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with the U.S. Army Medical Research and Materiel Command

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Washington, DC 20418

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Table of Contents

Cover.....	1
SF 298.....	2
Table of Contents.....	3
Publicity.....	4
Requests.....	4
Competition.....	5
Associates' Citizenship.....	5
Associates' Activities.....	6
Attachments and Appendices.....	7

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

National Research Council
RESEARCH ASSOCIATESHIP PROGRAM

with the

U.S. Army Medical Research Materiel Command
(AMRMC)

Annual Contract Technical Report

Report Period: 1/24/2002- 1/23/2003]

Contract number: DAMD17-00-2-0002

Publicity

The National Academies Research Associateship Programs for the report period were announced to the scientific community in the fall of the preceding year, 2001. Publicity materials describing the National Research Council-U.S. Army Medical Research Materiel Command (AMRMC) Programs were distributed in November to presidents, graduate deans, and heads of appropriate science and engineering departments and minority-affairs offices of all academic degree-granting institutions in the United States. An e-mail announcement of the programs was sent to these same contact points prior to each review deadline. Promotional materials were sent to Laboratory Program Representatives, Associateship Advisers, and other interested persons. General advertisements of programs were placed in leading scientific and engineering publications. Publicity materials and other related information were made available on the internet. Research Associateship Programs staff attended numerous society meetings and minority recruitments to promote the various programs and meet with prospective applicants throughout the year.

Requests

Application materials were distributed in response to specific requests for information about the AMRMC Research Associateship Program or as a result of general requests by persons whose fields of specialization appeared to be appropriate for the research opportunities available in the AMRMC laboratories.

Competition

Panel reviews of applicants for the Research Associateship Programs, including those with the U.S. Army Medical Research Materiel Command, are conducted in winter, spring, summer, autumn of each year. The following is a breakdown of the action taken with the applications during the report period.

	review-year <u>winter -02</u>	<u>spring- 02</u>	<u>summer- 02</u>	<u>autumn- 03</u>	<u>TOTAL</u>
TOTAL APPLICATIONS	16	17	4	12	49
Number of Applications Reviewed	15	12	2	11	40
Applications not recommended (did not pass Review)	1	5	2	1	9
Applications Recommended (passed Review)	16	17	4	12	49
Awards offered	9	6	0	7	22
Awards accepted	9	5	0	4	18
Awards declined	0	1	0	3	4
Awards withdrawn by RAP (NRC officially withdrew award <i>after</i> it had been accepted.)	1	3	0	1	5

Associates' Citizenship

Associates on tenure between 1/24/2002 and 1/23/2003 were citizens or Permanent Residents of the following countries:

3 Australia	4 India	1 Poland
1 Bangladesh	4 Israel	3 Russia
1 Denmark	1 Italy	1 Ukraine
1 Ghana	1 Mexico	30 United States
2 Hungary	5 People's Republic of China	

Associates' Activities

Associates who ended tenure during the report period were on tenure for an average of **27** months, ranging from **12** months to **42** months.

Of the **12** Associates who ended tenure during the report period, **10 (83%)** submitted final reports. In the final reports, Associates indicated the following scholarly activity while on tenure.

10 Articles published in refereed journals	6 International presentations
2 Patent applications	20 Domestic presentations
	1 Awards

After ending their tenure, Associates indicated their future plans as follows:

- Remain at host agency as perm. employee	- Research/teaching-foreign college/university
5 Remain at host agency as contract employee	1 Research/admin in industry
1 Research position at other US gov't. lab	- Research/admin in non-profit organization
- Administrative position at US gov't. lab	- Postdoctoral research
2 Research position at foreign gov't. lab	1 Self employed
- Research/teaching-US college/university	- Other (may include unemployed)

In their final reports, Associates were asked to evaluate certain aspects of their experiences on a scale of 1 (low) to 10 (high). The average rating for each item follows:

--	<i>Short-term value:</i>	Development of knowledge, skills, and research productivity
--	<i>Long-term value:</i>	How your Research Associateship affected your career to date
8.6	<i>Laboratory:</i>	Quality of the support you received from the federal laboratory
8.8	<i>RAP:</i>	Quality of the support you received from the Research Associateship Programs

Advisers also were asked to complete an evaluation of the Associate. The following summarizes the Adviser evaluations for Associates ending tenure during the report period. Of the **12** Associates who ended tenure, **4 (33%)** Adviser evaluations were completed. Assessments were made on six criteria using the following rating scale: 1-below average, 2-average, 3-above average, 4-good, and 5-outstanding/exceptional. The average rating for each item follows:

3.6 Knowledge of field	3.8 Independence
3.3 Innovative thinking	3.8 Motivation
4.0 Research techniques	3.3 Overall scientific ability

The Adviser was asked, "Would you like this Associate as a professional colleague?" The Advisers responded in the following manner:

3	Yes	--	No Comment
1	No	--	No Answer

Additional information about the Associates' activities can be found in the attachments described below and the Appendix.

Attachment 1: Associates who were on tenure between 1/24/2002 and 1/23/2003. Included are the Associate's laboratory center/division location, the starting and termination dates, and the names of their advisers. For those Associates who ended tenure during the report period, it is noted if the final and adviser evaluation reports have been received. Associates are required to submit final reports upon termination of tenure, and advisers are asked to submit a final evaluation of each Associate. Associates who have not submitted a final report have received follow-up correspondence.

Attachment 2: All recommended candidates by category (e.g., Recommended, Accepted, No Funding, Declined, etc.). This report includes information about citizenship, the Ph.D. institution, the title of proposed research, proposed or actual starting date, and adviser.

Attachment 3: Summaries of Associate patent activity, if any, and Associate research during tenure as reported on the Associates' termination reports. The summary of patent activity includes the patent application title, inventor(s), and date of application.

Appendix: Final reports received from the Associates who ended tenure during the report period.

Associates On Tenure**1/24/2002 - 1/23/2003****Attachment 1****AMRMC - U.S. Army Institute of Surgical Research**

2/24/2003 Page 1 of 5

Associate Name+ Adviser	Division	Tenure Dates Start/End	Termination Report	Adviser Report
Peng, Daizhi <i>Dr. Albert T. McManus</i>	(S) Divison not specified	1/5/1999 - 5/4/2002	Received	Received

1 Associates Listed

*** End of Center ***

+ (S) indicates the associate was a Senior.

Highlighted entries indicate no entry on the Award Init Screen but data on the Post Tenure Screen.

Associates On Tenure**1/24/2002 - 1/23/2003****Attachment 1****AMRMC - U.S. Army Medical Research Institute of Chemical Defense**

2/24/2003 Page 2 of 5

Associate Name+ Adviser	Division	Tenure Dates Start/End	Termination Report	Adviser Report
Dillman, James F., III <i>Dr. John J. Schlager</i>	Pharmacology Division	11/29/1999 - 4/19/2002	Received	Not Recd
Kerchner, Michael Thomas <i>Dr. Gary A. Rockwood</i>	(S) Drug Assessment Division	7/1/2002 - 4/30/2003		
Manley, Heather <i>Dr. Michael Adler</i>	Pharmacology Division	9/9/2002 - 9/8/2003		
Petrikovics, Ilona <i>Dr. Steven I. Baskin</i>	(S) Pharmacology Division	1/3/2003 - 1/2/2004		
Roberson, Melinda Rice <i>Dr. John H. McDonough</i>	Pharmacology Division	5/2/2000 - 5/31/2002	Received	Not Recd

5 Associates Listed

*** End of Center ***

+ (S) indicates the associate was a Senior.

Highlighted entries indicate no entry on the Award Init Screen but data on the Post Tenure Screen.

Associates On Tenure

1/24/2002 - 1/23/2003

Attachment 1

AMRMC - U.S. Army Medical Research Institute of Infectious Diseases

2/24/2003 Page 3 of 5

Associate Name+ Adviser	Division	Tenure Dates Start/End	Termination Report	Adviser Report
Coberley, Sadie Shea <i>Dr. Michael Hevey</i>	Virology Division	7/29/2002 - 7/28/2003		
Cote, Christopher Kevin <i>Dr. Susan L. Welkos</i>	Bacteriology Division	4/29/2002 - 4/28/2003		
Erwin, James Lawrence <i>Dr. Tran C. Chanh</i>	Pathology Division	8/10/1998 - 2/9/2002	Received	Received
Grogan, Case Kyn <i>Dr. Alan L. Schmaljohn</i>	Virology Division	6/26/2000 - 8/9/2002	Received	Not Recd
Keller, Michael Anthony <i>Dr. Alan L. Schmaljohn</i>	Virology Division	12/9/2002 - 12/8/2003		
Lackner, Daniel Francis <i>Dr. Michael Hevey</i>	Virology Division	6/3/2002 - 6/2/2003		
Mores, Christopher Nicolas <i>Dr. Michael J. Turell</i>	Virology Division	8/1/2002 - 7/31/2003		
Riemenschneider, Jenny Lynn <i>Dr. Connie S. Schmaljohn</i>	Virology Division	3/1/2000 - 7/19/2002	Received	Not Recd
Shurtleff, Amy Christine <i>Dr. Mary C. Guttieri</i>	Bacteriology Division	5/21/2002 - 5/20/2003		
Swenson, Dana Linne <i>Dr. Sina Bavari</i>	(S) Toxinology Division	3/13/2002 - 3/12/2003		
Warfield, Kelly Lyn <i>Dr. Sina Bavari</i>	Toxinology Division	6/17/2002 - 6/16/2003		

11 Associates Listed

*** End of Center ***

+ (S) indicates the associate was a Senior.

Highlighted entries indicate no entry on the Award Init Screen but data on the Post Tenure Screen.

Associates On Tenure**1/24/2002 - 1/23/2003****Attachment 1****AMRMC - U.S. Army Research Institute of Environmental Medicine**

2/24/2003 Page 4 of 5

Associate Name+ Adviser	Division	Tenure Dates Start/End	Termination Report	Adviser Report
Weyand, Peter Gregory <i>Dr. Reed W. Hoyt</i>	(S) Divison not specified	9/20/1999 - 12/31/2002	Not Recd	Not Recd

1 Associates Listed

*** End of Center ***

+ (S) indicates the associate was a Senior.

Highlighted entries indicate no intry on the Award Init Screen but data on the Post Tenure Screen.

Associates On Tenure

1/24/2002 - 1/23/2003

Attachment 1

AMRMC - Walter Reed Army Institute of Research

2/24/2003 Page 5 of 5

Associate Name+ Adviser	Division	Tenure Dates Start/End	Termination Report	Adviser Report
Allon, Nahum <i>Dr. Carl R. Alving</i>	(S) Division Of Biochemistry	8/1/2000 - 3/6/2002	Received	Received
Babai, Ilan <i>Dr. Carl R. Alving</i>	Division Of Biochemistry	7/17/2000 - 7/16/2002	Not Recd	Not Recd
Cohen, Sara <i>Dr. Luther E. Lindler</i>	(S) Division Of Commun Diseases/Immunology	8/2/2001 - 8/1/2002	Received	Not Recd
Darko, Christian Asare <i>Dr. Jeffrey A. Lyon</i>	Division Of Commun Diseases/Immunology	11/9/1998 - 5/8/2002	Received	Not Recd
Dow, Geoffrey Stuart <i>Dr. Rodger K. Martin</i>	Division Of Experimental Therapeutics	8/7/2000 - 8/6/2002	Received	Not Recd
Fleming, Sherry D. <i>Dr. George C. Tsokos</i>	Division Of Medicine	1/2/2001 - 1/1/2003	Received	Not Recd
Guerrero-Ontiveros, Maria de Lour <i>Dr. Luther E. Lindler</i>	Division Of Commun Diseases/Immunology	2/16/1999 - 8/13/2002	Received	Received
Iversen, Johanne Birgitte <i>Dr. Ladaporn Bodhidatta</i>	Armed Forces Res Inst Med Sci-Bangkok	3/11/2002 - 3/10/2003		
Leader, Haim Nissan <i>Dr. Richard K. Gordon</i>	(S) Division Of Biochemistry	11/4/2002 - 5/3/2003		
Milosevits, Janos <i>Dr. Carl R. Alving</i>	(S) Division Of Biochemistry	7/3/2000 - 7/2/2002	Received	Not Recd
Nair, Lalitha Punchayil Velayudhan <i>Dr. David E. Lanar</i>	(S) Division Of Commun Diseases/Immunology	0/11/2000 - 10/10/2000	Received	Not Recd
Russell, Bruce <i>Dr. Jetsumon P. Sattabongkot</i>	Armed Forces Res Inst Med Sci-Bangkok	4/11/2002 - 4/10/2003		
Thakur, Suman Siddharth <i>Dr. Bhupendra P. Doctor</i>	Division Of Biochemistry	1/18/2002 - 11/17/2002		
Yuan, Huijun <i>Dr. Carl R. Alving</i>	Division Of Biochemistry	4/9/2001 - 3/31/2002	Received	Not Recd
Zhang, Peng <i>Dr. Peter K. Chiang</i>	(S) Division Of Biochemistry	2/1/1999 - 7/31/2002	Received	Received
Zhu, Shuren <i>Dr. Ai J. Lin</i>	Division Of Experimental Therapeutics	11/1/1999 - 10/31/2002	Received	Received
Zollner, Gabriela Elaine <i>Dr. James W. Jones</i>	Armed Forces Res Inst Med Sci-Bangkok	4/22/2002 - 4/21/2003		

17 Associates Listed

*** End of Center ***

+ (S) indicates the associate was a Senior.

Highlighted entries indicate no entry on the Award Init Screen but data on the Post Tenure Screen.

Recommended Candidates 1/24/2002 - 1/23/2003
AMRMC- U.S. Army Medical
Research Institute of Chemical
Defense

Attachment 2

2/24/2003 Page 1 of 8

February 2002

A- Accepted Award

KERCHNER, MICHAEL T	Ph.D. Date: 1988
Citizenship: United States	Lehigh University/PA
Adviser: Dr. Gary A. Rockwood	Actual Starting Date: 7/01/02
Research Field: Neurotoxicology	Termination Date: 4/30/03
Research Title: Identifying Effective Pharmacological Interdiction and Treatment Options for Acute Soman Exposure: Further Refinement of a Predictive Animal Model	

W- Withdrew after Review/Recommend

AYALA-SILVA, TOMAS	Ph.D. Date: 2001
Citizenship: United States	Alabama Agricultur & Mechanical U
Adviser: Dr. Carmen M. Arroyo	
Research Field: Biophysical Chemistry	
Research Title: A Novel Multiple Therapeutical Approach (MTA) for the Development of a Candidate Topical Skin Protectant (TSP)	

June 2002

A- Accepted Award (2 Applicants listed)

MANLEY, HEATHER	Ph.D. Date: 2002
Citizenship: United States	Mayo Graduate School/MN
Adviser: Dr. Michael Adler	Actual Starting Date: 9/09/02
Research Field: Neuropharmacology	Termination Date: 9/08/03
Research Title: Intracellular Trafficking of a Delivery Vehicle for Antagonists of Botulinum Neurotoxin	

PETRIKOVICS, ILONA	Ph.D. Date: 1985
Citizenship: United States	Debrecen U Med
Adviser: Dr. Steven I. Baskin	Actual Starting Date: 1/03/03
Research Field: Toxicology	Termination Date: 1/02/04
Research Title: Cyanide Determination in Biological Fluids in the Presence of Various Cyanide Antidotes: Analytical, Toxicity and Antagonism Studies	

October 2002

1- Recommended

LANGSTON, JEFFREY L	Ph.D. Date: 2002
Citizenship: United States	Auburn University/AL
Adviser: Dr. Maurice L. Sipos	
Research Field: Neurotoxicology	
Research Title: Development of a Guinea Pig Test Battery to Assess the Behavioral Effects of Exposure to Chemical Warfare Nerve Agents	

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Recommended Candidates 1/24/2002 - 1/23/2003
AMRMC- U.S. Army Medical
Research Institute of Infectious
Diseases

Attachment 2

2/24/2003 Page 2 of 8

February 2002

1- Recommended (3 Applicants listed)

AIT ICHOU, MOHAMMED
Citizenship: United States
Adviser: Dr. Robert G. Ulrich
Research Field: Immunology
Research Title: Transcutaneous Immunization with Recombinant Staphylococcal Enterotoxin Vaccines

Ph.D. Date: 1996
Tours, U Of

HAWASH, IBRAHIM
Citizenship: Jordan
Adviser: Dr. Sina Bavari
Research Field: Biological Sciences
Research Title: Role of Lipid Raft Microdomains in Bacterial Superantigen Pathogenecity

Ph.D. Date: 2002
Purdue University/IN

YU, CHENGGANG
Citizenship: People's Republic of China
Adviser: Dr. Jaques Reifman
Research Field: Biomathematics
Research Title: Computer Systmes for Analysis of Proteins

Ph.D. Date: 2002
University of Cincinnati/OH

A- Accepted Award (4 Applicants listed)

LACKNER, DANIEL F
Citizenship: United States
Adviser: Dr. Michael Hevey
Research Field: Molecular Virology
Research Title: Identification of Viral and Host Cell Factors which Contribute to Marburg Virus Pathogenesis

Ph.D. Date: 2002
University of Florida
Actual Starting Date: 6/03/02
Termination Date: 6/02/03

MORES, CHRISTOPHER N
Citizenship: United States
Adviser: Dr. Michael J. Turell
Research Field: Emergency Medicine
Research Title: Genotypic and Phenotypic Analysis of Bunyavirus Reassortants in Iquitos, Peru

Ph.D. Date: 2002
Harvard University/MA
Actual Starting Date: 8/01/02
Termination Date: 7/31/03

SWENSON, DANA L
Citizenship: United States
Adviser: Dr. Sina Bavari
Research Field: Virology
Research Title: The Mechanism of Compartmentalization in Lipid Rafts During Filovirus Assembly and Budding

Ph.D. Date: 1993
University of Iowa
Actual Starting Date: 3/13/02
Termination Date: 3/12/03

Recommended Candidates 1/24/2002 - 1/23/2003
AMRMC- U.S. Army Medical
Research Institute of Infectious
Diseases

Attachment 2

2/24/2003 Page 3 of 8

WARFIELD, KELLY L
Citizenship: United States
Adviser: Dr. Sina Bavari
Research Field: Viral Immunology
Research Title: Establishment of a Model to Examine Viral Antigens in Human Context: "Immunologically Humanized" Transgenic Mice Expressing Human MHC Class II/CD4 and MHC Class I/CD8 Receptors

