<b>Cognizant Federal Agency</b>			
(Agency Name, POC Name, and POC Phone Number)			

<b>I. Total Direct and Indirect Costs</b>	<b>Funds Requested (\$)*</b>
<b>Total Direct and Indirect Institutional Costs (G + H)</b>	<b>194,375.00</b>

<b>J. Fee</b>	<b>Funds Requested (\$)*</b>

<b>K. Total Costs and Fee</b>	<b>Funds Requested (\$)*</b>
	<b>194,375.00</b>

<b>L. Budget Justification*</b>
File Name: UNC_Budget_Justification_FINAL.pdf (Only attach one file.)

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



RESEARCH & RELATED BUDGET - SECTION A & B, Budget Period 2

ORGANIZATIONAL DUNS\*: 6081952770000

Budget Type\*:  Project  Subaward/Consortium

Enter name of Organization: The University of North Carolina at Chapel Hill

Start Date\*: 03-01-2021

End Date\*: 02-28-2022

Budget Period: 2

A. Senior/Key Person												
Prefix	First Name*	Middle Name	Last Name*	Suffix	Project Role*	Base Salary (\$)	Calendar Months	Academic Months	Summer Months	Requested Salary (\$)*	Fringe Benefits (\$)*	Funds Requested (\$)*
1 . Dr.	Ralph		Baric		Co-Investigator							(b) (4), (b) (6)
2 . Dr.	Amy		Sims		Co-Investigator							(b) (4), (b) (6)
<b>Total Funds Requested for all Senior Key Persons in the attached file</b>											(b) (4), (b) (6)	
<b>Additional Senior Key Persons:</b> File Name:											<b>Total Senior/Key Person</b>	(b) (4), (b) (6)

B. Other Personnel							
Number of Personnel*	Project Role*	Calendar Months	Academic Months	Summer Months	Requested Salary (\$)*	Fringe Benefits*	Funds Requested (\$)*
	Post Doctoral Associates						
	Graduate Students						
	Undergraduate Students						
	Secretarial/Clerical						
1	Research Assistant						(b) (4), (b) (6)
1	Lab Technician						(b) (4), (b) (6)
<b>2</b>	<b>Total Number Other Personnel</b>					<b>Total Other Personnel</b>	(b) (4), (b) (6)
<b>Total Salary, Wages and Fringe Benefits (A+B)</b>							(b) (4), (b) (6)

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

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

**ORGANIZATIONAL DUNS\*:** 6081952770000

**Budget Type\*:**     Project     Subaward/Consortium

**Organization:** The University of North Carolina at Chapel Hill

**Start Date\*:** 03-01-2021

**End Date\*:** 02-28-2022

**Budget Period:** 2

<b>C. Equipment Description</b>		<b>Funds Requested (\$)*</b>
List items and dollar amount for each item exceeding \$5,000		
<b>Equipment Item</b>		
<b>Total funds requested for all equipment listed in the attached file</b>		
<b>Total Equipment</b>		<b>0.00</b>
<b>Additional Equipment:</b> File Name:		

<b>D. Travel</b>		<b>Funds Requested (\$)*</b>
1. Domestic Travel Costs ( Incl. Canada, Mexico, and U.S. Possessions)		1,000.00
2. Foreign Travel Costs		
<b>Total Travel Cost</b>		<b>1,000.00</b>

<b>E. Participant/Trainee Support Costs</b>		<b>Funds Requested (\$)*</b>
1. Tuition/Fees/Health Insurance		
2. Stipends		
3. Travel		
4. Subsistence		
5. Other:		
<b>Number of Participants/Trainees</b>		<b>0.00</b>
<b>Total Participant Trainee Support Costs</b>		<b>0.00</b>

