Award Number: DAMD17-00-2-0002

TITLE: Support for the Resident Research Associateship Program with the U.S. Army Medical Research and Materiel Command

PRINCIPAL INVESTIGATOR: Judith K. Nyquist, Ph.D.

CONTRACTING ORGANIZATION: National Research Council
Washington, DC 2001-2736

REPORT DATE: January 2008

TYPE OF REPORT: Final

PREPARED FOR: U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

DISTRIBUTION STATEMENT: Approved for Public Release;
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Support for the Resident Research Associateship Program with the U.S. Army Medical Research and Materiel Command

Judith K. Nyquist, Ph.D.

National Research Council
Washington, DC  2001-2736

For Abstract see attached individual Final reports.

Infectious disease; combat casualty care; chemical and biological Medical defense; military operational medicine; biomedical research
March 28, 2008

Ms. Judy Pawlus, Technical Editor
Office of the Deputy Chief of Staff
For Information Management
Attn: MCMR-RM1-S
504 Scott Street
Fort Detrick, MD 21702-5400

Re: Contract No. DAMD-17-00-2-0002 Technical Report

Dear Ms. Pawlus:

The enclosed technical report is to fulfill our contractual obligations for:

Contract: DAMD-17-00-2-0002
Title: U.S. Army Medical Research and Materiel Command Resident Research Associateship Program

The report covers the period January 24, 2007 through January 31, 2008. This report fulfills contractual requirements for technical reports. The original report and three copies are enclosed for your use.

Sincerely yours,

[Signature]
Judith K. Nyquist, Ph.D.
Deputy Director and
Program Administrator

Enclosures

cc: Mr. Christopher Joyce, USARIEM, Laboratory Program Representative
    Michael Dubick, Ph.D., USAISR, Laboratory Program Representative
    Robert Kan, Ph.D., USAMRICD, Laboratory Program Representative
    Bradley Stiles, Ph.D., USAMRIID, Laboratory Program Representative
    Sara Rothman, Ph.D., WRAIR, Laboratory Program Representative
    Mikel Jenkins, Contract Manager, NAS (letter)
    Laboratory Contract File (letter)
    Laboratory Contract Report File
Publicity

The National Academies Research Associateship Programs for the report period were announced to the scientific community in the fall of the preceding year. Publicity materials describing the National Research Council- U.S. Army Medical Research and 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 professional scientific and engineering meetings and minority recruitment events to promote the various programs and to 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 Army Medical Research and Materiel Command are conducted in March, June, September, and/or January of each year. The following is a breakdown of the action taken with the applications during the report period:

<table>
<thead>
<tr>
<th></th>
<th>Sept review of Aug app-07</th>
<th>Mar review of Feb app-07</th>
<th>June review of May app-07</th>
<th>Nov review of Jan app-08</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TOTAL APPLICATIONS</strong></td>
<td>4</td>
<td>7</td>
<td>10</td>
<td>6</td>
<td>27</td>
</tr>
<tr>
<td><strong>Number of Applications Reviewed</strong></td>
<td>3</td>
<td>4</td>
<td>7</td>
<td>5</td>
<td>19</td>
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<tr>
<td>Applications not recommended (did not pass Review)</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td><strong>Applications Recommended</strong> (passed Review)</td>
<td>3</td>
<td>4</td>
<td>7</td>
<td>5</td>
<td>19</td>
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<tr>
<td>Awards offered</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>0</td>
<td>12</td>
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<tr>
<td>Awards accepted</td>
<td>3</td>
<td>2</td>
<td>6</td>
<td>0</td>
<td>11</td>
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<tr>
<td>Awards declined</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Awards withdrawn by RAP (NRC officially withdrew award after it had been accepted.)</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Associates' Citizenship

Associates on tenure between 01/24/07 – 01/31/08 were citizens of the following countries:

39 U.S. Citizens
4 Permanent Residents

1 Australia (Permanent Resident)
1 India (Permanent Resident)
1 Japan (Permanent Resident)
1 Latvia (Permanent Resident)

1 India (OPT)
1 People's Republic Of China (OPT)
1 Australia (J-1 Research Scholar)
1 Brazil (J-1 Research Scholar)
1 Germany (J-1 Research Scholar)
1 Ghana (J-1 Research Scholar)
1 Ireland (J-1 Research Scholar)

1 Israel (J-1 Research Scholar)
1 Japan (J-1 Research Scholar)
1 New Zealand (J-1 Research Scholar)
1 Russia (J-1 Research Scholar)
1 Thailand (J-1 Research Scholar)
Associates’ Activities

Associates who ended tenure during the report period were on tenure for an average of 27 months, ranging from 12 months to 48 months.