Ph.D. Date: 2001
Baylor College of Medicine/TX
Actual Starting Date: 6/17/02
Termination Date: 6/16/03

June 2002

Z- Recommended/No Funding

MARINER, JENNIFER
Citizenship: United States
Adviser: Dr. Sina Bavari
Research Field: Molecular Immunology
Research Title: Role of Cholesterol-Rich Lipid Raft Microdomains in Bacterial Superantigen Toxicity

Ph.D. Date: 2002
George Washington University/DC

A- Accepted Award

COBERLEY, SADIE S
Citizenship: United States
Adviser: Dr. Michael Hevey
Research Field: Viral Immunology
Research Title: Use of Filovirus Specific Antibodies to Evaluate Mechanisms of Virus Neutralization and Protective Epitopes

Ph.D. Date: 2002
University of Florida
Actual Starting Date: 7/29/02
Termination Date: 7/28/03

8- Declined

HOWARD, ELLEN M
Citizenship: United States
Adviser: Dr. John H. Carra
Research Field: Biophysics
Research Title: Biophysics of Structure and Function in the VP40 Proteins of Ebola and Marburg Viruses

Ph.D. Date: 2002
Georgetown University/DC

W- Withdrew after Review/Recommend (2 Applicants listed)

CHAWLA, NITESH V
Citizenship: India
Adviser: Dr. Jaques Reifman
Research Field: Biomathematics
Research Title: Physiologic Database Mining to Reduce Military Casualty Mortality and Morbidity

Ph.D. Date: 2002
University of South Florida

Recommended Candidates 1/24/2002 - 1/23/2003
AMRMC- U.S. Army Medical
Research Institute of Infectious
Diseases

Attachment 2

2/24/2003 Page 4 of 8

TRUTSCHL, MARJAN
Citizenship: Slovenia
Adviser: Dr. Jaques Reifman
Research Field: Biomathematics
Research Title: Visualization and Analysis Tools to Support Bioinformatics and Biomedical Computational Needs

Ph.D. Date: 2002
University of Mass-Lowell

October 2002

1- Recommended

RHOADES, ELIZABETH R
Citizenship: United States
Adviser: Dr. Sina Bavari
Research Field: Immunology
Research Title: Identification of Human MHC Class II-Restricted Epitopes of the Protective antigen (PA) and Novel Correlates of Immunity

Ph.D. Date: 1997
Colorado State University

A- Accepted Award (2 Applicants listed)

FRITZ, ELIZABETH A
Citizenship: United States
Adviser: Dr. Peter B. Jahrling
Research Field: Virology
Research Title: Modulation of the Immune Response During Smallpox and Monkeypox Infections

Ph.D. Date: 2002
Rush University/IL
Expected Starting Date: 3/03/03
Termination Date: 3/02/04

KELLER, MICHAEL A
Citizenship: United States
Adviser: Dr. Alan L. Schmaljohn
Research Field: Virology
Research Title: Therapeutic Targeting of Filovirus RNA-Dependent RNA Polymerase

Ph.D. Date: 2002
Wake Forest University/NC
Actual Starting Date: 12/09/02
Termination Date: 12/08/03

8- Declined (3 Applicants listed)

ELLISON, MICHAEL A
Citizenship: United States
Adviser: Dr. Leonard A. Smith
Research Field: Biochemistry
Research Title: Development of Vaccines Against Botulinum Neurotoxin Type G

Ph.D. Date: 2002
University of Utah

GARRUS, JENNIFER E
Citizenship: United States
Adviser: Dr. Sina Bavari
Research Field: Virology
Research Title: Late Domain Mediated Filovirus Budding

Ph.D. Date: 2002
University of Utah

Recommended Candidates 1/24/2002 - 1/23/2003
AMRMC- U.S. Army Medical
Research Institute of Infectious
Diseases

Attachment 2

2/24/2003 Page 5 of 8

MARIANS, RUSSELL C

Citizenship: United States

Adviser: Dr. Bradford Powell

Research Field: Bacteriology

Research Title: Characterizing the Immune Response to the F1-V Y.Pestis Vaccine

Ph.D. Date: 2001

Mt Sinai School of Medicine-CUNY

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Recommended Candidates 1/24/2002 - 1/23/2003
AMRMC- Walter Reed Army
Institute of Research

Attachment 2

2/24/2003 Page 6 of 8

February 2002

Z- Recommended/No Funding

MON, HLA M	Ph.D. Date: 2000
Citizenship: Myanmar	Nagasaki University
Adviser: Dr. Russell E. Coleman	
Research Field: Entomology Parasitology	
Research Title: Development of In Vitro Exoerythrocytic State of Human Malaria, Plasmodium Falciparum and Plasmodium Vivax	

1- Recommended

HOANG, PHUC K	Ph.D. Date: 2002
Citizenship: Vietnam	Liverpool, U Of
Adviser: Dr. Russell E. Coleman	
Research Field: Entomology	
Research Title: Sporogonic Development and Influential Factors on the Vector-Plasmodial Parasites Interaction in the Field	

A- Accepted Award (4 Applicants listed)

CHEN, YUE-QIN	Ph.D. Date: 1996
Citizenship: People's Republic of China	Zhongshan University/China
Adviser: Dr. Peter K. Chiang	Expected Starting Date: 2/03/03
Research Field: Molecular Biology	Termination Date: 2/02/04
Research Title: Expression and Regulation of Genes Involved in Apoptosis by Sulfur Mustards (HD) and 2-Chloroethylethyl Sulfide (CEES)	

MIROSHNIKOVA, OLGA V	Ph.D. Date: 1999
Citizenship: Russia	Russian Academy of Medical Sci
Adviser: Dr. Ai J. Lin	Expected Starting Date: 2/24/03
Research Field: Medicinal Chemistry	Termination Date: 2/23/04
Research Title: Potential Inhibitors of Malaria Parasites	

RUSSELL, BRUCE	Ph.D. Date: 2001
Citizenship: Australia	Univ of Queensland/Australia
Adviser: Dr. Jetsumon P. Sattabongkot	Actual Starting Date: 4/11/02
Research Field: Parasitology	Termination Date: 4/10/03
Research Title: Development of an In-Vitro Exoerythrocytic Stage of Plasmodium Vivax for Applied Studies in Malaria Drug and Vaccine Development	

ZOLLNER, GABRIELA E	Ph.D. Date: 2001
Citizenship: United States	University of Greenwich/England
Adviser: Dr. James W. Jones	Actual Starting Date: 4/22/02
Research Field: Entomology Parasitology	Termination Date: 4/21/03
Research Title: Population Dynamics of Sporogony in Thailand	

Recommended Candidates 1/24/2002 - 1/23/2003
AMRMC- Walter Reed Army
Institute of Research

Attachment 2

2/24/2003 Page 7 of 8

June 2002

A- Accepted Award (2 Applicants listed)

LEADER, HAIM N	Ph.D. Date: 1970
Citizenship: Israel	Hebrew Univ of Jerusalem/Israel
Adviser: Dr. Richard K. Gordon	Actual Starting Date: 11/04/02
Research Field: Biochemical Pharmacology	Termination Date: 5/03/03
Research Title: Purification of Proteins with Macroaffinity Ligand Sponges (polyurethane immobilized ligands)	

THAKUR, SUMAN S	Ph.D. Date: 2002
Citizenship: India	University of Delhi/India
Adviser: Dr. Bhupendra P. Doctor	Actual Starting Date: 11/18/02
Research Field: Biological Chemistry	Termination Date: 11/17/03
Research Title: Synthesis/Isolation of Novel Reactivators for Treatment Against Nerve Agent Toxicity	

W- Withdrew after Review/Recommend

CAHILL, KEVIN E	Ph.D. Date: 1967
Citizenship: United States	Harvard University/MA
Adviser: Dr. David E. Lanar	
Research Field: Molecular Biophysics	
Research Title: Protein Folding	

X- NRC Withdrew Award

DU, YIDONG	Ph.D. Date: 2002
Citizenship: People's Republic of China	Umea, Univ Of
Adviser: Dr. Luther E. Lindler	
Research Field: Medical Microbiology	
Research Title: Study on the Genes of Yersinia Pestis that Expressed Inside Macrophage	

October 2002

1- Recommended

SALLUM, MARIA A	Ph.D. Date: 1994
Citizenship: Brazil	Sao Paulo, U
Adviser: Dr. Richard C. Wilkerson	
Research Field: Systematic Biology	
Research Title: Systematic Revision and Phylogenetic Analysis of the Leucosphyrus Group of the Anopheles (Cellia) (Diptera: Culicidae)	

Recommended Candidates 1/24/2002 - 1/23/2003
AMRMC- Walter Reed Army
Institute of Research

Attachment 2

2/24/2003 Page 8 of 8

A- Accepted Award (2 Applicants listed)

KUBATA, BRUNO K	Ph.D. Date: 1998
Citizenship: Congo	Osaka City University/Japan
Adviser: Dr. Samuel K. Martin	Expected Starting Date: 3/31/03
Research Field: Molecular Pathology	Termination Date: 3/30/04
Research Title: The Role of Arachidonic Acid Metabolites in the Life Cycle and Pathogenesis of Parasitic Protozoa	

THATHY, VANDANA	Ph.D. Date: 2000
Citizenship: Kenya	New York University
Adviser: Dr. Jose A. Stoute	Expected Starting Date: 5/01/03
Research Field: Infectious Diseases	Termination Date: 4/30/04
Research Title: Complement Receptor 1 Gene Polymorphisms and Severe Plasmodium falciparum Malaria	

W- Withdrew after Review/Recommend

ABANULO, JUDE C	Ph.D. Date: 2002
Citizenship: England, U.K.	University of Southampton/Eng
Adviser: Dr. Richard K. Gordon	
Research Field: Biotechnology	
Research Title: Hand Held Cholinesterase Units	

November 2002

1- Recommended (2 Applicants listed)

KADAR, TAMAR	Ph.D. Date: 1989
Citizenship: Israel	Technion-Israel Institute of Tech
Adviser: Dr. James M. Petras	
Research Field: Neurotoxicology	
Research Title: Effects of Low Dose Exposure of Organophosphates on Synaptic Plasticity in the Central Nervous System	

KONGKASURIYACHAI, DARIN	Ph.D. Date: 2003
Citizenship: Thailand	Johns Hopkins University/MD
Adviser: Dr. Jetsumon P. Sattabongkot	
Research Field: Infectious Diseases	
Research Title: Molecular Mechanism of Relapsing Malaria: Identification of Hypnozoite Stage Antigens by Differential Display	

* * *

**Summary of
Associate Patent Activity**

1/24/2002 - 1/23/2003

Attachment 3
2/24/2003 Page 1 of 1

U.S. Army Medical Research and Materiel Command

Darko, Christian Asare 11/09/1998 5/08/2002

1 Patent Title: Development of an E.coli Expressed Recombinant MSP-142 (FVO) as a Vaccine for Malaria

Co-authors: Evelina Angov, Christian A. Darko, Jeffrey A. Lyon

Date Applied For: 3/18/2002 Date Approved For:

Grogan, Case Kyn 6/26/2000 8/09/2002

1 Patent Title: Chimeric Filovirus Glycoprotein

Co-authors: Case C. Grogan, Michael C. Hevey, and Alan L. Schmaljohn

Date Applied For: 1/31/2002 Date Approved For:

Nair, Lalitha Punchayil Velayudhan 10/11/2000 10/10/2002

1 Patent Title: Process for purification of recombinant Plasmodium falciparum AMA-1 from E.coli

Co-authors: D.E. Lanar, S. Dutta, L.A. Ware and Lalitha P.V.

Date Applied For: 3/26/2002 Date Approved For:

AMRMC- U.S. Army Medical Research and Materiel Comm:

Allon, Nahum

8/01/2000 3/06/2002

- 2 A plasmid containing human butyrylcholinesterase gene was successfully encapsulated in small unilamellar liposomes (150-200nm) with high efficiency (>60%). The encapsulated liposomes were purified from the non encapsulated DNA.
- 4 Fusion peptides were designed synthesized and tested in in-vitro and in-vivo system. The fusion peptides are designed to change their conformation due to changes in the pH and thus disrupt the endosomal membrane and release the plasmid.
- 6 Six targeting peptides for lung cells were designed and tested for their selectivity to various lung cell lines.
- 8 Various linkers for the conjugation between the peptides and the liposomes were tested. The direct linkage to the phospholipid was finally adopted for further research.
- 10 An animal model using an otoscopic intra-tracheal instillation of liposomes containing plasmid were tested and adopted for the in-vivo testing of the delivery system.

Cohen, Sara

8/02/2001 8/01/2002

- 1 Subtractive genome [chromosome] analysis of *Y.pestis* done at the end of 2001, yielded 127 unique ORFs (done by the bioinformatics group at IIBR).
- 2 The selected ORFs were reexamined for similarity to the enlarged [May 2002] NCBI nr DB as well as to the 141 microbial finished and unfinished genome sequences. These analyses yielded only few uniques.
- 3 The 127 ORFs were searched for their possible involvement in the pathogenicity of *Y.pestis* and similarity to *B.melitensis* and *F.tularensis*.
- 4 45 ORFs were selected for further analyses, 29 of them were chosen for mutagenesis.
- 5 A concordance analysis of *S.typhi* and *Y.pestis* genome yielded 15 ORFs, which are common. most of them unknown.

Darko, Christian Asare

11/09/1998 5/08/2002

- 1 By PCR method, *Plasmodium falciparum* FVO MSP-1(42) gene was cloned into an *E. coli* expression vector. DNA sequencing confirmed that the clone chosen for further studies is wild type. Expression of FVO MSP-1(42) gene was confirmed by Western blot.
- 2 Fermentation and purification conditions acceptable for human use were developed in the lab and transferred to the Dept. of Biologics, WRAIR, where the protein was produced and vialled. The protein was more than 95% pure by Coomassie blue stain gel.

AMRMC- U.S. Army Medical Research and Materiel Comm:

- 3 The protein was highly immunogenic in mice and rabbits. Rabbit sera raised against FVO MSP-1(42) were inhibitory against *P. falciparum* growth in vitro.
- 4 In a vaccine trial conducted in CDC (Atlanta), Aotus monkeys were immunized separately with FVO MSP-1(42) or 3D7 MSP-1(42) and challenged with an erythrocytic stage FVO strain. The former was found to be highly protective while the latter was not.
- 5 A new construct of FVO MSP-1(42) gene has been made by synonymous mutation. This enhances expression and solubility of the protein. About 200-fold increase in expression has been achieved so far. This is due to enter GMP production this month.

Dillman, James F., III

11/29/1999 4/19/2002

- 2 Exposure of cultured human epidermal keratinocytes (HEK) to sulfur mustard (SM) results in significant changes in protein expression.
- 3 Exposure of HEK to SM results in the activation of stress response pathways involved in inflammation.
- 4 Pharmacologic inhibition of these stress response pathways attenuates the SM-induced inflammatory response.
- 5 Exposure of HEK to SM results in the perturbation of proteins involved in cytoskeletal maintenance.

Dow, Geoffrey Stuart

8/07/2000 8/06/2002

- 1 Global expression changes measured by microarrays suggested mitochondrial electron transport, phosphoinositol metabolism and DNA repair may be neuronal targets of antimalarial endoperoxides.
- 2 Antimalarial endoperoxides were found to inhibit electron transport at the level of cytochrome oxidase at high concentrations, but RT-PCR could not confirm unequivocal regulation of mitochondrial genes by arteether in neuronal cells.
- 3 A power simulation utilizing published array data and novel p-value correction methods was used to determine theoretical false discovery rates and assess adequate sample sizes in required for variance-based analysis of microarray data.
- 4 At appropriate sample sizes, using RT-PCR to validate microarray data, and conventional antimalarial drugs as control compounds, actual false discovery rates were found to be comparable to theoretical error rates.
- 5 Transcriptional changes induced by antimalarial drugs, mefloquine and arteether, were investigated in neuronal cells using optimized microarray statistical analysis methods.

**Summary of
Associate Research**

1/24/2002 - 1/23/2003

Attachment 3
2/24/2003 Page 3 of 7

AMRMC- U.S. Army Medical Research and Materiel Comm:

Erwin, James Lawrence

8/10/1998 2/09/2002

1 Investigated the role of anthrax lethal toxin upon the expression of pro-inflammatory cytokines by macrophages.

2 Demonstrated that lethal toxin inhibits rather induces cytokine expression.

3 Demonstrated that inhibition occurs at the level of transcription and signal transduction.

4 Characterized the effect of anthrax lethal toxin upon signal transduction in macrophages.

5 Characterized the response of toxin-resistant macrophages to infection by B. anthracis as compared to toxin-sensitive macrophages.

Fleming, Sherry D.

1/02/2001 1/01/2003

1 Complement inhibitors can prevent local and systemic injury due to mesenteric ischemia/reperfusion (IR).

2 The anaphylotoxin C5a is critical for both local and systemic tissue damage.

3 The classical complement pathway is activated by natural antibodies in response to IR-induced damage.

4 IgM and IgG natural antibodies each contribute unique aspects of the tissue damage.

5 The natural antibody repertoire is altered in the absence of complement receptor 2 (CR2).

Grogan, Case Kyn

6/26/2000 8/09/2002

1 Carried out a guinea pig vaccine protocol using the VEE-replicon protein expression system as a vaccine vector to test chimeric Ebola/Marburg glycoproteins (GP) as protective antigens against Ebola virus and Marburg virus.

2 Results obtained using Marburg/Ebola chimeric GP proteins indicated that glycoprotein protective epitope(s) resides within the GP2 subunit of the MBGV GP protein and at least partially within the GP2 subunit of the EBOV GP protein.

AMRMC- U.S. Army Medical Research and Materiel Comm:

- 3 Cloned VEE replicons containing alternative chimeric Ebola and Marburg GP genes, with smaller portions of the GP2 region swapped between Ebola and Marburg GP genes, in order to narrow down the location of protective epitopes in the GP2 subunit.
- 4 Cloned VEE-replicons expressing the GP2 portion of either Ebola or Marburg GP protein in order to further investigate protective epitopes within the GP2 portion of GP for each virus. Live-virus challenge experiments are currently underway.
- 5 Carried out collaborations with two different research groups regarding: effect of live Marburg and Ebola virus infection on the activation of cultured dendritic cells; binding specificity of live Ebola and Marburg virus on multiple cell types.