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

## RESEARCH & RELATED BUDGET - SECTIONS F-K, Budget Period 2

**ORGANIZATIONAL DUNS\*:** 6081952770000

**Budget Type\*:**     Project     Subaward/Consortium

**Organization:** The University of North Carolina at Chapel Hill

**Start Date\*:** 03-01-2021

**End Date\*:** 02-28-2022

**Budget Period:** 2

<b>F. Other Direct Costs</b>	<b>Funds Requested (\$)*</b>
1. Materials and Supplies	30,585.00
2. Publication Costs	500.00
3. Consultant Services	
4. ADP/Computer Services	
5. Subawards/Consortium/Contractual Costs	
6. Equipment or Facility Rental/User Fees	
7. Alterations and Renovations	
8. Animal Housing	1,000.00
<b>Total Other Direct Costs</b>	<b>32,085.00</b>

<b>G. Direct Costs</b>	<b>Funds Requested (\$)*</b>
<b>Total Direct Costs (A thru F)</b>	<b>125,000.00</b>

<b>H. Indirect Costs</b>			
<b>Indirect Cost Type</b>	<b>Indirect Cost Rate (%)</b>	<b>Indirect Cost Base (\$)</b>	<b>Funds Requested (\$)*</b>
1. UNC Indirect Cost Rate	55.5	125,000.00	69,375.00
<b>Total Indirect Costs</b>			<b>69,375.00</b>
<b>Cognizant Federal Agency</b>			
(Agency Name, POC Name, and POC Phone Number)			

<b>I. Total Direct and Indirect Costs</b>	<b>Funds Requested (\$)*</b>
<b>Total Direct and Indirect Institutional Costs (G + H)</b>	<b>194,375.00</b>

<b>J. Fee</b>	<b>Funds Requested (\$)*</b>

<b>K. Total Costs and Fee</b>	<b>Funds Requested (\$)*</b>
	<b>194,375.00</b>

<b>L. Budget Justification*</b>
File Name: UNC_Budget_Justification_FINAL.pdf (Only attach one file.)

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

RESEARCH & RELATED BUDGET - SECTION A & B, Budget Period 3

ORGANIZATIONAL DUNS\*: 6081952770000

Budget Type\*:  Project  Subaward/Consortium

Enter name of Organization: The University of North Carolina at Chapel Hill

Start Date\*: 03-01-2022

End Date\*: 02-28-2023

Budget Period: 3

A. Senior/Key Person												
Prefix	First Name*	Middle Name	Last Name*	Suffix	Project Role*	Base Salary (\$)	Calendar Months	Academic Months	Summer Months	Requested Salary (\$)*	Fringe Benefits (\$)*	Funds Requested (\$)*
1 . Dr.	Ralph		Baric		Co-Investigator							(b) (4), (b) (6)
2 . Dr.	Amy		Sims		Co-Investigator							(b) (4), (b) (6)
<b>Total Funds Requested for all Senior Key Persons in the attached file</b>												
<b>Additional Senior Key Persons:</b>											<b>Total Senior/Key Person</b>	(b) (4), (b) (6)

B. Other Personnel							
Number of Personnel*	Project Role*	Calendar Months	Academic Months	Summer Months	Requested Salary (\$)*	Fringe Benefits*	Funds Requested (\$)*
	Post Doctoral Associates						
	Graduate Students						
	Undergraduate Students						
	Secretarial/Clerical						
1	Research Assistant						(b) (4), (b) (6)
1	Lab Technician						(b) (4), (b) (6)
<b>2</b>	<b>Total Number Other Personnel</b>					<b>Total Other Personnel</b>	(b) (4), (b) (6)
<b>Total Salary, Wages and Fringe Benefits (A+B)</b>							(b) (4), (b) (6)

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

## RESEARCH & RELATED BUDGET - SECTION C, D, & E, Budget Period 3

**ORGANIZATIONAL DUNS\*:** 6081952770000

**Budget Type\*:**     Project     Subaward/Consortium

**Organization:** The University of North Carolina at Chapel Hill

**Start Date\*:** 03-01-2022

**End Date\*:** 02-28-2023

**Budget Period:** 3

<b>C. Equipment Description</b>		<b>Funds Requested (\$)*</b>
List items and dollar amount for each item exceeding \$5,000		
<b>Equipment Item</b>		
<b>Total funds requested for all equipment listed in the attached file</b>		
<b>Total Equipment</b>		<b>0.00</b>
<b>Additional Equipment:</b> File Name:		