Guerrero-Ontiveros, Maria de Lourdes

2/16/1999 8/13/2002

- 1 Used Transposon TnphoA mutagenesis to identify potential Yersinia pestis genes which contribute to plague pathogenesis.
- 2 Screened the TnphoA fusions in Y. pestis KIM5 for temperature regulated membrane-bound or secreted proteins.
- 3 Identified nine thermoregulated chromosomal and plasmid genes encoding transmembrane and periplasmic proteins, five of them of unknown function.
- 4 Investigated the effect these phoA mutants may have on virulence in a macrophage infection assay.
- 5 Initiated the characterization of the function of one up-regulated, temperature-sensitive gene product designated ORF60.

Milosevits, Janos

7/03/2000 7/02/2002

- 1 Analysis of squalene reacting monoclonal mouse antibodies.
- 2 Detecting of squalene reacting natural antibodies in healthy and polyvaccinated humans by FACS.
- 3 Analysis of crossreactivity of squalene reacting antibodies.
- 4 Heat dependence binding of natural antibodies to squalene containing liposomes.

AMRMC- U.S. Army Medical Research and Materiel Comm:

- 5 Analysis of rat and pig granulocyte oxidative burst, effected by liposomes.

Nair, Lalitha Punchayil Velayudhan

10/11/2000 10/10/2002

- 1 Worked in the development of the purification of an important malaria vaccine target antigen PfAMA/E that (99% pure) was scaleable and transferable to GMP facility, and that induced high titre growth inhibitory antibodies in rabbits.
- 3 Purification protocol was used in the writing of Batch Production Record BPR-480, entitled "Preparation of a Bulk Lot Recombinant P. falciparum AMA1/E Protein Expressed in Escherichia coli, Origami Strain.
- 5 The data from this analysis will be part of an IND application to the FDA to use this protein as a vaccine in humans.
- 7 Cloned, expressed, purified and immunologically characterized all six subdomain constructs from ectodomain of AMA-1 in bacteria. It enabled to fine map the immunodominant regions of the whole molecule.
- 9 Erythrocyte binding activity of AMA-1 and the subdomain fragments is established from this study. This data may help to develop better AMA-1 based constructs for vaccine study.

Peng, Daizhi

1/05/1999 5/04/2002

- 1 Culture directed antibiotics have obvious therapeutical effects on burn wound sepsis rats within 3 days postburn.
- 2 The selection and dose of cultured antibiotics have influence on the efficacy of delayed antimicrobial therapy in burn wound sepsis.
- 3 Delayed piperacillin treatment mimic the clinical scenario where indicated antibiotic therapy is given and some patients still die of infection and organ dysfunction.
- 4 PDTC (NF-kB inhibitor) has no effect on the survival of sepsis rats in delayed piperacillin treatment, this might be related to the decreased serum level of IL-1 beta.
- 5 HMG-1 may be used as helpful markers of infection, tissue injury and inflammation.

AMRMC- U.S. Army Medical Research and Materiel Comm:

Riemenschneider, Jenny Lynn

3/01/2000 7/19/2002

1 Baculovirus derived Ebola virus glycoproteins are partially protective in guinea pigs.

2 DNA vaccinated followed by protein boosts with Ebola virus glycoprotein is partially protective in guinea pigs.

3 DNA encoding the protective antigen of Anthrax is protective against spore challenge in a rabbit model.

4 DNA encoding the structural proteins of Venezuelan equine encephalitis virus is protective against infection in guinea pig.

5 DNA antigens from multiple infectious agents can be combined in a vaccine without decreased efficacy.

Roberson, Melinda Rice

5/02/2000 5/31/2002

1 180 animals exposed to low-level sarin doses or saline (controls). Animals examined for signs of sarin intoxication, body temp, weight, EEG and general activity, and flinch threshold during the exposure period, and 3, 10, 30 and 100 days post-exposure.

2 Low-level sarin exposure results in a dramatic reduction of red blood cell (RBC) cholinesterase (ChE) activity in both the 0.2 LD50 and 0.4 LD50 groups (<40% and <20% of baseline, respectively), as compared to controls.

3 Significant reduction in brain CHE activity in the six brain regions examined in the 0.4 LD50, but not in the 0.2 LD50, sarin animals, compared to controls. There was a steady return to baseline by 100 days post-exposure in both RBC and brain ChE.

4 Significant increases in activity (total distance traveled and center time) in the 0.4 animals, and in rearing in both the 0.2 & 0.4 animals at 100 days post-exposure. A mild trend toward increased flinch threshold in exposed animals was observed.

5 No change in body weight or temperature (pre- and post-injection), or in stereotypical behavior at any time point examined. No sarin-related change in EEG activity during the exposure period; the analysis of post-exposure EEG records is ongoing.

Yuan, Huijun

4/09/2001 3/31/2002

1 cDNA encoding 583-amino-acid mature bovine AChE was amplified and cloned into TA vector for sequencing.

2 Three expression plamids pBACgus3-ACHE (9.4kb), pBACgus9-ACHE (9.6kb), and pBACgus10-ACHE(9.7kb) were constructed and confirmed the correction by sequencing.

AMRMC- U.S. Army Medical Research and Materiel Comm:

- 3 Two expression plasmid pBACgus3-ACHE and pBACgus10-ACHE were transfected the Sf9 cells with BacVector-3000 Triple Cut Virus DNA by Eufectin Transfection Reagent.

Zhang, Peng

2/01/1999 7/31/2002

- 1 The molecular mechanism of CEES induced apoptosis was discovered. CEES can inhibit PKD1-Akt/Pkb pathway, and in turn to inhibit Bcl family expression and stimulate caspases expression.
- 2 A genomic DNA fragment, which contain promoter region of human GST1, GSTa1, were cloned and finished DNA sequencing analysis.
- 3 A series inhibitors of caspases were designed to synthesis based on the structure of human caspase 3, and the activators were designed to synthesis based on malaria caspase structure. Human caspase 3 was overexpressed in E coli system.
- 4 A novel apoptosis related gene, methionine aminopeptidase (MetAP), was cloned from malaria species. DNA sequencing of *P. falciparum* MetAP and *P. bergheii* MetAP were finished.
- 5 The noval apoptosis inhibitors, IAPs, were cloned from malaria species.

Zhu, Shuren

11/01/1999 10/31/2002

- 1 A novel class of peptidomimetic antimalarial agents has been discovered.
- 2 Compounds exhibited potent in vitro and in vivo activity against malarial parasites.

FINAL REPORT FORM

If you have downloaded this form, enter the information electronically.
Return this form directly to the NRC as an e-mail attachment or print out and mail.

1) NAME

Allon, Nahum

2) DATE

July 3, 2001

3) Program / Agency

or enter abbreviation

Lab / Center

Location

AMRMC

WRAIR

Biochemistry

Silver Spring MD

4) DATES OF TENURE

August 1, 2000 -- to -- July 31, 2001

5) NAME OF RESEARCH ADVISER

B. P. Doctor

6) IF YOU ARE ON LEAVE FROM A PROFESSIONAL POST, WILL YOU RETURN TO YOUR PREVIOUS EMPLOYER?

☒ Yes ☐ No

7) PROFESSIONAL AWARDS RECEIVED, SOCIETY OFFICES HELD DURING TENURE

8) PROFESSIONAL TRAVEL DURING TENURE List locations and dates of travel to scientific meetings; group into domestic and foreign.

Neurotoxicity meeting in Pucon Chile march 16-18 2001, Enzyme 2001 meeting in Orlando, Florida, May 13-18, 2001

9) SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES List location(s) and date(s).

10) TITLE OF RESEARCH PROPOSAL

Induction of protection against Organophosphorous poisoning by liposome mediated delivery of the human Butyryl Cholinesterase gene to the lung

11) SUMMARY OF RESEARCH DURING TENURE Itemize significant findings in concise form (25 words/250 characters each item.) Utilize concepts and key words.

1) A plasmid containing human butyrylcholinesterase gene was successfully encapsulated in small unilamellar liposomes (150-200nm) with high efficiency (>60%). The encapsulated liposomes were purified from the non encapsulated DNA.

2) Fusion peptides were designed synthesized and tested in in-vitro and in-vivo system. The fusion peptides are designed to change their conformation due to changes in the pH. and thus disrupt the endosomal membrane and release the plasmid.

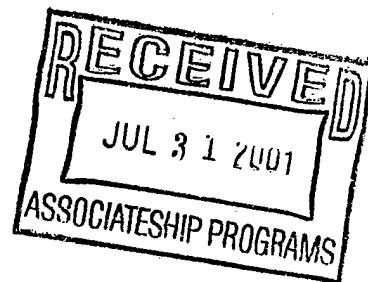
3) Six targeting peptides for lung cells were designed and tested for their selectivity to various lung cell lines.

4) Various linkers for the conjugation between the peptides and the liposomes were tested. The direct linkage to the phospholipid was finally adopted for further research

5) An animal model using an otoscopic intra-tracheal instillation of liposomes containing plasmid were tested and adopted for the in-vivo testing of the delivery system.

12) RESEARCH IN PROGRESS Briefly describe in 100 words or less.

A gene delivery system based on liposomes specially formulated for targeting of lung cells was designed and formulated. The efficacy of the targeting system as well as the efficacy of the fusion peptide has been tested and its efficiency established. We are now in the process of testing and evaluating the delivery system in the in-vivo mice model. Changes are required to be



made in the plasmid since only poor expression was detected using the in-vitro cell line model. We are now considering the use of additional, different plasmid system in order to validate the efficacy of the delivery system.

13) PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide complete citation(s) including author(s), full name of journal, volume number, page number(s), year of publication.

(a) Publications in peer-reviewed journals:

(b) Books or book chapters:

(c) Manuscripts in preparation, manuscripts submitted:

14) PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES

Provide complete reference with author(s), title, abstract/proceeding citation, meeting name, location. Group into domestic and foreign.

Nahum Allon, Clarence A. Broomfield and Bhupendra P. Doctor. Induction of protection against Organophosphate poisoning by liposome mediated delivery of human butyrylcholinesterase (HuBChE) gene to the lungs. In International symposium on applications of enzymes in chemical and biological defense. Orlando (UAS) May 2001

15) PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide titles, authors, and dates of applications.

16) NEW POSITION STATUS/CATEGORY Please indicate only one.

☒ Research -- National Government (U.S. or Foreign)

☐ Administration -- U.S. Govt. (Fed., State, or Local)

☐ Continuation at Host Lab/Center

Abbreviate Host Lab/Center: IBR

☐ College/University

☐ Postdoctorate

☐ Self Employment

☐ Non Profit

☐ Industry

☐ Other

Please specify: _____

17) NEW POSITION TITLE AND NAME (not address) OF ORGANIZATION

Senior researcher in Israel Institute of Biological Research

18) FORWARDING ADDRESS (to which your tax statement will be mailed)

Nahum Allon Dolev 9 Macabim 71908 Israel

19) APPRAISAL OF THE ASSOCIATESHIP PROGRAM

Please evaluate each of the following on a scale of 1 (poor) to 10 (excellent):

10 a) Of what value was this experience to your career?

10 b) What is your evaluation of your experience in the laboratory?

10 c) What is your evaluation of your interaction with the NRC?

Please provide any additional comments on the usefulness of the Associateship Program to you, including suggestions for improvements.

I had a very fruitful year. Keep on doing the good job.

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National Research Council Associateship Programs

FINAL REPORT

Enter information electronically in Layout view.

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) Associate Last or Family Name		First Name	M.I.
Cohen		Sara	
2) FORWARDING Address (to which your tax statement will be mailed)		FORWARDING Phone and E-Mail (if known)	
3/10 HaEshel St., Kfar-Saba 44235		972-9-7650945	
3) Today's Date		Dates of Tenure	
July 30, 2002		from August 1, 2001 to August 1, 2002	
4) Current Agency	Laboratory or NASA Center	Division / Branch / Directorate	
AMRMC	AMRIID	WRAIR CD&I	

5) NAME OF RESEARCH ADVISER

Luther E. Lindler

6) TITLE OF RESEARCH PROPOSAL

Universal ORF plasmid library for directet mutagenesis of potential virulence genes in *Y.pestis*, *F.tularensis* and *B.melitensis* bacteria

7) SUMMARY OF RESEARCH DURING TENURE Itemize significant findings in concise form, utilizing key concepts/words.

1) Subtractive genome [chromosome] analysis of *Y.pestis* done at the end of 2001, yielded 127 unique ORFs (done by the bioinformatics group at IIBR)

2) The selected ORFs were reexamined for similarity to the enlarged [May 2002] NCBI nr DB as well as to the 141 microbial finished and unfinished genome sequences. These analyses yielded only few uniques

3) The 127 ORFs were searched for their possible involvement in the pathogenicity of *Y.pestis* and similarity to *B.melitensis* and *F.tularensis*

4) 45 ORFs were selected for further analyses, 29 of them were chosen for mutagenesis

5) A concordance analysis of *S.typhi* and *Y.pestis* genome yielded 15 ORFs, which are common. most of them unknown.

8) RESEARCH IN PROGRESS Describe in no more than 100 words.

The genome sequence of *Y.pestis* was published as well as that of *S.typhi*. A subtractive analysis of these genomes was done. Further cycles of subtraction of bacterial genes, which were present in the nonredundent NCBI database and share sequence similarity, excluding genes of *B.melitensis* and *F.tularensis*, yielded 127 ORFs potentially unique for *Y.pestis* or these pathogens. Analysis of these ORFs included search for Conserved Domains, Cluster Orthologous Groups affiliation and Biochemical pathways, which may be relevance to virulence. Possible role in mammalian signal transduction pathways and similarity to virulence genes of bacteria as well as the locations of the ORFs in the genome were some of the criteria for choosing ORFs for further analysis. Out of those, 29 have many of the chosen characteristics and were selected for targeted mutagenesis and experimental virulence analyses, analyses to be done at Dr Lindler's lab and and at my lab back at IIBR.

9) PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

10 PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

Domestic

Sara Cohen², Anat Zvi², Naomi Ariel², Sydney H. Lee¹, Avigdor Shafferman² and Luther E. Lindler^{1*}
Department of Bacterial Diseases, WRAIR, Silver Spring, MD and Department of Biochemistry and Molecular Genetics,
IIBR, Ness-Ziona, Israel²
Yersinia pestis as an Emerged Pathogen; A Comparative Bioinformatics Approach
CB Defense Conference in November 2002, Hunt Vally, MD

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* Include dates, names and locations of seminars.

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

14) *NEW POSITION TITLE*

15) *NEW POSITION ORGANIZATION* Provide name and address of organization.

IIBR, Ness-Ziona, 74100, Israel

16) *NEW POSITION STATUS / CATEGORY* Please indicate only one.

- ☐ Remain at Host Agency as Permanent Employee
☐ Remain at Host Agency as Contract/Temporary Employee
Abbreviate Host Laboratory/Center _____
☐ Research Position at Another US Government Laboratory
☐ Administrative Position at US Government Laboratory
☒ Research Position at Foreign Government Laboratory

- ☐ Research/Teaching at US College/University
☐ Research/Teaching at Foreign College/University
☐ Research/Admin Position in Industry
☐ Research/Admin in Non-Profit Organization
☐ Postdoctoral Research
☐ Self Employed
☐ Other Please specify _____

17) *APPRAISAL OF THE ASSOCIATESHIP PROGRAM* Please rate each of the following on a scale of 1 (poor) to 10 (excellent).

Your experience as a NRC Research Associate in this federal Laboratory

- 8** Short-term value: development of knowledge, skills, and research productivity
Comments:

- ____ Long-term value: how your NRC Associateship award affected your career to date
Comments:

Administrative Support

- 8** Quality of the support you received from the federal Laboratory
10 Quality of the support you received from the NRC staff
Comments:

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT*

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National Research Council Associateship Programs

ASSOCIATESHIP PROGS
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FINAL REPORT

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1) Associate Last or Family Name		First Name	M.I.
Darko		Christian	A
2) FORWARDING Address (to which your tax statement will be mailed)		FORWARDING Phone and E-Mail (if known)	
8510 16th Street, Apt 702, Silver Spring, MD 20910		301-319-9337/christian.darko@na.amedd.army.mil	
3) Today's Date		Dates of Tenure	
May 8, 2002		from November 9, 2002 to May 8, 2002	
4) Current Agency	Laboratory or NASA Center	Division / Branch / Directorate	
AMRMC	WRAIR	Immunology	

5) NAME OF RESEARCH ADVISER

Dr. Jeffrey Lyon

6) TITLE OF RESEARCH PROPOSAL

Requirement for replicating native structure to induce protective immunity against malaria parasites with recombinant MSP-1(42) in Aotus monkeys

7) SUMMARY OF RESEARCH DURING TENURE Itemize significant findings in concise form, utilizing key concepts/words.

1) By PCR method, Plasmodium falciparum FVO MSP-1(42) gene was cloned into an E. coli expression vector. DNA sequencing confirmed that the clone chosen for further studies is wild type. Expression of FVO MSP-1(42) gene was confirmed by Western blot.

2) Fermentation and purification conditions acceptable for human use were developed in the lab. and transferred to the Dept of Biologics, WRAIR, where the protein was produced and vialled. The protein was more than 95% pure by Coomassie blue stain gel.

3) The protein was highly immunogenic in mice and rabbits. Rabbit sera raised against FVO MSP-1(42) were inhibitory against P. falciparum growth in vitro.

4) In a vaccine trial conducted in CDC (Atlanta), Aotus monkeys were immunized separately with FVO MSP-1(42) or 3D7 MSP-1(42) and challenged with an erythrocytic stage FVO strain. The former was found to be highly protective while the latter was not.

5) A new construct of FVO MSP-1(42) gene has been made by synonymous mutation. This enhances expression and solubility of the protein. About 200 fold increase in expression has been achieved so far. This is due to enter GMP production this month.

8) RESEARCH IN PROGRESS Describe in no more than 100 words.

The Aotus monkeys which were used in the vaccine trial were rechallenged on May 7, 2002 with a heterologous parasite strain. The purpose is to find out (a) the duration of immunity against the vaccine candidates and challenge & (b) Is immunity strain specific? Samples obtained during the vaccine trials in Aotus monkeys will be analyzed by ELISA, Growth Inhibition Assay and Processing Inhibition Assay. Specificity of antibodies raised against the various fragments (p33 and p19, as well EGF domains) of the MSP-1(42) [above] will be analyzed by ELISA. GMP Fermentation and purification conditions for clinical grade material of the new FVO MSP-1(42) construct are being developed in the laboratory. Large scale GMP fermentation and purification will be conducted by the Dept of Biologics, WRAIR in June and August 2002, respectively. Analyses [safety, immunogenicity, etc] of FVO MSP-1(42) vaccine will be conducted immediately following production. Clinical trials in humans will follow soon.

9) PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

N/A

b) Books, book chapters, other publications

N/A

c) Manuscripts in preparation, manuscripts submitted

At least, two manuscripts are in preparation awaiting the final analyses of the serum samples from the vaccine trial in Aotus monkeys and the approval of a patent/invention disclosure filed on March, 2002.

10 PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide titles, inventors, and dates of applications.

Invention Disclosure/ Patent

WRAIR 02/09

MRMC WRAIR 02-__ "Development of an E.coli expressed recombinant MSP-142 (FVO) as a vaccine for Malaria", Evelina Angov, Christian A. Darko, Jeffrey A. Lyon, submitted on March 18, 2002

11) PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

N/A

Domestic

N/A

12) SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES Include dates, names and locations of seminars.

N/A

13) PROFESSIONAL AWARDS RECEIVED DURING TENURE

N/A

14) NEW POSITION TITLE

Research Associate

15) NEW POSITION ORGANIZATION Provide name and address of organization.

Walter Reed Army Institute of Research, Department of Immunology, Bldg 503 Room 3W76, Robert Grant Avenue, Silver Spring, MD 20910

16) NEW POSITION STATUS / CATEGORY Please indicate only one.

- ☐ Remain at Host Agency as Permanent Employee
☒ Remain at Host Agency as Contract/Temporary Employee
Abbreviate Host Laboratory/Center WRAIR
☐ Research Position at Another US Government Laboratory
☐ Administrative Position at US Government Laboratory
☐ Research Position at Foreign Government Laboratory

- ☐ Research/Teaching at US College/University
☐ Research/Teaching at Foreign College/University
☐ Research/Admin Position in Industry
☐ Research/Admin in Non-Profit Organization
☐ Postdoctoral Research
☐ Self Employed
☐ Other Please specify _____

17) APPRAISAL OF THE ASSOCIATESHIP PROGRAM Please rate each of the following on a scale of 1 (poor) to 10 (excellent).

Your experience as a NRC Research Associate in this federal Laboratory

Short-term value: development of knowledge, skills, and research productivity

Comments:

10

I have learnt a lot by way of science during my tenure. Many new techniques were learnt and many of the things learnt in my graduate studies were put into use. I had the opportunity of reading and interpreting scientific literature with researchers both at WRAIR and outside.

Long-term value: how your NRC Associateship award affected your career to date

Comments:

10

I believe the experience gained here will pave way for many opportunities in my scientific career.

Administrative Support

9 Quality of the support you received from the federal Laboratory

9 Quality of the support you received from the NRC staff

Comments:

Except some few administrative problems I had during the first year, I think the quality of support was excellent.

18) PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT

I suggest the following:-

(1) (a) Formation of NRC Associates Association at the various laboratories (e.g. WRAIR). This will allow associates to know each other and if possible establish working relationship or collaboration for the future.

(b) Associates can get more information about life situation in the areas in which they live from other associates who may know the area better.

(c) An association for associates may help answer questions related to taxes, health insurance, etc. which may be new to associates who will be coming to the USA for the first time.

(2) More visits by the Program Headquarters to the various laboratories will be appreciated by associates, I think. At the moment, there is one per year. In the absence of a visit by the program (headquarters), meetings can be organized by the laboratory representatives to discuss issues affecting associates.

(3) More training can be achieved by researchers from developing countries around the world if information about the program are sent out to these areas. I think, more countries will be covered if associates are asked to provide list of research institutions where potential associates can be reached. A couple of days ago, I did email addresses of institutes of some countries in Africa to Dr. Judy Nyquist.

US Postal Service mailing address

Research Associateship Programs [TJ 2114]
National Research Council
2101 Constitution Avenue NW
Washington, DC 20418

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fax

202 - 334 - 2759

website

www.national-academies.org/rap

NRC ASSOCIATESHIP OFFICE

cc:

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1000 Thomas Jefferson Street, NW
Washington, DC 20007

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FINAL REPORT

Enter information electronically in Layout view.

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) Associate Last or Family Name		First Name	M.I.
Dillman III		James	F
2) FORWARDING Address (to which your tax statement will be mailed)		FORWARDING Phone and E-Mail (if known)	
4344 Horner Lane Belcamp, MD 21017		410-272-5481	
3) Today's Date		Dates of Tenure	
April 19, 2002		from November 29, 1999 to April 19, 2002	
4) Current Agency	Laboratory or NASA Center	Division / Branch / Directorate	
AMRMC	USAMRICD	Applied Pharmacology Branch	

5) NAME OF RESEARCH ADVISER

John J. Schlager, Ph.D.

6) TITLE OF RESEARCH PROPOSAL

Proteomic Analysis of Sulfur Mustard Toxicity

7) SUMMARY OF RESEARCH DURING TENURE Itemize significant findings in concise form, utilizing key concepts/words.

- 1) Exposure of cultured human epidermal keratinocytes (HEK) to sulfur mustard (SM) results in significant changes in protein expression.
- 2) Exposure of HEK to SM results in the activation of stress response pathways involved in inflammation.
- 3) Pharmacologic inhibition of these stress response pathways attenuates the SM-induced inflammatory response.
- 4) Exposure of HEK to SM results in the perturbation of proteins involved in cytoskeletal maintenance.
- 5)

8) RESEARCH IN PROGRESS Describe in no more than 100 words.

Proteomics technologies are being employed to identify and characterize the molecular and cellular response of human epidermal keratinocytes to the toxic effects of sulfur mustard exposure. It is expected that these studies will result in the identification and characterization of alterations in protein expression levels, post-translational modifications of proteins, and protein function in response to HD exposure. The analytical techniques that comprise the emerging field of proteomics are powerful tools well suited for these studies. This information will be vital in identifying the specific cellular pathways that are perturbed by HD exposure, and the specific cellular pathways that the cell utilizes to cope with exposure to HD. These results should provide significant insight into the mechanism of HD toxicity and can be applied in future research directed toward identifying potential targets for therapeutic intervention.

9) PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

Cytokine release induced by sulfur mustard exposure is mediated by the p38 MAP kinase signaling pathway. Dillman III, J.F., McGary, K.L. and Schlager, J.J., in preparation.

Exposure to sulfur mustard induces the formation of keratin protein aggregates. Dillman III, J.F., McGary, K.L., and Schlager, J.J., in preparation.

10 PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

Domestic

Dillman, J.F. III and J.J. Schlager. 2000. Identification of protein profile changes in sulfur mustard toxicity using proteomic approaches. 2000 Medical Defense Bioscience Review. p. 139. Bioscience Review 2000, June 4-9, Hunt Valley, MD.

Schlager, J.J., H.R. Benjamin, C.F. Levine, D.P. Avery, A.D. Dodds, C. Nalls, J.H. Clark, E.G. Midboe, and J.F. Dillman III. 2000. Sulfur mustard-induced macromolecular changes in the human keratinocyte: use of genomic expression and proteomic approaches to analyze temporal sulfur mustard toxicity. 2000 Medical Defense Bioscience Review. p. 113. Bioscience Review 2000, June 4-9, Hunt Valley, MD.

Dillman, J.F. III, and J.J. Schlager. Proteomic analysis of sulfur mustard toxicity. Platform presentation at the United States Army Medical Research and Materiel Command: Genomics Workshop. Walter Reed Army Institute of Research, Silver Spring, MD. February 22-23, 2001.

Dillman, J.F. III, and J. J. Schlager. 2001. Identification of protein profile changes in sulfur mustard exposed keratinocytes. Toxicological Sciences. 60(1):138. Platform presentation at Society of Toxicology Annual Meeting, March 25-29, 2001.

Dillman, J.F. III, K.L. McGary, and J.J. Schlager. 2001. Proteomic analysis of sulfur mustard-induced protein changes in human epidermal keratinocytes. Platform presentation at United States Army Medical Research and Materiel Command/United States Army Medical Research Institute of Chemical Defense Chemical Warfare Agent Toxicogenomics Conference, November 9, 2001.

Dillman, J.F. III, K.L. McGary, J.H. Clark, C.R. Braue, and J.J. Schlager. Upregulation of Cytokine Release by Sulfur Mustard Exposure is Mediated by the p38 MAP Kinase Signaling Pathway. Society of Toxicology Annual Meeting, March 17-21, 2002.

Dillman, J.F. III, K.L. McGary, and J.J. Schlager. Exposure of human epidermal keratinocytes to sulfur mustard induces the formation of high molecular weight protein aggregates containing keratin 14 and keratin 5. 2002 Medical Defense Bioscience Review, June 2-7, 2002, Hunt Valley, MD, submitted.

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* Include dates, names and locations of seminars.

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

Society of Toxicology In Vitro Speciality Section Award.

14) *NEW POSITION TITLE*

Research Chemist, Principal Investigator

15) *NEW POSITION ORGANIZATION* Provide name and address of organization.

U.S. Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD

16) *NEW POSITION STATUS / CATEGORY* Please indicate only one.

- ☒ Remain at Host Agency as Permanent Employee
☐ Remain at Host Agency as Contract/Temporary Employee
Abbreviate Host Laboratory/Center _____

- ☐ Research Position at Another US Government Laboratory
☐ Administrative Position at US Government Laboratory
☐ Research Position at Foreign Government Laboratory

- ☐ Research/Teaching at US College/University
☐ Research/Teaching at Foreign College/University
☐ Research/Admin Position in Industry
☐ Research/Admin in Non-Profit Organization
☐ Postdoctoral Research
☐ Self Employed
☐ Other Please specify _____

17) *APPRAISAL OF THE ASSOCIATESHIP PROGRAM* Please rate each of the following on a scale of 1 (poor) to 10 (excellent).

Your experience as a NRC Research Associate in this federal Laboratory

8 Short-term value: development of knowledge, skills, and research productivity

Comments:

- 2 Long-term value: how your NRC Associateship award affected your career to date
Comments:

Administrative Support

- 2 Quality of the support you received from the federal Laboratory
2 Quality of the support you received from the NRC staff
Comments:

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT*

US Postal Service mailing address

Research Associateship Programs [TJ 2114]
National Research Council
2101 Constitution Avenue NW
Washington, DC 20418

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website

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THE NATIONAL ACADEMIES

Advisers to the Nation on Science, Engineering, and Medicine

National Research Council Associateship Programs

FINAL REPORT

Enter information electronically in Layout view.

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) Associate Last or Family Name		First Name	M.I.
Dow		Geoffrey	S
2) FORWARDING Address (to which your tax statement will be mailed)		FORWARDING Phone and E-Mail (if known)	
1701 East West Highway APT 120, Silver Spring, MD, 20910		301-319-9009 geoffrey.dow@na.amedd.army.mil	
3) Today's Date		Dates of Tenure	
July 16, 2002		from August 6, 2000 to August 6, 2002	
4) Current Agency	Laboratory or NASA Center	Division / Branch / Directorate	
AMRMC	WRAIR	Exp Therapeutics/Parasitology	

5) NAME OF RESEARCH ADVISER

Dr Thomas H Hudson

6) TITLE OF RESEARCH PROPOSAL

Analysis of Surrogate Markers Associated With Induced Neurotoxicity From Antimalarial Endoperoxides.

7) SUMMARY OF RESEARCH DURING TENURE Itemize significant findings in concise form, utilizing key concepts/words.

- 1) Global expression changes measured by microarrays suggested mitochondrial electron transport, phosphoinositol metabolism and DNA repair may be neuronal targets of antimalarial endoperoxides.
- 2) Antimalarial endoperoxides were found to inhibit electron transport at the level of cytochrome oxidase at high concentrations, but RT-PCR could not confirm unequivocal regulation of mitochondrial genes by arteether in neuronal cells.
- 3) A power simulation utilizing published array data and novel p-value correction methods was used to determine theoretical false discovery rates and assess adequate sample sizes required for variance-based analysis of microarray data.
- 4) At appropriate sample sizes, using RT-PCR to validate microarray data, and conventional antimalarial drugs as control compounds, actual false discovery rates were found to be comparable to theoretical error rates.
- 5) Transcriptional changes induced by two antimalarial drugs, mefloquine and arteether, were investigated in neuronal cells using optimized microarray statistical analysis methods.

8) RESEARCH IN PROGRESS Describe in no more than 100 words.

Current focus of research is the follow up investigation of transcriptional changes induced in primary (not cell lines) neuronal cells by arteether and mefloquine. With respect to arteether, this has first involved defining a concentration/time endpoint in terms of changes in the transcription induction of specific biochemical markers, in particular, antioxidant enzymes. Once these endpoints have been determined, additional array studies will be conducted in primary neuronal cells. With respect to mefloquine, in vitro array studies with the NG108 neuronal cell line have demonstrated the upregulation of proapoptotic transcription factors. Additional array studies are being conducted in primary neuronal cells to determine whether similar transcriptional changes are observed in a more physiologically relevant system.

9) PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

NA

b) Books, book chapters, other publications

NA

c) Manuscripts in preparation, manuscripts submitted

1. Dow, G.S. 2002. Empirical Approaches To Determining Adequate Sample Sizes and P-Value Correction Methods for Variance-Based Analysis of Expression Data. Submitted to Journal of Computational Biology.
2. Li, Q.G.*, Si Y.Z., Lee P., Wong E., Xie L.H., Kyle D.E and Dow, G.S. 2002. Efficacy comparison of intravenous artesunate and artesunate in Plasmodium berghei-infected Sprague-Dawley rats. Submitted to Parasitology.

10) PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide titles, inventors, and dates of applications.

NA

11) PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

G.S. Dow, K.M. Kopydlowski, M. Vahey, M.E. Nau, R.K. Martin and T.H. Hudson. 2001. Microarray investigation of global gene expression changes induced in rat neuronal cell lines and primary cell cultures by artemisinin derivatives. IXth International Congress of Toxicology, Brisbane, Australia, July 8-12, 2002.

Domestic

1. Hudson, T.H., Dow, G.S., Kopydlowski, K.M., Vahey, M., Nau, M.E., Gwin, C.A. and Martin, R.K. 2000. Evaluation of Affymetrix rat toxicology U34 arrays for preliminary assessment of mammalian cell toxicity from compounds identified as promising antimalarials. Woods Hole Molecular Parasitology Meeting XI, Woods Hole MA, Sept 17-21, 2002.

2. Dow, G., Kopydlowski, K.M., Vahey, M. and Hudson, T.H. 2002. Mitochondrial enzymes as neuronal targets of artemisinin compounds. Drugs Against Tropical Protozoan Parasites: Target Selection, Structural Biology, and Rational Medicinal Chemistry. Keystone Symposium, Keystone CO, March 3-8, 2002.

3. Dow, G.S. 2002. Empirical approaches to determining adequate sample sizes and p-value correction methods for variance-based analysis of expression data. Woods Hole Molecular Parasitology Meeting XII, Woods Hole MA, Sept 22-26, 2002.

12) SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES Include dates, names and locations of seminars.

G.S. Dow. Microarray investigation of global gene expression changes induced in rat neuronal cell lines by arteether. Invited speaker at the Australian Army Malaria Institute, Brisbane, Australia, July 10, 2001.

13) PROFESSIONAL AWARDS RECEIVED DURING TENURE

None

14) NEW POSITION TITLE

Genomics Laboratory Investigator

15) NEW POSITION ORGANIZATION Provide name and address of organization.

Walter Reed Army Institute of Research

16) NEW POSITION STATUS / CATEGORY Please indicate only one.

☐ Remain at Host Agency as Permanent Employee

☒ Remain at Host Agency as Contract/Temporary Employee

Abbreviate Host Laboratory/Center _____

☐ Research Position at Another US Government Laboratory

☐ Administrative Position at US Government Laboratory

☐ Research Position at Foreign Government Laboratory

☐ Research/Teaching at US College/University

☐ Research/Teaching at Foreign College/University

☐ Research/Admin Position in Industry

☐ Research/Admin in Non-Profit Organization

☐ Postdoctoral Research

☐ Self Employed

☐ Other Please specify _____

17) APPRAISAL OF THE ASSOCIATESHIP PROGRAM Please rate each of the following on a scale of 1 (poor) to 10 (excellent).

Your experience as a NRC Research Associate in this federal Laboratory

8 Short-term value: development of knowledge, skills, and research productivity

Comments:

Provided the opportunity to acquire new skills and training not available in home country.

8 Long-term value: how your NRC Associateship award affected your career to date

Comments:

Facilitated career transition from small laboratory as a PhD student to a more permanent position in a world class, international research institute.

Administrative Support

8 Quality of the support you received from the federal Laboratory

5 Quality of the support you received from the NRC staff

Comments:

Generally NRC staff answered questions adequately, however the processing time for general paperwork was too long. In particular, processing time for travel applications and reimbursement was unnecessarily slow. Also one weakness of the NRC is that there is a singular lack of tax/financial advice offered to Associates.

18) PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT

Refer to above

US Postal Service mailing address

Research Associateship Programs (TJ 2114)
National Research Council
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Advisers to the Nation on Science, Engineering, and Medicine

National Research Council Associateship Programs

FINAL REPORT

Enter information electronically in Layout view.

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) Associate Last or Family Name		First Name	M.I.
Erwin		James	L
2) FORWARDING Address (to which your tax statement will be mailed)		FORWARDING Phone and E-Mail (if known)	
6262 North Steamboat Way		301-865-6302; James.Erwin@det.amedd.army.mil	
3) Today's Date		Dates of Tenure	
March 4, 2002		from August 10, 1998 to February 9, 2002	
4) Current Agency	Laboratory or NASA Center	Division / Branch / Directorate	
	AMRMC	USAMRIID	

5) NAME OF RESEARCH ADVISER

Tran C. Chanh

6) TITLE OF RESEARCH PROPOSAL

The Subversion of Macrophages by Anthrax Lethal Toxin

7) SUMMARY OF RESEARCH DURING TENURE Itemize significant findings in concise form, utilizing key concepts/words.

- 1) Investigated the role of anthrax lethal toxin upon the expression of pro-inflammatory cytokines by macrophages.
- 2) Demonstrated that lethal toxin inhibits rather induces cytokine expression.
- 3) Demonstrated that inhibition occurs at the level of transcription and signal transduction.
- 4) Characterized the effect of anthrax lethal toxin upon signal transduction in macrophages.
- 5) Characterized the response of toxin-resistant macrophages to infection by B. anthracis as compared to toxin-sensitive macrophages.

8) RESEARCH IN PROGRESS Describe in no more than 100 words.