<b>D. Travel</b>		<b>Funds Requested (\$)*</b>
1. Domestic Travel Costs ( Incl. Canada, Mexico, and U.S. Possessions)		1,000.00
2. Foreign Travel Costs		
<b>Total Travel Cost</b>		<b>1,000.00</b>

<b>E. Participant/Trainee Support Costs</b>		<b>Funds Requested (\$)*</b>
1. Tuition/Fees/Health Insurance		
2. Stipends		
3. Travel		
4. Subsistence		
5. Other:		
<b>Number of Participants/Trainees</b>		<b>0.00</b>
<b>Total Participant Trainee Support Costs</b>		<b>0.00</b>

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

## RESEARCH & RELATED BUDGET - SECTIONS F-K, Budget Period 3

**ORGANIZATIONAL DUNS\*:** 6081952770000

**Budget Type\*:**     Project     Subaward/Consortium

**Organization:** The University of North Carolina at Chapel Hill

**Start Date\*:** 03-01-2022

**End Date\*:** 02-28-2023

**Budget Period:** 3

<b>F. Other Direct Costs</b>	<b>Funds Requested (\$)*</b>
1. Materials and Supplies	30,585.00
2. Publication Costs	500.00
3. Consultant Services	
4. ADP/Computer Services	
5. Subawards/Consortium/Contractual Costs	
6. Equipment or Facility Rental/User Fees	
7. Alterations and Renovations	
8. Animal Housing	1,000.00
<b>Total Other Direct Costs</b>	<b>32,085.00</b>

<b>G. Direct Costs</b>	<b>Funds Requested (\$)*</b>
<b>Total Direct Costs (A thru F)</b>	<b>125,000.00</b>

<b>H. Indirect Costs</b>			
<b>Indirect Cost Type</b>	<b>Indirect Cost Rate (%)</b>	<b>Indirect Cost Base (\$)</b>	<b>Funds Requested (\$)*</b>
1. UNC Indirect Cost Rate	55.5	125,000.00	69,375.00
<b>Total Indirect Costs</b>			<b>69,375.00</b>
<b>Cognizant Federal Agency</b>			
(Agency Name, POC Name, and POC Phone Number)			

<b>I. Total Direct and Indirect Costs</b>	<b>Funds Requested (\$)*</b>
<b>Total Direct and Indirect Institutional Costs (G + H)</b>	<b>194,375.00</b>

<b>J. Fee</b>	<b>Funds Requested (\$)*</b>

<b>K. Total Costs and Fee</b>	<b>Funds Requested (\$)*</b>
	<b>194,375.00</b>

<b>L. Budget Justification*</b>
File Name: UNC_Budget_Justification_FINAL.pdf (Only attach one file.)

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

RESEARCH & RELATED BUDGET - SECTION A & B, Budget Period 4

ORGANIZATIONAL DUNS\*: 6081952770000

Budget Type\*:  Project  Subaward/Consortium

Enter name of Organization: The University of North Carolina at Chapel Hill

Start Date\*: 03-01-2023

End Date\*: 02-29-2024

Budget Period: 4

A. Senior/Key Person												
Prefix	First Name*	Middle Name	Last Name*	Suffix	Project Role*	Base Salary (\$)	Calendar Months	Academic Months	Summer Months	Requested Salary (\$)*	Fringe Benefits (\$)*	Funds Requested (\$)*
1 . Dr.	Ralph		Baric		Co-Investigator							(b) (4), (b) (6)
2 . Dr.	Amy		Sims		Co-Investigator							(b) (4), (b) (6)
<b>Total Funds Requested for all Senior Key Persons in the attached file</b>												
<b>Additional Senior Key Persons:</b> File Name:											<b>Total Senior/Key Person</b>	(b) (4), (b) (6)

B. Other Personnel							
Number of Personnel*	Project Role*	Calendar Months	Academic Months	Summer Months	Requested Salary (\$)*	Fringe Benefits*	Funds Requested (\$)*
	Post Doctoral Associates						
	Graduate Students						
	Undergraduate Students						
	Secretarial/Clerical						
1	Research Assistant						(b) (4), (b) (6)
1	Lab Technician						(b) (4), (b) (6)
<b>2</b>	<b>Total Number Other Personnel</b>					<b>Total Other Personnel</b>	(b) (4), (b) (6)
<b>Total Salary, Wages and Fringe Benefits (A+B)</b>							(b) (4), (b) (6)

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

## RESEARCH & RELATED BUDGET - SECTION C, D, & E, Budget Period 4

**ORGANIZATIONAL DUNS\*:** 6081952770000

**Budget Type\*:**     Project     Subaward/Consortium

**Organization:** The University of North Carolina at Chapel Hill

**Start Date\*:** 03-01-2023

**End Date\*:** 02-29-2024

**Budget Period:** 4

<b>C. Equipment Description</b>		<b>Funds Requested (\$)*</b>
List items and dollar amount for each item exceeding \$5,000		
<b>Equipment Item</b>		
<b>Total funds requested for all equipment listed in the attached file</b>		
<b>Total Equipment</b>		<b>0.00</b>
<b>Additional Equipment:</b> File Name:		

<b>D. Travel</b>		<b>Funds Requested (\$)*</b>
1. Domestic Travel Costs ( Incl. Canada, Mexico, and U.S. Possessions)		1,000.00
2. Foreign Travel Costs		
<b>Total Travel Cost</b>		<b>1,000.00</b>

<b>E. Participant/Trainee Support Costs</b>		<b>Funds Requested (\$)*</b>
1. Tuition/Fees/Health Insurance		
2. Stipends		
3. Travel		
4. Subsistence		
5. Other:		
<b>Number of Participants/Trainees</b>		<b>0.00</b>
<b>Total Participant Trainee Support Costs</b>		<b>0.00</b>

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



## RESEARCH & RELATED BUDGET - SECTIONS F-K, Budget Period 4

**ORGANIZATIONAL DUNS\*:** 6081952770000

**Budget Type\*:**     Project     Subaward/Consortium

**Organization:** The University of North Carolina at Chapel Hill

**Start Date\*:** 03-01-2023

**End Date\*:** 02-29-2024

**Budget Period:** 4

<b>F. Other Direct Costs</b>	<b>Funds Requested (\$)*</b>
1. Materials and Supplies	30,585.00
2. Publication Costs	500.00
3. Consultant Services	
4. ADP/Computer Services	
5. Subawards/Consortium/Contractual Costs	
6. Equipment or Facility Rental/User Fees	
7. Alterations and Renovations	
8. Animal Housing	1,000.00
<b>Total Other Direct Costs</b>	<b>32,085.00</b>

<b>G. Direct Costs</b>	<b>Funds Requested (\$)*</b>
<b>Total Direct Costs (A thru F)</b>	<b>125,000.00</b>

<b>H. Indirect Costs</b>			
<b>Indirect Cost Type</b>	<b>Indirect Cost Rate (%)</b>	<b>Indirect Cost Base (\$)</b>	<b>Funds Requested (\$)*</b>
1. UNC Indirect Cost Rate	55.5	125,000.00	69,375.00
<b>Total Indirect Costs</b>			<b>69,375.00</b>
<b>Cognizant Federal Agency</b>			
(Agency Name, POC Name, and POC Phone Number)			

<b>I. Total Direct and Indirect Costs</b>	<b>Funds Requested (\$)*</b>
<b>Total Direct and Indirect Institutional Costs (G + H)</b>	<b>194,375.00</b>

<b>J. Fee</b>	<b>Funds Requested (\$)*</b>

<b>K. Total Costs and Fee</b>	<b>Funds Requested (\$)*</b>
	<b>194,375.00</b>

<b>L. Budget Justification*</b>
File Name: UNC_Budget_Justification_FINAL.pdf (Only attach one file.)