The characterization of anthrax lethal toxin's effect upon signal transduction as well as the differences in response of toxin-resistant and toxin-sensitive cells is part of an ongoing project at USAMRIID. I have begun working at USAMRIID as a contractor and will be applying for a permanent position here. My expertise in cell biology and innate immunity is leading to other collaborations at USAMRIID as well. I am not at liberty to go into any details about those, however.

9) PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

J. L. Erwin, L. M. DaSilva, S. F. Little, A. M. Friedlander, S. Bavari and T. C. Chanh. "Macrophage-derived cell lines do not express pro-inflammatory cytokines after exposure to Bacillus anthracis lethal toxin." (2001) Infection and Immunity 69:1175-1177.

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

J. L. Erwin and T. C. Chanh. "Inhibition of MAP kinase isoforms in macrophage cell lines after exposure to anthrax lethal toxin"

10) PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide titles, inventors, and dates of applications.

11) PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

Domestic

1. J. L. Erwin, S. F. Little, A. M. Friedlander and T. C. Chanh. "The interactions of macrophages with anthrax lethal toxin revisited: effects on pro-inflammatory cytokine expression" 1999 Spring Research Festival.
2. J. L. Erwin, L. M. DaSilva, S. Bavari, S. F. Little, A. M. Friedlander, and T. C. Chanh. "Macrophage-derived cell lines do not express pro-inflammatory cytokines after exposure to anthrax lethal toxin" 2000 ASM General Meeting.
3. J. L. Erwin, L. M. DaSilva, S. Bavari, S. F. Little, A. M. Friedlander, and T. C. Chanh. "B. anthracis lethal toxin inhibits cytokine transcription in macrophages" 2000 Spring Research Festival.
4. J. L. Erwin and T. C. Chanh. "Inhibition of MAP kinase isoforms in macrophage cell lines after exposure to anthrax lethal toxin" 2001 ASM General Meeting.

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* Include dates, names and locations of seminars.

November 14, 2001 "The Subversion of Macrophages by B. anthracis Lethal Toxin" GWU, Washington, DC

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

Best poster, 2000 Spring Research Festival, Fort Detrick

14) *NEW POSITION TITLE*

Microbiologist/Immunologist

15) *NEW POSITION ORGANIZATION* Provide name and address of organization.

contractor at USAMRIID via CRM (Clinical Research Management)

16) *NEW POSITION STATUS / CATEGORY* Please indicate only one.

- ☐ Remain at Host Agency as Permanent Employee
☒ Remain at Host Agency as Contract/Temporary Employee
Abbreviate Host Laboratory/Center **USAMRIID**
☐ Research Position at Another US Government Laboratory
☐ Administrative Position at US Government Laboratory
☐ Research Position at Foreign Government Laboratory

- ☐ Research/Teaching at US College/University
☐ Research/Teaching at Foreign College/University
☐ Research/Admin Position in Industry
☐ Research/Admin in Non-Profit Organization
☐ Postdoctoral Research
☐ Self Employed
☐ Other Please specify _____

17) *APPRAISAL OF THE ASSOCIATESHIP PROGRAM* Please rate each of the following on a scale of 1 (poor) to 10 (excellent).

Your experience as a NRC Research Associate in this federal Laboratory

2 Short-term value: development of knowledge, skills, and research productivity

Comments:

The atmosphere at USAMRIID was far more collegial and supportive than any experience I've had in academia. With the emphasis on applied science, as well as the mission to provide vaccines, therapies and diagnostics for the protection of US forces I feel that my own research philosophy was allowed to blossom.

2 Long-term value: how your NRC Associateship award affected your career to date

Comments:

As I have high confidence of continuing at USAMRIID as a permanent employee it seems to have been an excellent stepping stone. More importantly, I have developed research skills and perspectives that are unique to this environment. I have been given the opportunity to focus my interests in ways unanticipated. For these reasons I cannot imagine having made a better career move than the one I have taken.

Administrative Support

8 Quality of the support you received from the federal Laboratory

8 Quality of the support you received from the NRC staff

Comments:

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT*

FINAL REPORT

Enter information electronically in Layout view.

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) Associate Last or Family Name Fleming		First Name Sherry	M.I. D
2) FORWARDING Address (for tax statement / final stipend check) 11503 Regnid Dr. Silver Spring, MD 20902		FORWARDING Phone(s) and E-Mail (if known) phone: (301) 319-7359 phone: (301) 942-9440 e-mail: sfleming@usuhs.mil	
3) Today's Date		Dates of Tenure from January 2, 2001 to January 1, 2003	
4) Agency AMRMC	Laboratory WRAIR/Tsokos	or NASA Ctr	Division / Branch / Directorate Cellular Injury/MCR

5) NAME OF RESEARCH ADVISER

George Tsokos

6) TITLE OF RESEARCH PROPOSAL

Role of natural antibodies and complement inhibitors in mesenteric ischemia-reperfusion injury

7) SUMMARY OF RESEARCH DURING TENURE Itemize significant findings in concise form, utilizing key concepts/words.

- 1) Complement inhibitors can prevent local and systemic injury due to mesenteric ischemia/reperfusion (IR)
- 2) The anaphylotoxin C5a is critical for both local and systemic tissue damage
- 3) The classical complement pathway is activated by natural antibodies in response to IR-induced damage.
- 4) IgM and IgG natural antibodies each contribute unique aspects of the tissue damage.
- 5) The natural antibody repertoire is altered in the absence of complement receptor 2 (CR2).

8) RESEARCH IN PROGRESS Describe in no more than 100 words.

I am continuing the CR2 studies to determine the antigen for the natural antibody recognition of ischemic tissue. In addition, the cell type that is secreting the natural antibodies and the recruitment of these cells to the local area are being investigating. The C5 project is being extended to determine the actual involvement of integrin $\alpha 4$ and VCAM in local and systemic injury.

9) PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

Fleming, S.D., Lambris, J.D., T.Shea-Donohue and G.C. Tsokos. 2002. C5 is critical for the mesenteric ischemia/reperfusion-induced local and remote organ injury. 2002. Clinical Immunol. In Press.

Fleming, S.D., T.Shea-Donohue, J.M. Guthridge, L. Kulik, T.J. Waldschmidt, M.G. Gipson, G.C. Tsokos and V.M. Holers. 2002. Mice deficient in complement receptors 1 and 2 lack a tissue injury-inducing subset of the natural antibody repertoire. J. Immunol. 169:2126-2133.

Fleming, S.D., B. Starnes, J.G. Kiang, A. Stojadinovic, G.C. Tsokos, and T.Shea-Donohue. 2002. Heat stress protection against mesenteric ischemia/reperfusion-induced alterations in intestinal mucosa in rats. J. Applied Physiol. 92:2600-2607.

Rehrig, S., S.D. Fleming, J. Anderson, J.M. Guthridge, J. Rakstang, C. McQueen, V.M. Holers, G.C. Tsokos, and T.Shea-Donohue. 2001. Complement inhibitor, Crry-Ig attenuates intestinal damage after the onset of mesenteric ischemia/reperfusion injury in mice. J. Immunol. 167: 5921-5927.

b) Books, book chapters, other publications

Fleming, S.D. and G.C. Tsokos. 2001. Complement Inhibitors in Rheumatic Diseases in Modern therapeutics in Rheumatic Diseases. Pg 443-452. Ed. G.C. Tsokos, Humana Press, Totowa, NJ.

c) Manuscripts in preparation, manuscripts submitted

Karpel-Massler, G., Fleming, S.D., Kirschfink, M., Tsokos, G.C. 2002. Human C1 esterase inhibitor attenuates murine mesenteric ischemia/reperfusion induced local organ injury. Submitted. 2002.

Fleming, S.D., Lambris, J.D., and G. Tsokos. C5a-mediated mesenteric ischemia/reperfusion injury is independent of polymorphonuclear neutrophils.

Fleming, S.D., Anderson, J., Rehrig, S., Wilson, F., Shea-Donohue, T., and G. Tsokos. Systemic effects of Crry-Ig after mesenteric ischemia/reperfusion.

Anderson, J. Fleming, S.D., Rehrig, S., Tsokos, G., Shea-Donohue, T and M. Basta. Intravenous immunoglobulin attenuates mesenteric ischemia-reperfusion injury

10 *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide titles, inventors, and dates of applications.

None

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

International Complement Society Meeting, Palermo, Italy, Sept. 2002. Fleming, SD, Lambris, JD, Shea-Donohue, T, and Tsokos, GC. C5a is responsible for the mesenteric ischemia/reperfusion-induced local and remote organ injury. Poster Preseentation

International Complement Associated Disease, Animal Models and Therapeutic Workshop. Santorini, Greece. 2001. Fleming, SD, Lambris, JD, Shea-Donohue, T. and Tsokos, GC. C5a is responsible for the mesenteric ischemia/reperfusion-induced local and remote organ injury Abstract #20. Oral Presentation.

Domestic

AAATAC meeting, Florida, Sept. 2002, Oral Presentation.

AAATAC meeting, Florida, Sept. 2001

The C5a fragment of C5 is critical of the mesenteric ischemia/reperfusion-induced local and remote organ injury,
Fleming, SD, Lambris, JD, Shea-Donohue, T and Tsokos, GC.

FOCIS Meeting, Boston, MA, 2001 Poster Presentation

C5 inhibitors prevent mesenteric ischemia/reperfusion induced injury. by Fleming, SD, Lambris, JD, Shea-Donohue, T.
and Tsokos, GC. Clinical Immunology 99:175 Abstract #221.

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* Include dates, names and locations of seminars.

Research seminar. Dept. Pathology and Laboratory Medicine, Univ. Penn, Philadelphia, PA. March 2002

Immunology section, 4 lectures, Structure and Function of Organ Systems, Uniformed Services University of the Health
Sciences, Bethesda, MD April 2002.

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

None

14) *POST-TENURE POSITION TITLE*

CRM Investigator

15) *POST-TENURE ORGANIZATION* Provide name and city of organization.

Clinical Research Management
Silver Spring, MD 20910

16) *POST-TENURE POSITION STATUS / CATEGORY* Please indicate only one.

- ☐ Remain at Host Agency as Permanent Employee
☒ Remain at Host Agency as Contract/Temporary Employee
Abbreviate Host Laboratory/Center WRAIR
☐ Research Position at Another US Government Laboratory
☐ Administrative Position at US Government Laboratory
☐ Research Position at Foreign Government Laboratory

- ☐ Research/Teaching at US College/University
☐ Research/Teaching at Foreign College/University
☐ Research/Administration in Industry
☐ Research/Admin in Non-Profit Organization
☐ Postdoctoral Research
☐ Self Employed
☐ Other: specify _____

17) *APPRAISAL OF THE ASSOCIATESHIP PROGRAM* Please rate each of the following

Your experience as a NRC Research Associate in this federal Laboratory 1 (poor) to 10 (excellent)

10 Short-term value: development of knowledge, skills, and research productivity

Comments:

- 10 Long-term value: how your NRC Associateship award affected your career to date
Comments:

Administrative Support 1 (poor) to 10 (excellent)

- 9 Quality of the support you received from the federal Laboratory
10 Quality of the support you received from the NRC staff (Leave blank, if not applicable - e.g., NIST)
Comments on both/either:

18) PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT

US Postal Service mailing address
Research Associateship Programs
National Research Council
500 Fifth Street, NW [GR 322A]
Washington, DC 20001

fax
202 - 334 - 2759
rap@nas.edu
website
www.national-academies.org/rap

Express Delivery address
Research Associateship Programs
National Research Council
2001 Wisconsin Avenue, NW [GR 322A]
Washington, DC 20007

n:\AO Forms
ID#

NRC ASSOCIATESHIP OFFICE
cc:

Rev. 08/2002
cost-center #

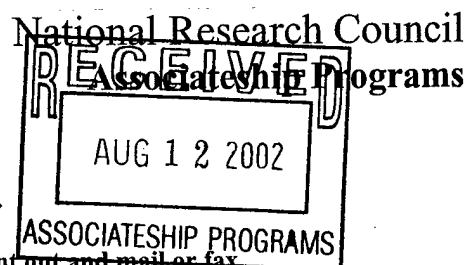
THE NATIONAL ACADEMIES

Advisers to the Nation on Science, Engineering, and Medicine

ASSOCIATESHIP PROGRAMS
RECEIVED AUG13'02

FINAL REPORT

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Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax

1) Associate Last or Family Name Grogan		First Name Case	M.I. C
2) FORWARDING Address (to which your tax statement will be mailed) 1717 Loma Vista St. Pasadena, CA 91104		FORWARDING Phone and E-Mail (if known) ckcgrogan@yahoo.com	
3) Today's Date August 5, 2002		Dates of Tenure from June 26, 2000 to August 9, 2002	
4) Current Agency AMRMC	Laboratory or NASA Center AMRIID	Division / Branch / Directorate Virology	

5) NAME OF RESEARCH ADVISER

Dr. Alan L. Schmaljohn

6) TITLE OF RESEARCH PROPOSAL

Characterization of Marburg and Ebola virus glycoprotein domains important in vaccine efficacy

7) SUMMARY OF RESEARCH DURING TENURE Itemize significant findings in concise form, utilizing key concepts/words.

- 1) Carried out a guinea pig vaccine protocol using the VEE-replicon protein expression system as a vaccine vector to test chimeric Ebola/Marburg glycoproteins (GP) as protective antigens against Ebola virus and Marburg virus.
- 2) Results obtained using Marburg/Ebola chimeric GP proteins indicated that glycoprotein protective epitope(s) resides within the GP2 subunit of the MBGV GP protein and at least partially within the GP2 subunit of the EBOV GP protein.
- 3) Cloned VEE replicons containing alternative chimeric Ebola and Marburg GP genes, with smaller portions of the GP2 region swapped between Ebola and Marburg GP genes, in order to narrow down the location of protective epitopes in the GP2 subunit.
- 4) Cloned VEE-replicons expressing the GP2 portion of either Ebola or Marburg GP protein in order to further investigate protective epitopes within the GP2 portion of GP for each virus. Live-virus challenge experiments are currently underway.
- 5) Carried out collaborations with two different research groups regarding: effect of live Marburg and Ebola virus infection on the activation of cultured dendritic cells; binding specificity of live Ebola and Marburg virus on multiple cell types.

8) RESEARCH IN PROGRESS Describe in no more than 100 words.

Examination of the protective efficacy of the GP2-only portion of the GP protein (versus full-length GP) is currently being assayed by immunization of guinea pigs with VEE replicons which express either the Marburg or Ebola GP2 subunit only. Animals are currently receiving 3 doses of 10^6 focus forming units of replicon vaccine 28 days apart. The Marburg GP2-immunized animals will be challenged with Marburg virus and the Ebola GP2-immunized animals will be challenged with Ebola virus. This part of the study is being carried out in collaboration Dr. Mike Hevey, for inclusion in the manuscript in preparation, before submission.

9) PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

Simmons, G., Reeves, J.D., Grogan, C.C., Vandenberghe, L.H., Baribaud, F., Whitbeck, J.C., Burke, E., Buchmeier, M.J., Soilleux, E.J., Riley, J.L., Doms, R.W., Bates, P., and S. Pohlmann. 2002. DC-SIGN and DC-SIGNR bind Ebola glycoproteins and enhance infection of macrophages and endothelial cells. Virology. Accepted (August 2002) for publication.

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

Bosio, C.M., Aman, M.J., Grogan, C., Hogan, R., Ruthel, G., Negley, D., Mohamadzadeh, M., Bavari, S., and A. Schmaljohn. 2002. Ebola and Marburg virus infections of dendritic cells undermine innate immune responses. Submitted.

Grogan, C.C., Negley, D., Geisbert, J., Schmaljohn, A.L., and M. C. Hevey. 2002. Chimeric Ebola/Marburg glycoproteins expressed from an Alphavirus replicon as a vaccine approach indicate protective epitopes in the GP2 subunit. In preparation

10 *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide titles, inventors, and dates of applications.

Prepared final patent application, filed by Pratt and Associates, Inc., Potomac, MD, on behalf of USAMRIID 31 January 2002: Chimeric Ebola/Marburg Glycoprotein as a Vaccine For Filoviruses, Case C. Grogan, Michael C. Hevey, and Alan L. Schmaljohn. (PCT/US02/03339 filed 1/31/02 Entitled "Chimeric Filovirus Glycoprotein")

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

Domestic

Chimeric Ebola/Marburg glycoproteins expressed from an Alphavirus replicon as a vaccine approach. Case C. Grogan, Mike C. Hevey, Steve Harrison, Diane Negley, Joan Geisbert, and Alan L. Schmaljohn

1. Oral presentation made at the 20th Annual Meeting for the American Society for Virology, Madison, WI, July 21-25, 2001.
2. Poster presentation at the NCI-Ft. Detrick Spring Research Festival, Frederick, MD, May 16-17, 2001.

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* Include dates, names and locations of seminars.

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

1. American Society for Virology Joel M. Dalrymple Memorial Award for Outstanding Presentation of Research, 20th Annual American Society for Virology meeting, Madison, WI, July 2001
2. National Cancer Institute -Frederick/Ft. Detrick Spring Research Festival poster presentation award winner, May, 2001

14) *NEW POSITION TITLE*

no position determined yet

15) *NEW POSITION ORGANIZATION* Provide name and address of organization.

currently job hunting in new home location (relocating for spouse)

16) *NEW POSITION STATUS / CATEGORY* Please indicate only one.

- ☐ Remain at Host Agency as Permanent Employee
☐ Remain at Host Agency as Contract/Temporary Employee
Abbreviate Host Laboratory/Center _____
☐ Research Position at Another US Government Laboratory
☐ Administrative Position at US Government Laboratory
☐ Research Position at Foreign Government Laboratory

- ☐ Research/Teaching at US College/University
☐ Research/Teaching at Foreign College/University
☐ Research/Admin Position in Industry
☐ Research/Admin in Non-Profit Organization
☐ Postdoctoral Research
☐ Self Employed
☒ Other Please specify nd

17) *APPRAISAL OF THE ASSOCIATESHIP PROGRAM* Please rate each of the following on a scale of 1 (poor) to 10 (excellent).

Your experience as a NRC Research Associate in this federal Laboratory

10 Short-term value: development of knowledge, skills, and research productivity

Comments:

My NRC tenure has provided me excellent opportunities to learn and develop new research skills/techniques that I will use in my future work.

Comments:

Even though I do not have my next research job lined up yet, I am confident the NRC associateship award, and the work I have accomplished (presentations, papers, patent) will be a very positive aspect of my CV/resume.

Administrative Support

10 Quality of the support you received from the federal Laboratory

10 Quality of the support you received from the NRC staff

Comments:

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT*

No complaints - program well run!

US Postal Service mailing address

Research Associateship Programs [TJ 2114]

National Research Council

2101 Constitution Avenue NW

Washington, DC 20418

n:\AO Forms

ID#

fax

202 — 334 — 2759

website

www.national-academies.org/rap

NRC ASSOCIATESHIP OFFICE

cc:

Express Delivery address

Research Associateship Programs [Suite 200]

National Research Council

1000 Thomas Jefferson Street, NW

Washington, DC 20007

Rev. 10/2001

cost-center #

FINAL REPORT

Enter information electronically in Layout view.

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) Associate Last or Family Name		First Name	M.I.
Guerrero-Ontiveros		Maria de Lourdes	
2) FORWARDING Address (to which your tax statement will be mailed)		FORWARDING Phone(s) and E-Mail (if known)	
Ruperto L. Paliza No. 640 Sur. Culiacan, Sin. 80200 Mexico		Phone: 52/6677/16 35 80 Phone: 52/6677/16 62 19 E-mail: lourdesgo@hotmail.com	
3) Today's Date		Dates of Tenure	
September 11, 2002		from February 15, 1999 to August 14, 2002	
4) Agency	Laboratory or NASA Center	Division / Branch / Directorate	
AMRMC	WRAIR	CD&I	

5) NAME OF RESEARCH ADVISER

Dr. Luther L. Lindler

6) TITLE OF RESEARCH PROPOSAL

Regulation of the Expression of Pathogenic Yersinia pestis During intracellular Association with Macrophages

7) SUMMARY OF RESEARCH DURING TENURE Itemize significant findings in concise form, utilizing key concepts/words.

- 1) Used Transposon TnphoA mutagenesis to identify potential Yersinia pestis genes which contribute to plague pathogenesis
- 2) Screened the TnphoA fusions in Y. pestis KIM5 for temperature regulated membrane-bound or secreted proteins
- 3) Identified nine thermoregulated chromosomal and plasmid genes encoding transmembrane and periplasmic proteins, five of them of unknown function
- 4) Investigated the effect these phoA mutants may have on virulence in a macrophage infection assay
- 5) Initiated the characterization of the function of one up-regulated, temperature-sensitive gene product designated ORF60

8) RESEARCH IN PROGRESS Describe in no more than 100 words.

To understand the role of genes involved in plague pathogenesis, I investigated Y. pestis by random transposon TnphoA mutagenesis. This approach has led to the discovery of important virulence factors in Gram-negative bacteria, including Salmonella, enteroinvasive E. coli, and Vibrio cholerae. We have identified nine thermoregulated genes, five of them of unknown function. Alkaline phosphatase activity values and Western blot analysis confirmed differential regulation of the PhoA protein fusions at 26C versus 37C. We have identified two pCD1 plasmid TnphoA insertions that appeared to be lethal at 37C; one in YopD, a virulence factor up-regulated at 37C, the second in a hypothetical protein designated Orf60, which is located downstream to YopM. The results suggest that Orf60 (the counterpart of Y. pestis CO92 YPCD1.23) is a transmembrane protein, which is expressed and upregulated at 37C. Characterization of the function of Orf60 is currently in progress.

9) PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

Identification of thermoregulated genes in Yersinia pestis using TnphoA mutagenesis

Isolation and characterization of Orf60, a thermoregulated, pCD-encoded Yersinia pestis protein

10 PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

Guerrero-Ontiveros, M. L., Cohen S., and L. E. Lindler. Identification of thermoregulated genes in *Yersinia pestis* using *TnphoA* mutagenesis. Abstract. 8th *Yersinia* Meeting. Turku, Finland

Domestic

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* Include dates, names and locations of seminars.

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

14) *NEW POSITION TITLE*

15) *NEW POSITION ORGANIZATION* Provide name and address of organization.

16) *NEW POSITION STATUS / CATEGORY* Please indicate only one.

- ☐ Remain at Host Agency as Permanent Employee
- ☐ Remain at Host Agency as Contract/Temporary Employee
Abbreviate Host Laboratory/Center
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory

- ☐ Research/Teaching at US College/University
- ☒ Research/Teaching at Foreign College/University
- ☐ Research/Administration in Industry
- ☐ Research/Administration in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other: specify

17) *APPRAISAL OF THE ASSOCIATESHIP PROGRAM* Please rate each of the following on a scale of 1 (poor) to 10 (excellent).

Your experience as a NRC Research Associate in this federal Laboratory

- 8** Short-term value: development of knowledge, skills, and research productivity
Comments:

- 9** Long-term value: how your NRC Associateship award affected your career to date
Comments:

Since I have started working at WRAIR I have switch my research focus from bioenergetics to genetics. This change was a need, among other things to be more competitive in the job market. The associateship represented a challenge and a great opportunity to fulfill this goal that definitely has enriched my knowledge, skills and research experience.

Administrative Support

- 8** Quality of the support you received from the federal Laboratory

- 10** Quality of the support you received from the NRC staff (Leave blank, if not applicable – e.g., NIST)
Comments:

Prompt, friendly and efficient support whenever required

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

More frequent visits to get acquainted with the

US Postal Service mailing address
Research Associateship Programs
National Research Council
500 Fifth Street, NW [GR 322A]
Washington, DC 20001

fax
202 – 334 – 2759
rap@nas.edu
website
www.national-academies.org/rap

Express Delivery address
Research Associateship Programs
National Research Council
2001 Wisconsin Avenue, NW [GR 322A]
Washington, DC 20007



FINAL REPORT FORM

Regular mail
Associateship Prgrms. [TJ 2114]
NAT'L RESEARCH COUNCIL
2101 Constitution Ave, NW
Washington, DC 20418
FAX: 202-334-2759

Express mail delivery
Associateship Prgrms. [Suite 2114]
NAT'L RESEARCH COUNCIL
1000 Thomas Jefferson St., NW
Washington, DC 20007



If you have downloaded this from a NRC e-mail attachment, you may print out, enter the information manually, and return via mail or fax. Or, you may enter the information electronically and return as an attachment.

1) NAME

Janos Milosevits M.D. Ph.D.

2) DATE

July 2, 2002

3) NAME OF LABORATORY/CENTER AND LOCATION

Walter Reed Army Institute of Research

4) DATES OF TENURE

from July 3, 2000 to July 2, 2002

5) NAME OF RESEARCH ADVISER

Carl R. Alving M.D.

6) IF YOU ARE ON LEAVE FROM A PROFESSIONAL POST, WILL YOU RETURN TO YOUR PREVIOUS EMPLOYER?

☒ Yes ☐ No

7) PROFESSIONAL AWARDS RECEIVED, SOCIETY OFFICES HELD DURING TENURE

NA

8) PROFESSIONAL TRAVEL DURING TENURE List location(s) and date(s) of travel to scientific meetings. List foreign meetings separately.

Sarasota FL USA : Oct 27-30, 2000

9) SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES List location(s) and date(s).

NA

10) TITLE OF RESEARCH PROPOSAL

Role of Natural Anti-Lipid Antibodies in C-Mediated Phys. and Path. Processes

11) SUMMARY OF RESEARCH DURING TENURE Itemize significant findings in concise form. Utilize concepts and key words.

- 1) Analysis of squalene reacting monoclonal mouse antibodies
- 2) Detecting of squalene reacting natural antibodies in healthy and polyvaccinated humans by FACS
- 3) Analysis of crossreactivity of squalene reacting antibodies
- 4) Heat dependence binding of natural antibodies to squalene containing liposomes
- 5) Analysis of rat and pig granulocyte oxidative burst, effected by liposomes

12) RESEARCH IN PROGRESS Briefly describe in 100 words or less.

I analyzed the binding of natural and induced antibody to squalene and other lipids containing liposomes. I tried to get a better insight into the binding mechanism.

13) PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide complete citation(s) including author(s), full name of journal, volume number, page number(s), year of publication.

(a) Publications in peer-reviewed journals:

Role of Complement Activation in Hypersensitivity Reactions to Doxil and Hynic-PEG Liposomes: experimental and clinical studies J. Szebeni, L. Baranyi, S. Savay, J. Milosevits, R. Bunger, P. Laverman, J.M. Metselaar, G. Storm, A. Chanan-Khan, L. Liebes, F.M. Muggia, R. Cohen, Y. Barenholz, and C.R. Alving Journal of Liposome Research 12(1), 165-172 (2002)

(b) Books or book chapters:

NA

(c) Manuscripts in preparation, manuscripts submitted:

The Interaction of Liposomes with the Complement System: In Vitro and In Vivo Assays
J Szebeni, L Barany, S Savay, J Milosevits, M Bodo, R Bunger, and C. R. Alving Meth. Enzymol. (submitted)

14) PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES

Provide complete reference with author(s), title, abstract/proceeding citation, meeting name, location. List foreign meetings separately.

Szebeni J, Baranyi L, Milosevits J, Bodo M, Savay S. and Alving C.R, Rolf Bunger (2002)
Anaphylatoxin-Induced Cardiac and Hemodynamic Changes in Pigs. American Heart Association Scientific Meeting New Orleans, LA USA (Abstract)
Babal I, Matyas G, Baranyi L, Milosevits J, Alving C.R. Adjuvant effects and toxic effects of combination of squalene, Lipid A, and liposomes in mice (2002) Basic aspects of vaccines 8th National Symposium Bethesda, MD USA (Abstract)

15) PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

NA

16) NEW POSITION TITLE, ORGANIZATION and ADDRESS

Director of the Saint Nicolaus Medical Service
Tokoli ut 166. Szigetszentmiklos 2310 HUNGARY

17) NEW POSITION PLANS You may indicate more than one.

☒ Research - National Government (U.S. or Foreign)

☐ Administration - U.S. Govt. (Fed., State, or Local)

☐ Remain at Host Lab/Center (Please provide name of Lab/Center.)

☒ College/University Professor

☐ Postdoctoral

☐ Uncertain

☒ Self-Employed

☐ Industry

☒ Other

18) FORWARDING ADDRESS (to which your tax statement will be mailed)

Dr. Janos Milosevits
Tokoli ut 166. Szigetszentmiklos 2310 HUNGARY

19) APPRAISAL OF THE ASSOCIATESHIP PROGRAM

Please evaluate each of the following on a scale of 1 (poor) to 10 (excellent):

5 ☒ a) Of what value was this experience to your career?

5 ☒ b) What is your evaluation of your experience in the laboratory?

5 ☒ c) What is your evaluation of your interaction with the NRC?

Please provide any additional comments on the usefulness of the Associateship Program to you, including suggestions for improvements.

THE NATIONAL ACADEMIES

Advisers to the Nation on Science, Engineering, and Medicine

National Research Council Associateship Programs

FINAL REPORT

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Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) Associate Last or Family Name		First Name	M.I.
Nair		Lalitha	PV
2) FORWARDING Address (to which your tax statement will be mailed)		FORWARDING Phone(s) and E-Mail (if known)	
F 62, CSIR Scientist Apartment, Maharani Bagh, New Delhi 110065, India		Phone: 91-11-6917555 Phone: 91-11-6325129 E-mail: Lalithapv@hotmail.com	
3) Today's Date		Dates of Tenure	
September 24, 2002		from October 11, 2000 to October 10, 2002	
4) Agency	Laboratory or NASA Center	Division / Branch / Directorate	
AMRMC	WRAIR	CD & I, Immunology	

5) NAME OF RESEARCH ADVISER

David E Lanar

6) TITLE OF RESEARCH PROPOSAL

Cloning, Expression and Immunological Characterization of AMA-1 and its Subdomain Fragments in Bacteria

7) SUMMARY OF RESEARCH DURING TENURE Itemize significant findings in concise form, utilizing key concepts/words.

- 1) Worked in the development of the purification of an important malaria vaccine target antigen PfAMA1/E that (99% pure) was scaleable and transferable to GMP facility, and that induced high titre growth inhibitory antibodies in rabbits.
- 2) Purification protocol was used in the writing of Batch Production Record BPR-480, entitled "Preparation of a Bulk Lot Recombinant P. falciparum AMA1/E Protein Expressed in Escherichia coli, Origami Strain.
- 3) The data from this analysis will be part of an IND application to the FDA to use this protein as a vaccine in humans.
- 4) Cloned, expressed, purified and immunologically characterized all six subdomain constructs from ectodomain of AMA-1 in bacteria. It enabled to fine map the immunodominant regions of the whole molecule.
- 5) Erythrocyte binding activity of AMA-1 and the subdomain fragments is established from this study. These data may help to develop better AMA-1 based constructs for vaccine study.

8) RESEARCH IN PROGRESS Describe in no more than 100 words.

Cloned and expressed all the six subdomain fragments of AMA-1 ectodomain in bacteria, purified in order to fine map the immune responses. The purified double domains have generated high titre antibodies in rabbits that recognized the native parasite in IFA and recognized the parasite AMA-1 in Western blot experiments. Domain I+II generated most of the growth inhibitory antibodies on a growth inhibition/invasion assay in vitro, suggesting that this region is most important in AMA-1 ectodomain. Also, most of the immune responses towards the ectodomain are localized in the domain II, though this region alone is not enough to generate inhibitory antibodies. AMA-1 and all six subdomains, I+II, II+III, I+III, I, II and III have shown to have erythrocyte binding activity to human RBC. Immunization with single domains is being done. Projects on D I+II crystal structure elucidation and mapping of monoclonal antibodies are also in progress, in collaboration.

9) PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

1. Purification and characterisation of the refolded ectodomain of the Apical Membrane Antigen-1 of Plasmodium falciparum expressed in Escherichia coli. S Dutta, P V Lalitha, L A Ware, A Barbosa, JK Moth, MA Vassel, S Kitov, N Kolodny, J D Haynes and D E Lanar, Infection and Immunity, 2002, 70(6), 3001-10.

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

1. Lalitha PV, Ware LA, Barbosa A, Dutta S, Moch K, Haynes JD, Lanar DE. Protective antibody responses to AMA-1 is directed towards D I+II: Results from Analysis of Cloning, expression, purification and immunological characterisation of refolded Plasmodium falciparum AMA-1 Subdomain fragments in E. coli.

10) *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide titles, inventors, and dates of applications.

1. Process for purification of recombinant Plasmodium falciparum AMA-1 from E. coli . D E Lanar, S Dutta, L A Ware and Lalitha P V. Filed a Provisional U.S. Patent Application, filing date: March 26, 2001.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

1. Barbosa A, Wood CL, Lalitha PV, Tighe JJ, Ware LA, Dutta S, Haynes JD, Moch JK, Bowden RA, Lanar DE, Heppner DG, Kellerman SA, Green LL, Production of Human Monoclonal Antibodies to the Plasmodium falciparum AMA-1 Protein, Paper to be presented at 51st ASTMH Meeting to be held at Denver, CO, USA during 10-14 Nov 2002.
2. Haynes JD, Lanar DE, Dutta S, Lalitha PV, Barbosa A, Darko CA, Angov E, Lyon JA, Narum DL, Sim BKL, Moch JK, Malaria Growth Inhibition Assays (GIA) in Vaccine Candidate Evaluation: Roles of Suspension GIA and Reversal of Inhibition by Antigen, Paper to be presented at 51st ASTMH Meeting to be held at Denver, CO, USA during 10-14 Nov 2002.
3. Cloning, Expression, Purification and Immunogenicity of Refolded Regions of Plasmodium falciparum AMA-1 Ectodomain in E. coli, Lalitha PV, Ware LA, Barbosa A, Dutta S, Moch JK, Vassell M, Haynes JD, and Lanar DE, Paper to be presented at 16th Annual Symposium of the Protein Society to be held in August 17-21, 2002 San Diego, California.
4. Lalitha PV, Ware LA, Barbosa A, Dutta S, Moch K, Vassel M Haynes JD, Lanar DE. Immunological characterisation of bacterially expressed Plasmodium falciparum AMA-1 Subdomain fragments. Proceedings of Keystone Symposia, Keystone, Colorado, USA, 3-8 March, 2002.
5. Dutta S, Barbosa A, Ware LA, Fileta BB, Lalitha PV, Moch JK, Vassell MA, Haynes JD, Lanar DE. Biophysical, biochemical and immunological comparison of a refolded malaria vaccine candidate Pf AMA-1/E, produced under GMP environment in two bacterial hosts. Proceedings of "Experimental Biology- Translating the Genome" during April 20-24, 2002, New Orleans, Louisiana, USA.
6. Lalitha PV, Ware LA, Moch K, Haynes JD, Dutta S, Barbosa A, Lanar DE. Expression, purification and immunological analysis of plasmodium falciparum ama-1 subdomains in bacteria, Proceedings of 50th ASTMH Annual Meeting, Atlanta, Georgia, USA during 11-15, Nov 2001
7. Dutta S, Lalitha PV, Ware LA, Barbosa A, Moch K, Haynes JD, Vassell MR, Lanar DE. Purification and characterization of a refolded plasmodium falciparum apical membrane antigen-1 ectodomain produced under cGMP conditions for clinical use, Proceedings of 50th ASTMH Annual Meeting, Atlanta, Georgia, USA during 11-15, Nov 2001.

Domestic

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* Include dates, names and locations of seminars.

1. Cloning, Expression and Immunological Characterization of Apical Membrane Antigen (AMA-1) Subdomain Fragments from P. falciparum, Immunology Department, CD&I, Walter Reed Army Institute of Research, on 11 September 2002.
2. Cloning, Expression and Immunological Studies of Apical Membrane Antigen (AMA-1) and its Subdomain Fragments from P. falciparum, Seminar during NRC Meeting at WRAIR during April 2002

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

Young Scientist Project, Department of Science and Technology, New Delhi, India for a Project entitled Structural and functional characterisation of some important malarial blood stage vaccine target antigens from Plasmodium falciparum Indian isolates.

14) *NEW POSITION TITLE*

Research Scientist

15) *NEW POSITION ORGANIZATION* Provide name and address of organization.

Tentatively-Department of Science and Technology, New Delhi (Sponsors); Exact laboratory is to be decided in two months.

16) *NEW POSITION STATUS / CATEGORY* Please indicate only one.