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

## RESEARCH & RELATED BUDGET - SECTION A & B, Budget Period 5

ORGANIZATIONAL DUNS\*: 6081952770000

**Budget Type\*:**     Project     Subaward/Consortium

**Enter name of Organization:** The University of North Carolina at Chapel Hill

**Start Date\*:** 03-01-2024

**End Date\*:** 02-28-2025

**Budget Period:** 5

A. Senior/Key Person											
Prefix	First Name*	Middle Name	Last Name*	Suffix	Project Role*	Base Salary (\$)	Calendar Months	Academic Months	Summer Months	Requested Salary (\$)* Fringe Benefits (\$)*	Funds Requested (\$)*
1 . Dr.	Ralph		Baric		Co-Investigator						(b) (4), (b) (6)
2 . Dr.	Amy		Sims		Co-Investigator						(b) (4), (b) (6)
<b>Total Funds Requested for all Senior Key Persons in the attached file</b>											(b) (4), (b) (6)
<b>Additional Senior Key Persons:</b> File Name:											<b>Total Senior/Key Person</b> (b) (4), (b) (6)

B. Other Personnel							
Number of Personnel*	Project Role*	Calendar Months	Academic Months	Summer Months	Requested Salary (\$)*	Fringe Benefits*	Funds Requested (\$)*
	Post Doctoral Associates						
	Graduate Students						
	Undergraduate Students						
	Secretarial/Clerical						
1	Research Assistant						(b) (4), (b) (6)
1	Lab Technician						(b) (4), (b) (6)
<b>2</b>	<b>Total Number Other Personnel</b>					<b>Total Other Personnel</b>	(b) (4), (b) (6)
<b>Total Salary, Wages and Fringe Benefits (A+B)</b>							(b) (4), (b) (6)

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

## RESEARCH & RELATED BUDGET - SECTION C, D, & E, Budget Period 5

**ORGANIZATIONAL DUNS\*:** 6081952770000

**Budget Type\*:**     Project     Subaward/Consortium

**Organization:** The University of North Carolina at Chapel Hill

**Start Date\*:** 03-01-2024

**End Date\*:** 02-28-2025

**Budget Period:** 5

<b>C. Equipment Description</b>		<b>Funds Requested (\$)*</b>
List items and dollar amount for each item exceeding \$5,000		
<b>Equipment Item</b>		
<b>Total funds requested for all equipment listed in the attached file</b>		
<b>Total Equipment</b>		<b>0.00</b>
<b>Additional Equipment:</b> File Name:		

<b>D. Travel</b>		<b>Funds Requested (\$)*</b>
1. Domestic Travel Costs ( Incl. Canada, Mexico, and U.S. Possessions)		1,000.00
2. Foreign Travel Costs		
<b>Total Travel Cost</b>		<b>1,000.00</b>

<b>E. Participant/Trainee Support Costs</b>		<b>Funds Requested (\$)*</b>
1. Tuition/Fees/Health Insurance		
2. Stipends		
3. Travel		
4. Subsistence		
5. Other:		
<b>Number of Participants/Trainees</b>		<b>0.00</b>
<b>Total Participant Trainee Support Costs</b>		<b>0.00</b>

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

## RESEARCH & RELATED BUDGET - SECTIONS F-K, Budget Period 5

**ORGANIZATIONAL DUNS\*:** 6081952770000

**Budget Type\*:**     Project     Subaward/Consortium

**Organization:** The University of North Carolina at Chapel Hill

**Start Date\*:** 03-01-2024

**End Date\*:** 02-28-2025

**Budget Period:** 5

<b>F. Other Direct Costs</b>	<b>Funds Requested (\$)*</b>
1. Materials and Supplies	30,585.00
2. Publication Costs	500.00
3. Consultant Services	
4. ADP/Computer Services	
5. Subawards/Consortium/Contractual Costs	
6. Equipment or Facility Rental/User Fees	
7. Alterations and Renovations	
8. Animal Housing	1,000.00
<b>Total Other Direct Costs</b>	<b>32,085.00</b>