- | | |
|--|--|
| ☐ Remain at Host Agency as Permanent Employee | ☐ Administrative Position at US Government Laboratory |
| ☐ Remain at Host Agency as Contract/Temporary Employee | ☐ Research Position at Foreign Government Laboratory |
| Abbreviate Host Laboratory/Center | |
| ☐ Research Position at Another US Government Laboratory | |

- ☐ Research/Teaching at US College/University
☐ Research/Teaching at Foreign College/University
☐ Research/Administration in Industry
☐ Research/Administration in Non-Profit Organization

- ☐ Postdoctoral Research
☒ Self Employed
☐ Other: specify

17) APPRAISAL OF THE ASSOCIATESHIP PROGRAM Please rate each of the following on a scale of 1 (poor) to 10 (excellent).

Your experience as a NRC Research Associate in this federal Laboratory

7 Short-term value: development of knowledge, skills, and research productivity

Comments:

I had the freedom to choose my project, plan and execute the way I wanted; hard work and earlier experience in this field helped me a lot to be very productive.

8 Long-term value: how your NRC Associateship award affected your career to date

Comments:

It was really a good exposure, it helped me to get more confidence in my abilities to do research. I could collaborate with some other projects/ laboratories such as Crystal structure elucidation of D I+II of AMA-1(BSI Proteomics Corporation, Gaithersburg, MD), Mapping of human monoclonal antibodies (Arnoldo Borbosa, WRAIR ; Medarex Corporation etc.) These experiences certainly helped me to improve my skills and will help to work more effectively on my return to India.

Administrative Support

8 Quality of the support you received from the federal Laboratory

9 Quality of the support you received from the NRC staff

Comments:

I am extremely thankful for the liberal support I received from NRC staff both from my Institute (Dr Sara Rothman's office) and also from Washington DC office. I never had any difficulty in finding solutions to my tiny problems.

18) PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT

US Postal Service mailing address

Research Associateship Programs
National Research Council
500 Fifth Street, NW [GR 322A]
Washington, DC 20001

fax

202 - 334 - 2759

rap@nas.edu

website

www.national-academies.org/rap

Express Delivery address

Research Associateship Programs
National Research Council
2001 Wisconsin Avenue, NW [GR 322A]
Washington, DC 20007

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National Research Council
Associateship Programs

FINAL REPORT

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1) Associate Last or Family Name		First Name	M.I.
Peng		Daizhi	
2) FORWARDING Address (to which your tax statement will be mailed)		FORWARDING Phone and E-Mail (if known)	
61 Zaozilanya Street, Chongqing 400015, China		(086)(023)63853963 dzpeng@yahoo.com	
3) Today's Date		Dates of Tenure	
May 15, 2002		from January 5, 1999 to May 4, 2002	
4) Current Agency	Laboratory or NASA Center	Division / Branch / Directorate	
AMRMC	AISR	Lab Division/Microbiology Branch	

5) NAME OF RESEARCH ADVISER

Albert T. McManus

6) TITLE OF RESEARCH PROPOSAL

Examination of DTC and PNA on Mortality in a Model of Antimicrobial Chemotherapy Resistant Sepsis

7) SUMMARY OF RESEARCH DURING TENURE

Itemize significant findings in concise form, utilizing key concepts/words.

- 1) Culture directed antibiotics have obvious therapeutical effects on burn wound sepsis rats within 3 days postburn .
- 2) The selection and dose of cultured antibiotics have influence on the effecacy of delayed antimicrobial therapy in burn wound sepsis.
- 3) Delayed piperacillin treatment mimic the clinical scenario where indicated antibiotic therapy is given and some patients still die of infection and organ dysfunction.
- 4) PDTC(NF-kB inhibitor) has no effect on the survival of sepsis rats in delayed piperacillin treatment, this might be related to the decreased serum level of IL-1 beta.
- 5) HMG-1 may be used as helpful markers of infection, tissue injury and inflammation.

8) RESEARCH IN PROGRESS

Describe in no more than 100 words.

The antibiotic treated sepsis model has been established as a more clinically relevant sepsis model. The mortalityies of this model are 65% and 35%, which can be acvhieved by different doses of piperacillin(200 mg/kg or 800mg/kg, q12h 10 days, respectively). When pyrrolidine dithiocarbamate(PDTC) was used in this sepsis model, it has no effect on the mortality. These indicate that sepsis death was caused by uncontrolled infection rathr than inflammation in this model. Serum HMG-1 level may be used as helpful markers of tissue injury, infection, and inflammation.

9) PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

No.

b) Books, book chapters, other publications

No.

c) Manuscripts in preparation, manuscripts submitted

In writing.

1. Efficacy of Delayed Antimicrobial Therapy in a model of infection related sepsis.
2. Pyrrolidine ithiocarbamate(PDTC) has no effect on survival in burn wound sepsis.
3. Effect of burn and infection on the serum level of HMG-1 in a rat model

10 PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide titles, inventors, and dates of applications.

No

11) **PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES**

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

No

Domestic

1. Peng DZ, McManus AT. Efficacy of Delayed Antimicrobial Therapy in a model of infection related sepsis. J Burn Care Rehabilitation 2002; 23(2 supplement): S118 34th Annual Meeting of American Burn Association at the Hyatt Regency in Chicago, Illinois.
2. Peng DZ, McDermott DJ, McManus AT. Pyrrolidine ithiocarbamate(PDTC) has no effect on survival in burn wound sepsis. Shock 2002; 17(supplement): (in press) 25th Annual Conference on Shock at Big Sky Resort, Big Sky, Montana.

12) **SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES** Include dates, names and locations of seminars.

No.

13) **PROFESSIONAL AWARDS RECEIVED DURING TENURE**

No.

14) **NEW POSITION TITLE**

N/A

15) **NEW POSITION ORGANIZATION** Provide name and address of organization.

Institute of Burn Research, Southwestern Hospital, Gaotanyan Street, Chongqing 400038, China

16) **NEW POSITION STATUS / CATEGORY** Please indicate only one.

- | | |
|--|---|
| ☐ Remain at Host Agency as Permanent Employee | ☐ Research/Teaching at US College/University |
| ☐ Remain at Host Agency as Contract/Temporary Employee | ☒ Research/Teaching at Foreign College/University |
| Abbreviate Host Laboratory/Center _____ | ☐ Research/Admin Position in Industry |
| ☐ Research Position at Another US Government Laboratory | ☐ Research/Admin in Non-Profit Organization |
| ☐ Administrative Position at US Government Laboratory | ☐ Postdoctoral Research |
| ☐ Research Position at Foreign Government Laboratory | ☐ Self Employed |
| | ☐ Other Please specify _____ |

17) **APPRAISAL OF THE ASSOCIATESHIP PROGRAM** Please rate each of the following on a scale of 1 (poor) to 10 (excellent).

Your experience as a NRC Research Associate in this federal Laboratory

10 Short-term value: development of knowledge, skills, and research productivity

Comments:

10 Long-term value: how your NRC Associateship award affected your career to date

Comments:

Administrative Support

10 Quality of the support you received from the federal Laboratory

10 Quality of the support you received from the NRC staff

Comments:

18) **PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT**

No

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National Research Council Associateship Programs

FINAL REPORT

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Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) Associate Last or Family Name Riemenschneider		First Name Jenny	M.I. L
2) FORWARDING Address (for tax statement / final stipend check) 14629 Keeneland Circle Gaithersburg, MD 20878		FORWARDING Phone(s) and E-Mail (if known) phone: (301) 947-2923 phone: e-mail: jenmell@yahoo.com	
3) Today's Date July 9, 2002		Dates of Tenure from March 1, 2000 to July 19, 2002	
4) Agency AMRMC	Laboratory USAMRIID	or NASA Center NASA Ctr	Division / Branch / Directorate Virology/Molecular Virology
5) NAME OF RESEARCH ADVISER Connie Schmaljohn			

6) TITLE OF RESEARCH PROPOSAL

EVALUATION OF DNA VACCINE STRATEGIES FOR EBOLA VIRUS IMMUNIZATION

7) SUMMARY OF RESEARCH DURING TENURE

Itemize significant findings in concise form, utilizing key concepts/words.

- 1) Baculovirus derived Ebola virus glycoproteins are partially protective in guinea pigs
- 2) DNA vaccinated followed by protein boosts with Ebola virus glycoprotein is partially protective in guinea pigs
- 3) DNA encoding the protective antigen of Anthrax is protective against spore challenge in a rabbit model
- 4) DNA encoding the structural proteins of Venezuelan equine encephalitis virus is protective against infection in guinea pig
- 5) DNA antigens from multiple infectious agents can be combined in a vaccine without decreased efficacy

8) RESEARCH IN PROGRESS

Describe in no more than 100 words.

There are currently no vaccines for a variety of infectious agents such as Ebola and Marburg viruses. Although there are vaccines available for agents such as Venezuelan equine encephalitis (VEE) virus and Anthrax, improvements to these vaccines are needed. As an NRC associate I investigated the potential efficacy DNA vaccines for all of the forementioned biowarfare agents. My research to date has shown that DNA vaccines against Ebola and Marburg viruses are approximately 50% protective in a guinea pig model. Even higher levels of protection were demonstrated for VEE virus and Anthrax in guinea pigs and rabbits, respectively.

9) PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

None

b) Books, book chapters, other publications

None

c) Manuscripts in preparation, manuscripts submitted

EVALUATION OF BACULOVIRUS-DERIVED EBOLA VIRUS GP IN A DNA PRIME-PROTEIN BOOST VACCINE REGIMEN

Jenny L. Riemenschneider, Aura R. Garrison, Joan B. Geisbert, Kamal Saikh, Kelli D. Heldebrink, Peter B. Jahrling, Robert Ulrich, and Connie S. Schmaljohn (in preparation).

DNA VACCINATION PROTECTS AGAINST MULTIPLE POTENTIAL BIOTERRORISM AGENTS

Riemenschneider JL, Garrison AR, Custer DM, Geisbert JB, Lee J, Bassett A, Jahrling PB, Negley D, Hevey M, Schmaljohn A, and Schmaljohn CS (in preparation).

10 PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide titles, inventors, and dates of applications.

Protective DNA vaccine encoding the protective antigen of (PA) *Bacillus anthracis*. Vaccine involves DNA vaccination with the PA gene fused behind the tissue plasminogen activator (TPA) sequence.

CS Schmaljohn, L Iacono-Connors, JL Riemenschneider

Submitted March 12, 2002

11) PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

None

Domestic

Heldebrink K, Mellquist J, and Schmaljohn C. Baculovirus expression of Ebola virus glycoprotein (GP) and nucleocapsid protein (NP). 19th Annual Meeting for the American Society of Virology, Ft. Collins, CO 2000 (Poster Presentation).

Riemenschneider JL, Custer DM, Garrison AR, and Schmaljohn CS. DNA vaccination by gene gun is protective against Venezuelan Equine Encephalitis virus in mice and guinea pigs. 20th Annual Meeting for the American Society of Virology, Madison, WI 2001 (Oral Presentation).

Garrison A, Riemenschneider J, Gelsbert J, Heldebrink K, Jahrling P, and Schmaljohn C. Ebola virus glycoproteins produced by recombinant baculoviruses protect guinea pigs from Ebola virus challenge. 50th Annual Meeting of the American Society of Tropical Medicine and Hygiene, Atlanta, GA 2001 (Poster Presentation).

- 12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* Include dates, names and locations of seminars.
"DNA Vaccines for Highly Infectious Agents" given at the Food and Drug Administration on May 14, 2002

- 13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*
None

- 14) *NEW POSITION TITLE*
Biologist

- 15) *NEW POSITION ORGANIZATION* Provide name and city of organization.
Food and Drug Administration, Bethesda, MD

- 16) *NEW POSITION STATUS /CATEGORY* Please indicate only one.

- ☐ Remain at Host Agency as Permanent Employee
☐ Remain at Host Agency as Contract/Temporary Employee
Abbreviate Host Laboratory/Center _____
☒ Research Position at Another US Government Laboratory
☐ Administrative Position at US Government Laboratory
☐ Research Position at Foreign Government Laboratory

- ☐ Research/Teaching at US College/University
☐ Research/Teaching at Foreign College/University
☐ Research/Administration in Industry
☐ Research/Admin in Non-Profit Organization
☐ Postdoctoral Research
☐ Self Employed
☐ Other: specify _____

- 17) *APPRAISAL OF THE ASSOCIATESHIP PROGRAM* Please rate each of the following
Your experience as a NRC Research Associate in this federal Laboratory 1 (poor) to 10 (excellent)

- 10 Short-term value: development of knowledge, skills, and research productivity
Comments:

USAMRIID was a great place to do an associateship. I had to hit the ground running and was actually surprised I could do so after graduate school, but I was ready for the challenge. I learned a tremendous amount in a short amount of time and was very productive in terms of the scientific research. I have been involved in research projects on numerous viruses and bacteria and learned much about each of them over the last 2.5 years.

10 Long-term value: how your NRC Associateship award affected your career to date

Comments:

I feel that being awarded the NRC associateship was a very good move for my career. I have made a lot of contacts and set up collaborations that may continue even after I complete my tenure as an NRC. I have learned managerial skills that I will take with me, as well as the in depth knowledge of bioterrorism related agents, which is very valuable in the current climate of the U.S.

Administrative Support 1 (poor) to 10 (excellent)

10 Quality of the support you received from the federal Laboratory

10 Quality of the support you received from the NRC staff

Comments on both/either:

I dealt a lot with Lisa Bevell and she is very competent, friendly, and helpful. I felt comfortable letting her handle my questions and problems and felt assured that she would take care of matters in a timely and appropriate matter.

18) PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT

I would suggest more structured interaction between NRC at the same institution or even at nearby institutions to encourage collaborations and friendships. It may even be useful to have a "welcome" lunch for just the NRC fellows each time a new NRC associate arrives; to help them acclimate a little faster and to not feel so alone as they are expected to hit the ground running.

US Postal Service mailing address

Research Associateship Programs [TJ 2114]
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Washington, DC 20007

fax

202 - 334 - 2759

website

www.national-academies.org/rap

Express Delivery address

Research Associateship Programs [Suite 200]
National Research Council
1000 Thomas Jefferson Street, NW
Washington, DC 20007

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Rev. 03/2002

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National Research Council Associateship Programs

FINAL REPORT

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Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) Associate Last or Family Name		First Name	M.I.
Roberson		Melinda	R
2) FORWARDING Address (to which your tax statement will be mailed)		FORWARDING Phone and E-Mail (if known)	
2920 Carlyle Court		443-512-0826	
3) Today's Date		Dates of Tenure	
May 30, 2002		from May 2, 2000 to May 30, 2002	
4) Current Agency	Laboratory or NASA Center	Division / Branch / Directorate	
AMRMC	MRICD	Pharmacology/Applied	

5) NAME OF RESEARCH ADVISER

Dr. John H. McDonough

6) TITLE OF RESEARCH PROPOSAL

The effects of low-dose sarin exposure in a guinea pig model

7) SUMMARY OF RESEARCH DURING TENURE Itemize significant findings in concise form, utilizing key concepts/words.

- 1) 180 animals exposed to low-level sarin doses or saline (controls). Animals examined for signs of sarin intoxication, body temp, weight, EEG and general activity, and flinch threshold during the exposure period, and 3, 10, 30 and 100 days post-exp.
- 2) Low-level sarin exposure results in a dramatic reduction of red blood cell (RBC) cholinesterase (ChE) activity in both the 0.2 LD50 and 0.4 LD50 groups (<40% and <20% of baseline, respectively), as compared to controls.
- 3) Significant reduction in brain ChE activity in the six brain regions examined in the 0.4 LD50, but not in the 0.2 LD50, sarin animals, compared to controls. There was a steady return to baseline by 100 days post-exposure in both RBC and brain ChE.
- 4) Significant increases in activity (total distance traveled and center time) in the 0.4 animals, and in rearing in both the 0.2 & 0.4 animals at 100 days post-exposure. A mild trend toward increased flinch threshold in exposed animals was observed.
- 5) No change in body weight or temperature (pre- or post-injection), or in stereotypical behavior at any time point examined. No sarin-related change in EEG activity during the exposure period; the analysis of post-exposure EEG records is ongoing.

8) RESEARCH IN PROGRESS Describe in no more than 100 words.

Interestingly, while the greatest inhibition of ChE, both RBC and brain, appears at the end of the exposure period (exposure day 10), it is at 100 days post-exposure--when ChE activity has returned to near-control levels--that the behavioral (activity) differences occur. This suggests that the initial reduction in ChE activity may lead to changes in neuropathology, neurotransmitter receptors or downstream neurochemical cascades that ultimately influence behavior. To determine what further changes in brain parameters occur, and whether these changes are permanent--or at least persistent, regional neurotransmitter receptor binding assays, examination of cortical EEG activity at the post-exposure time points, and neuropathological evaluations are ongoing. Western blot analysis of receptor-regulated amyloid precursor protein is also being carried out.

9) PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

b) Books, book chapters, other publications

Roberson, M.R., Schmidt, S.B., Gonzales, M.D. and McDonough, J.H. (2001) The potential neurotoxic effects of low-dose sarin exposure in a guinea pig model. Proceedings of the 2001 Conference on Chemical and Biological Defense.

c) Manuscripts in preparation, manuscripts submitted

Roberson, M.R., Schmidt, S.B., Gonzales, M.D., McAVoy, K.M., Francisco, C.P. and McDonough, J.H. (2002) The effects of chronic, low-dose sarin exposure on nociception, general activity and acetylcholinesterase activity (manuscript in preparation).

10 PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide titles, inventors, and dates of applications.

11) PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

Roberson, M.R., Schmidt, S.B., Gonzales, M.D., McAvoy, K.M., Francisco, C.P. and McDonough J.H. (2002) Depression Of Cholinesterase Activity By Low-Dose Sarin Exposure May Lead To Persistent Changes That Influence Behavior. Abstract submitted, Society for Neuroscience Annual Meeting, Orlando, FL.

Roberson, M.R., Schmidt, S.B., Gonzales, M.D., McAvoy, K.M. and McDonough J.H. (2001) The effects of chronic, low-dosesarin exposure on behavior, neurochemistry and neuropathology. Society for Neuroscience Annual Meeting, San Diego, CA. Soc. Neurosci. Abstr., Vol. 27, Program No. 971.11.

Domestic

Tsung-Ming Shih, Melinda R. Roberson, Stanley W. Hulet and John H. McDonough. (2002) The effects of repeated non-acute sarin exposure on physiology, behavior, EEG, neurochemistry and pathology. (Abstract submitted for platform presentation at the Bioscience Review, Hunt Valley, MD, June 2002.)