<b>G. Direct Costs</b>	<b>Funds Requested (\$)*</b>
<b>Total Direct Costs (A thru F)</b>	<b>125,000.00</b>

<b>H. Indirect Costs</b>			
<b>Indirect Cost Type</b>	<b>Indirect Cost Rate (%)</b>	<b>Indirect Cost Base (\$)</b>	<b>Funds Requested (\$)*</b>
1. UNC Indirect Cost Rate	55.5	125,000.00	69,375.00
<b>Total Indirect Costs</b>			<b>69,375.00</b>
<b>Cognizant Federal Agency</b>			
(Agency Name, POC Name, and POC Phone Number)			

<b>I. Total Direct and Indirect Costs</b>	<b>Funds Requested (\$)*</b>
<b>Total Direct and Indirect Institutional Costs (G + H)</b>	<b>194,375.00</b>

<b>J. Fee</b>	<b>Funds Requested (\$)*</b>

<b>K. Total Costs and Fee</b>	<b>Funds Requested (\$)*</b>
	<b>194,375.00</b>

<b>L. Budget Justification*</b>
File Name: UNC_Budget_Justification_FINAL.pdf (Only attach one file.)

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

**UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL BUDGET JUSTIFICATION, SUBAWARD****A. Senior/Key Personnel**

Ralph Baric, PhD Co-Investigator will commit (b) (4), (b) (6) to this project. Dr. Baric is a known expert in coronavirus cross species transmission and pathogenesis and has studied this group of viruses for over 30 years. His group developed the first reverse genetic systems for epidemic and zoonotic SARS-like and coronaviruses and they have studied the ability of these viruses to replicate efficiently in various primary human airway epithelial cell cultures as well as other key primary cell types. His group has also studied the sensitivity of these viruses to be controlled by existing vaccines and therapeutics both in vitro and in vivo. Dr. Baric will lead the studies at the University of North Carolina at Chapel Hill. He will design research strategies, interpret findings and review research outcomes with Dr. Sims and Mr. Yount. At a regular basis, Dr. Baric will report the results of the teams research to Dr. Daszak, and together, they will use this information to identify additional research priorities and design downstream studies. Drs. Daszak and Baric have published together in the past and participated on research project applications. He will work closely with Drs. Sims and Tse and Mr. Yount to prepare timely reports, share research and discuss future research directions with the group.

Amy Sims, PhD Co-Investigator will commit (b) (4), (b) (6) to this project. Dr. Sims has over 22 years of research studying coronavirus molecular biology, replication and pathogenesis. She has published over 50 papers including seminal papers on characterizing host response patterns of primary human lung airway epithelial cells and other cell types after infection with SARS-CoV, MERS-CoV, influenza and various SARS-like bat coronaviruses. She is not only well versed in the preparation, cultivation and maintenance of primary human lung cells but also proficient at studying virus infection outcomes, in the presence and absence of antiviral therapeutics. She is also expert in coronavirus reverse genetics. In consultation with Dr. Baric, Dr. Sims will design experiments, perform infections and characterize epidemic and bat SARS-like coronavirus replication in human cells. She will compile data and share these results with the research team. Dr. Sims will also interface and work closely with Mr. Yount, who will assist in these studies, including infections, cell preparations and characterizing virus growth efficiency in these cultures. Dr. Sims has over 15 years of experience working in a BSL3 laboratory and oversees the management of these facilities. She has select agent clearance.

**B. Other Personnel**

Dr. Herman Tse, Research Associate will commit (b) (4), (b) (6) to this project. He is well trained in molecular biology, synthetic genome design, whole genome sequencing, virus reverse genetics using flaviviruses and coronaviruses as models, virus recovery and characterization in cell in culture. He is completed his training for BSL3 research over the next month and has select agent paperwork under review. He will work closely with Drs. Baric and Sims to design experiments, sequence novel virus isolates, and design and recovery recombinant viruses from molecular clones. He will report his findings to Dr. Baric and prepare reports and presentations regarding his research productivity during the course of the program.

Mr. Boyd Yount, Laboratory Technician will commit (b) (4), (b) (6) to this project. Mr. Yount has published over 50 papers on coronaviruses and developed the first reverse genetic platforms for SARS-CoV, MERS-CoV and various SARS-like bat coronaviruses. He has also designed and recovered recombinant clones for flaviviruses, alphaviruses and influenza viruses. He will work closely with Drs. Baric, Sims and Daszak to design and recover select bat SARS-like, MERS-like and other coronaviruses or flaviviruses for downstream studies in the Baric laboratory, including characterizing virus phenotypes in primary cells as well as cells expressing various human and animal receptors. He will prepare virus stocks. Mr. Yount will work closely with Drs. Baric and Sims to design and implement experiments in the BSL3 laboratory, prepare reports and research outcomes during the course of the program. Mr. Yount has over 15 years of experience in a BSL3 setting and is well versed in all the techniques used in this proposal. He has select agent clearance.

**Fringe Benefits**

Benefits are for faculty, staff and postdoctoral research associates are calculated as follows: Faculty and Staff – 24.519% Social Security and retirement and \$6,104 for health insurance.

**C. Supplies (\$30,585)**

Materials and Supplies. A variety of culture media and serum (\$5,000), primary cell procurement (\$4000), recombinant DNA supplies, antibodies and enzymes (\$4000), synthetic DNAs (\$5000) and an assortment of miscellaneous supplies/disposables such as gloves, chemicals, plasticware, etc.(\$3000) and chemicals (\$1585) are needed during the course of the program to recover recombinant viruses and maintain cells in culture, and perform virus growth. Funds are also requested for collaborative cross and standard laboratory mice (\$5000) used to develop improved animal models of human disease. In addition, personnel protective equipment (PPE), portal breathing apparati (PAPR), globes and protective clothing are used in the BSL3 setting (\$3,000).

**D. Travel (\$1,000)**

*Domestic*

Travel to EcoHealth Alliance and foreign locations will be covered by funding available through the core grant to EcoHealth Alliance. Dr. Baric requests \$1,000 to travel and present research findings at a national or international meeting.

*International*

No international travel is requested.

**E. Other Direct Costs (\$1,500)**

*Other Costs.*

Funds are requested for animal housing for the mice costs (\$1,000) as well as for publication costs (\$500).

**F. Indirect Costs**

In an agreement with DHHS dated 11/23/2016 the indirect cost rate for The University of North Carolina is 55.5% of modified total direct costs.

**RESEARCH & RELATED BUDGET - Cumulative Budget**

	Totals (\$)	
Section A, Senior/Key Person		248,790.00
Section B, Other Personnel		210,785.00
Total Number Other Personnel	10	
Total Salary, Wages and Fringe Benefits (A+B)		459,575.00
Section C, Equipment		0.00
Section D, Travel		5,000.00
1. Domestic	5,000.00	
2. Foreign	0.00	
Section E, Participant/Trainee Support Costs		0.00
1. Tuition/Fees/Health Insurance	0.00	
2. Stipends	0.00	
3. Travel	0.00	
4. Subsistence	0.00	
5. Other	0.00	
6. Number of Participants/Trainees	0	
Section F, Other Direct Costs		160,425.00
1. Materials and Supplies	152,925.00	
2. Publication Costs	2,500.00	
3. Consultant Services	0.00	
4. ADP/Computer Services	0.00	
5. Subawards/Consortium/Contractual Costs	0.00	
6. Equipment or Facility Rental/User Fees	0.00	
7. Alterations and Renovations	0.00	
8. Other 1	5,000.00	
9. Other 2	0.00	
10. Other 3	0.00	
Section G, Direct Costs (A thru F)		625,000.00
Section H, Indirect Costs		346,875.00
Section I, Total Direct and Indirect Costs (G + H)		971,875.00
Section J, Fee		0.00
Section K, Total Costs and Fee (I + J)		971,875.00