Roberson, M.R., Schmidt, S.B., Gonzales, M.D., McAvoy, K.M., Francisco, C.P. and McDonough, J.H. (2002) The effects of chronic low-dose exposure on behavior, neurochemistry, and brain pathology. (Abstract submitted for poster presentation at the Bioscience Review, Hunt Valley, MD, June 2002.)

Roberson, M.R., Schmidt, S.B., Gonzales, M.D. and McDonough, J.H. (2001) The potential neurotoxic effects of low-dose sarin exposure in a guinea pig model. Poster presentation at The Conference for Chemical and Biological Defense, Hunt Valley, MD.

12) SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES Include dates, names and locations of seminars.

13) PROFESSIONAL AWARDS RECEIVED DURING TENURE

14) NEW POSITION TITLE

Pharmacologist

15) NEW POSITION ORGANIZATION Provide name and address of organization.

Neurotoxicology Branch, USAMRICD, 3100 Ricketts Point Road, APG, MD 21010

16) NEW POSITION STATUS / CATEGORY Please indicate only one.

- ☒ Remain at Host Agency as Permanent Employee
☐ Remain at Host Agency as Contract/Temporary Employee
Abbreviate Host Laboratory/Center _____
☐ Research Position at Another US Government Laboratory
☐ Administrative Position at US Government Laboratory
☐ Research Position at Foreign Government Laboratory

- ☐ Research/Teaching at US College/University
☐ Research/Teaching at Foreign College/University
☐ Research/Admin Position in Industry
☐ Research/Admin in Non-Profit Organization
☐ Postdoctoral Research
☐ Self Employed
☐ Other Please specify _____

17) APPRAISAL OF THE ASSOCIATESHIP PROGRAM Please rate each of the following on a scale of 1 (poor) to 10 (excellent).

Your experience as a NRC Research Associate in this federal Laboratory

10 Short-term value: development of knowledge, skills, and research productivity

Comments:

The NRC Associateship provided an excellent postdoctoral situation that allowed me to capitalize on strengths and abilities while facing challenges and acquiring new skills. Dr. McDonough, his colleagues and lab associates provided a nurturing/stimulating/congenial work environment. Because of the positive atmosphere and excellent facilities, I was able to largely complete a complex project about which I'm very pleased --in terms of personal AND professional growth.

10 Long-term value: how your NRC Associateship award affected your career to date

Comments:

I am gratified to have been offered a permanent position at MRICD, and am grateful to the MRICD and the NRC for providing me with a wonderful postdoctoral opportunity. This opportunity led to further personal and scientific development, as well as to a permanent job in a challenging and supportive Institute.

Administrative Support

§ Quality of the support you received from the federal Laboratory

§ Quality of the support you received from the NRC staff
Comments:

18) PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT

US Postal Service mailing address

Research Associateship Programs [TJ 2114]
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2101 Constitution Avenue NW
Washington, DC 20418

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ASSOCIATESHIP PROGRAMS

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1) Associate Last or Family Name		First Name	M.I.
YUAN		Huijun	
2) FORWARDING Address (to which your tax statement will be mailed)		FORWARDING Phone and E-Mail (if known)	
Inst. of Otolargngology, Chinese PLA General Hospital, 28 Fuxing Road, Beijing 100853, China		0086-10-68287882(home) Email: hj_yuan@hotmail.com	
3) Today's Date		Dates of Tenure	
March 14, 2002		from April 9, 2001 to March 31, 2002	
4) Current Agency	Laboratory or NASA Center	Division / Branch / Directorate	
AMRMC	WRAIR	Biochemistry/Molecular Pharmacology	

5) NAME OF RESEARCH ADVISER

Ashima Saxana

6) TITLE OF RESEARCH PROPOSAL

Cloning and expression of genes encoding BChE and its mutants in E. coli surface-display system for decontamination of OPs

7) SUMMARY OF RESEARCH DURING TENURE

Itemize significant findings in concise form, utilizing key concepts/words.

- 1) cDNA encoding 583-amino-acid mature bovine AChE was amplified and cloned into TA vector for sequencing.
- 2) Three expression plamids pBACgus3-ACHE (9.4kb), pBACgus9-ACHE (9.6kb), and pBACgus10-ACHE(9.7kb) were constructed and confirmed the correction by sequencing.
- 3) Two expression plasmid pBACgus3-ACHE and pBACgus10-ACHE were transfected the Sf9 cells with BacVector-3000 Triple Cut Virus DNA by Eufectin Transfection Reagent.
- 4)
- 5)

8) RESEARCH IN PROGRESS

Describe in no more than 100 words.

1. Pick up and purify positive baculovirus recombinant
2. Expression and purification of recombinant fusion protein.
3. Activity and stability identification of fusion protein CBD-AChE.

9) PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

N/A

b) Books, book chapters, other publications

N/A

c) Manuscripts in preparation, manuscripts submitted

N/A

10) PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide titles, inventors, and dates of applications.

N/A

11) PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

N/A

Domestic

N/A

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* Include dates, names and locations of seminars.

06/11/01 Mutations in the novel procadherin PCDH15 cause Usher syndrome type 1F
At Division of Biochemistry, WRAIR

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

N/A

14) *NEW POSITION TITLE*

Associate Professor

15) *NEW POSITION ORGANIZATION* Provide name and address of organization.

Inst. of Otolargngology, Chinese PLA General Hospital.

16) *NEW POSITION STATUS / CATEGORY* Please indicate only one.

- ☐ Remain at Host Agency as Permanent Employee
☐ Remain at Host Agency as Contract/Temporary Employee
Abbreviate Host Laboratory/Center _____
☐ Research Position at Another US Government Laboratory
☐ Administrative Position at US Government Laboratory
☒ Research Position at Foreign Government Laboratory

- ☐ Research/Teaching at US College/University
☐ Research/Teaching at Foreign College/University
☐ Research/Admin Position in Industry
☐ Research/Admin in Non-Profit Organization
☐ Postdoctoral Research
☐ Self Employed
☐ Other Please specify _____

17) *APPRAISAL OF THE ASSOCIATESHIP PROGRAM* Please rate each of the following on a scale of 1 (poor) to 10 (excellent).

Your experience as a NRC Research Associate in this federal Laboratory

- 2 Short-term value: development of knowledge, skills, and research productivity

Comments:

Enhanced my knowledge and technical skill about the protein experssion in baculovirus system.S

- 2 Long-term value: how your NRC Associateship award affected your career to date

Comments:

Meeting with many accomplished scientists in this area will greatly benefits to my acedemic career in the future.

Administrative Support

- 2 Quality of the support you received from the federal Laboratory

- 10 Quality of the support you received from the NRC staff

Comments:

Staff and support personels in the Division of Biochemistry, WRAIR, is very supportive, which made my project has been going smoothly and productively. NRC Staff are most frendly and efficient professionals I have ever seen in the government agency. The quality of their work (Lisa Bevell, Peggy Wilson) are very impressive.

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT*

Give more chance to foreign scientist to be NRC fellows.

US Postal Service mailing address

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National Research Council
2101 Constitution Avenue NW
Washington, DC 20418

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ID#

fax

202 - 334 - 2759

website

www.national-academies.org/rap

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Express Delivery address

Research Associateship Programs [Suite 200]
National Research Council
1000 Thomas Jefferson Street, NW
Washington, DC 20007

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Advisers to the Nation on Science, Engineering, and Medicine

National Research Council Associateship Programs

ASSOCIATESHIP PROGRAMS
RECEIVED AUG 14 2002

FINAL REPORT

Enter information electronically in Layout view.

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) Associate Last or Family Name Zhang		First Name Peng	M.I.
2) FORWARDING Address (to which your tax statement will be mailed) 14733 Yearling Terrace, Rockville MD 20850		FORWARDING Phone and E-Mail (if known) 301-319-9516, peng.zhang@na.amedd.army.mil	
3) Today's Date July 30, 2002		Dates of Tenure from February 1, 1999 to July 31, 2002	
4) Current Agency AMRMC	Laboratory or NASA Center WRAIR	Division / Branch / Directorate ET	

5) NAME OF RESEARCH ADVISER

Peter K. Chiang, PhD.

6) TITLE OF RESEARCH PROPOSAL

Investigate of Caspases mediated Apoptosis

7) SUMMARY OF RESEARCH DURING TENURE Itemize significant findings in concise form, utilizing key concepts/words.

- 1) The molecular mechanism of CEES induced apoptosis was discovered. CEES can inhibit PKD1-Akt/Pkb pathway, and in turn to inhibit Bcl family expression and stimulate caspases expression.
- 2) A genomic DNA fragment, which contain promoter region of human GST1, GSTa1, were cloned and finished DNA sequencing analysis.
- 3) A series inhibitors of caspases were designed to synthesis based on the structure of human caspase 3, and the activators were designed to synthesis based on malaria caspase structure. Human caspase 3 was overexpressed in E coli system.
- 4) . A novel apoptosis related gene, methionine aminopeptidase (MetAP), was cloned from malaria species. DNA sequencing of P. falciparum MetAP and P. berghei MetAP were finished.
- 5) The noval apoptosis inhibitors, IAPs, were cloned from malaria species.

8) RESEARCH IN PROGRESS Describe in no more than 100 words.

In the Specific Aim #1: Investigate the functions and biological effect of chemicals induced cell damages. Studies for early cellular response mechanism of the intoxication induced apoptosis are in progress.
In Specific Aim #2: Modulation of apoptosis via control regulation of caspase expression. The cloned GSTs' promoters are going to subject Gene regulation study.
In Specific Aim #4: Anti malaria drugs against malaria caspases were deigned base on the structure difference between malaria and human genes. The kinatic parameters are been detecting.

9) PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

1. A novel pcna-binding motif identified by the panning of a random peptide display library

Xu H, Zhang P, Liu L, Lee MY.

Biochemistry 40(14):4512-20 (2001)

2.

Angiogenesis Inhibitors Specific for Methionine Aminopeptidase 2 As Drugs for Malaria And Leishmania

Peng Zhang, Diarmuid E. Nicholson, Janusz M. Bujnicki, Xinzhuan Su, James J. Brendle, Michael Ferdig, Dennis E. Kyle, Wilbur K. Milhous, Peter K. Chiang

J. Biomed. Science 9(1): (2002)

3.

Gene expressions in jurkat cells poisoned by a sulphur mustard vesicant and the induction of apoptosis

Peng Zhang, Patrick Ng, Diana Caridha, Richard A. Leach, Ludmila V. Asher, Mark J. Novak, William J. Smith, Steven L. Zeichner, and Peter K. Chiang
In press Br. J. Pharmacol.(2002)

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

Malarial methionine aminopeptidase (MetAP) genes from Plasmodium berghei
Peng Zhang, Diarmuid E. Nicholson, Janusz M. Bujnicki, Michael Ferdig, Jianbing Mu, Xinzhuang Su, Wilbur K. Milhous and Peter K. Chiang
In preparation

10 *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

1.
Zhang, P., Ng, P., Mark, M.J., Zeichner, S., and Chiang, P.K.
Detection of Geath Genes by microarray in the Apoptosis of Jurkat Cells Induced by an Alkylating Agent 2-Chlorethylethyl Sulfide.
40th Annual Meeting of Society of Toxicology, San Francisco, CA
2.
Chiang, P.K., Leach R.A., Caridha, D., Smith, W.J., and Zhang, P.
Signature Gene Expression of Jurkat cells treated with Sulfur Mustard and the protection by 3-Deaza-(+)aristeromycin
In XIVth Congress of Pharmacology, July 7-12, San Francisco, CA.
Pharmacologist 44(2 Supplement1) A126, 2002

Domestic

1.
Peng Zhang, Diarmuid E. Nicholson, Janusz M. Bujnicki, Michael Ferdig, Jianbing Mu, Xinzhuang Su, Wilbur K. Milhous, Peter K. Chiang
Malarial Methionine Aminopeptidase Genes from Plasmodium falciparum and Plasmodium Berghei
Genomics Workshop, Silver Spring, MD
2.
Zhang, P., Caridha, D., Leach R.A., Smith, W.J., and Chiang, P.K.
Signature Gene Expression of Jurkat cells treated with Sulfur Mustard and the protection by 3-Deaza-(+)aristeromycin
Bioscience Review Conference, Hunt Valley, MD
3.
Leach R.A., Caridha, D., Zhang, P., Smith, W.J., and Chiang, P.K.
Early Cellular Responses to Sulfur Mustard Intoxication
Bioscience Review Conference, Hunt Valley, MD

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* Include dates, names and locations of seminars.

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

14) *NEW POSITION TITLE*

Scientist

15) *NEW POSITION ORGANIZATION* Provide name and address of organization.

Div. of ET
Walter Reed Army Institute of Research
503 Robert Grant Ave.

Silver Spring, MD 20910

16) *NEW POSITION STATUS / CATEGORY* Please indicate only one.

- ☐ Remain at Host Agency as Permanent Employee
☒ Remain at Host Agency as Contract/Temporary Employee
Abbreviate Host Laboratory/Center _____
☐ Research Position at Another US Government Laboratory
☐ Administrative Position at US Government Laboratory
☐ Research Position at Foreign Government Laboratory

- ☐ Research/Teaching at US College/University
☐ Research/Teaching at Foreign College/University
☐ Research/Admin Position in Industry
☐ Research/Admin in Non-Profit Organization
☐ Postdoctoral Research
☐ Self Employed
☐ Other Please specify _____

17) *APPRAISAL OF THE ASSOCIATESHIP PROGRAM* Please rate each of the following on a scale of 1 (poor) to 10 (excellent).

Your experience as a NRC Research Associate in this federal Laboratory

9 Short-term value: development of knowledge, skills, and research productivity
Comments:

9 Long-term value: how your NRC Associateship award affected your career to date
Comments:

Administrative Support

10 Quality of the support you received from the federal Laboratory
10 Quality of the support you received from the NRC staff
Comments:

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT*

US Postal Service mailing address

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National Research Council
2101 Constitution Avenue NW
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202 - 334 - 2759

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www.national-academies.org/rap

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Research Associateship Programs [Suite 200]
National Research Council
1000 Thomas Jefferson Street, NW
Washington, DC 20007

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FINAL REPORT

Enter information electronically in Layout view.

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) Associate Last or Family Name		First Name	M.I.
Zhu		Shuren	
2) FORWARDING Address (to which your tax statement will be mailed)		FORWARDING Phone(s) and E-Mail (if known)	
14110 Grand Pre Road #33, Silver Spring, MD 20906		Phone: 301-871-0032 Phone: 301-319-9645 E-mail: shuren.zhu@na.amedd.army.mil	
3) Today's Date		Dates of Tenure	
October 7, 2002		from November 1, 2001 to October 31, 2002	
4) Agency	Laboratory or NASA Center	Division / Branch / Directorate	
AMRMC	WRAIR	Experimental Therapeutics	
5) NAME OF RESEARCH ADVISER			
Ai Jeng Lin, Ph.D.			
6) TITLE OF RESEARCH PROPOSAL			
Design and Synthesis of Cysteine Proteinase Inhibitors as Potential Antimalarial Therapeutics			
7) SUMMARY OF RESEARCH DURING TENURE Itemize significant findings in concise form, utilizing key concepts/words.			
1) A novel class of peptidomimetic antimalarial agents has been discovered.			
2) Compounds exhibited potent in vitro and in vivo activity against malarial parasites.			
3)			
4)			
5)			
8) RESEARCH IN PROGRESS Describe in no more than 100 words.			
A novel class of peptidomimetic antimalarial agents has been discovered. The core structure of these compounds consists of a substituted 5-aminopyrimidone ring and a Michael acceptor side chain. These compounds exhibited potent in vitro growth inhibitory activity against both chloroquine sensitive (D-6) and chloroquine resistant (W-2) Plasmodium falciparum clones. This class of compounds exhibited weak to insignificant in vitro cytotoxicity against neuronal, macrophage, and colon cell lines. A scale-up synthesis has also been performed, gram quantities of these compounds has been made available for in vivo anti-malarial studies. Some selected compounds exhibited in vivo antimalarial activity at 40-160 mg/kg dosages.			
9) PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH			
Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.			
a) Publications in peer-reviewed journals			
Shuren Zhu, Thomas H. Hudson, Dennis E. Kyle, and Ai J. Lin, Synthesis and In Vitro Studies of Novel Pyrimidinyl Peptidomimetics as Potential Antimalarial Therapeutic Agents. Journal of Medicinal Chemistry, 2002, 45, 3491-3496.			
b) Books, book chapters, other publications			
None			
c) Manuscripts in preparation, manuscripts submitted			
None			
10) PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH			
Provide titles, inventors, and dates of applications.			
None			
11) PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES			
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.			

International

None

Domestic

Synthesis of Pyrimidinyl Peptidomimetics As Potential Antimalarial Therapeutics, Shuren Zhu and Ai J. Lin, presented at the 34th American Chemical Society Middle Atlantic Regional Meeting, Towson, Maryland, 2001.

12) SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES Include dates, names and locations of seminars.

None

13) PROFESSIONAL AWARDS RECEIVED DURING TENURE

None

14) NEW POSITION TITLE

Research Associate

15) NEW POSITION ORGANIZATION Provide name and address of organization.

WRAIR, 503 Robert Grant Avenue, Silver Spring, Maryland 20910

16) NEW POSITION STATUS / CATEGORY Please indicate only one.

- | | |
|--|---|
| ☐ Remain at Host Agency as Permanent Employee | ☐ Research/Teaching at US College/University |
| ☒ Remain at Host Agency as Contract/Temporary Employee | ☐ Research/Teaching at Foreign College/University |
| Abbreviate Host Laboratory/Center WRAIR | ☐ Research/Administration in Industry |
| ☐ Research Position at Another US Government Laboratory | ☐ Research/Administration in Non-Profit Organization |
| ☐ Administrative Position at US Government Laboratory | ☐ Postdoctoral Research |
| ☐ Research Position at Foreign Government Laboratory | ☐ Self Employed |
| | ☐ Other: specify _____ |

17) APPRAISAL OF THE ASSOCIATESHIP PROGRAM Please rate each of the following on a scale of 1 (poor) to 10 (excellent).

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10 Short-term value: development of knowledge, skills, and research productivity

Comments:

10 Long-term value: how your NRC Associateship award affected your career to date

Comments:

Administrative Support

10 Quality of the support you received from the federal Laboratory

10 Quality of the support you received from the NRC staff

Comments:

18) PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT

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Washington, DC 20001

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rap@nas.edu

website

www.national-academies.org/rap

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cc:

Express Delivery address

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National Research Council
2001 Wisconsin Avenue, NW [GR 322A]
Washington, DC 20007

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10/7/2002