**Total Direct Costs less Consortium F&A**

NIH policy (NOT-OD-05-004) allows applicants to exclude consortium/contractual F&A costs when determining if an application falls at or beneath any applicable direct cost limit. When a direct cost limit is specified in an FOA, the following table can be used to determine if your application falls within that limit.

<b>Category</b>	<b>Budget Period 1</b>	<b>Budget Period 2</b>	<b>Budget Period 3</b>	<b>Budget Period 4</b>	<b>Budget Period 5</b>	<b>TOTALS</b>
Total Direct Costs less Consortium F&A	1,050,579	1,050,579	1,050,579	1,050,579	1,050,579	<b>5,252,894</b>



# PHS 398 Cover Page Supplement

## 1. Vertebrate Animals Section

Are vertebrate animals euthanized?       Yes       No

If "Yes" to euthanasia

Is the method consistent with American Veterinary Medical Association (AVMA) guidelines?

Yes       No

If "No" to AVMA guidelines, describe method and provide scientific justification

.....

## 2. \*Program Income Section

\*Is program income anticipated during the periods for which the grant support is requested?

Yes       No

If you checked "yes" above (indicating that program income is anticipated), then use the format below to reflect the amount and source(s). Otherwise, leave this section blank.

\*Budget Period      \*Anticipated Amount (\$)      \*Source(s)

### PHS 398 Cover Page Supplement

#### 3. Human Embryonic Stem Cells Section

\*Does the proposed project involve human embryonic stem cells?       Yes       No

If the proposed project involves human embryonic stem cells, list below the registration number of the specific cell line(s) from the following list: [http://grants.nih.gov/stem\\_cells/registry/current.htm](http://grants.nih.gov/stem_cells/registry/current.htm). Or, if a specific stem cell line cannot be referenced at this time, check the box indicating that one from the registry will be used:

Specific stem cell line cannot be referenced at this time. One from the registry will be used.

Cell Line(s) (Example: 0004):

#### 4. Inventions and Patents Section (Renewal applications)

\*Inventions and Patents:       Yes       No

If the answer is "Yes" then please answer the following:

\*Previously Reported:       Yes       No

#### 5. Change of Investigator/Change of Institution Section

Change of Project Director/Principal Investigator

Name of former Project Director/Principal Investigator

Prefix:

\*First Name:

Middle Name:

\*Last Name:

Suffix:

Change of Grantee Institution

\*Name of former institution:

## PHS 398 Research Plan

<b>Introduction</b>	
1. Introduction to Application (for Resubmission and Revision applications)	
<b>Research Plan Section</b>	
2. Specific Aims	EIDRC_SE_Asia_Specific_aims_v6_FINAL_FINAL.pdf
3. Research Strategy*	EIDRC_SEA_Research_Strategy_FINAL.pdf
4. Progress Report Publication List	
<b>Other Research Plan Section</b>	
5. Vertebrate Animals	Vertebrate_Animals_Section_FINAL.pdf
6. Select Agent Research	EIDRC_Agent_and_Biohazards_FINAL.pdf
7. Multiple PD/PI Leadership Plan	
8. Consortium/Contractual Arrangements	EIDRC_Contractual_Arrangments_FINAL.pdf
9. Letters of Support	EIDRC_LOS_FINAL.pdf
10. Resource Sharing Plan(s)	EIDRC_Resource_Sharing_Document_FINAL.pdf
11. Authentication of Key Biological and/or Chemical Resources	EID_SEARCH_Authentication_of_Key_Reagents.pdf
<b>Appendix</b>	
12. Appendix	