Of the 15 Associates who ended tenure during the report period, 9 submitted final reports (60%). In the final reports, Associates indicated the following scholarly activity while on tenure.

- 8 Articles published in refereed journals
- 2 Patent applications
- 9 International presentations
- 7 Domestic presentations
- 1 Awards

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

- 1 Remain at host agency as perm. employee
- 3 Remain at host agency as contract employee
- 0 Research position at other US gov’t. lab
- 0 Administrative position at US gov’t. lab
- 1 Research position at foreign gov’t. lab
- 0 Research/teaching-US college/university
- 0 Research/teaching-foreign college/university
- 1 Research/admin in industry
- 1 Research/admin in non-profit organization
- 2 Postdoctoral research
- 1 Self employed
- 1 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:

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.36</td>
<td>Short-term value: Development of knowledge, skills, and research productivity</td>
</tr>
<tr>
<td>9.18</td>
<td>Long-term value: How your Research Associateship affected your career to date</td>
</tr>
<tr>
<td>7.67</td>
<td>Laboratory Support: Equipment, funding, orientation, safety &amp; health training, etc.</td>
</tr>
<tr>
<td>8.82</td>
<td>NRC: Quality of administrative support from the NRC</td>
</tr>
</tbody>
</table>

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 15 Associates who ended tenure, 7 Adviser evaluations were completed 41%. 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:

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Knowledge of Field</td>
</tr>
<tr>
<td>9</td>
<td>Research Techniques</td>
</tr>
<tr>
<td>8</td>
<td>Motivation</td>
</tr>
<tr>
<td>9</td>
<td>Independent Research</td>
</tr>
<tr>
<td>8</td>
<td>Innovative Thinking</td>
</tr>
<tr>
<td>8</td>
<td>Overall Scientific Ability</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Yes</td>
</tr>
<tr>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td>0</td>
<td>No Comment</td>
</tr>
<tr>
<td>0</td>
<td>No Answer</td>
</tr>
</tbody>
</table>
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 01/24/07 and 01/31/08. 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 been sent 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 PhD 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

**1/24/2007 - 1/23/2008**

### U.S. Army Medical Research and Materiel Command

<table>
<thead>
<tr>
<th>Associate Name+ Adviser</th>
<th>Center</th>
<th>Tenure Dates Start/End</th>
<th>Termination Report</th>
<th>Adviser Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkhilil, Abdunaser Dr. M. S. Ibrahim</td>
<td>(S) U.S. Army Medical Research Institute of Infectious Diseases</td>
<td>6/1/2007 - 5/31/2008</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allon, Nahum Dr. Bhupendra P. Doctor</td>
<td>Walter Reed Army Institute of Research, Silver Spring</td>
<td>10/11/2005 - 8/24/2007</td>
<td>Not Reed</td>
<td>Not Reed</td>
</tr>
<tr>
<td>Andres, Devon Katherine Dr. Radharaman Ray</td>
<td>U.S. Army Medical Research Institute of Chemical Defense</td>
<td>5/3/2006 - 5/2/2008</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beitzel, Brett Forrest Dr. Connie S. Schmaljohn</td>
<td>U.S. Army Medical Research Institute of Infectious Diseases</td>
<td>1/12/2004 - 1/11/2008</td>
<td>Received</td>
<td>Not Reed</td>
</tr>
<tr>
<td>Bhonsle, Jayendra Bhausaheb Dr. Donald P. Huddler</td>
<td>(S) Walter Reed Army Institute of Research, Silver Spring</td>
<td>7/6/2004 - 1/5/2008</td>
<td>Received</td>
<td>Not Reed</td>
</tr>
<tr>
<td>Biggins, Julia Elizabeth Dr. Gene G. Olinger</td>
<td>U.S. Army Medical Research Institute of Infectious Diseases</td>
<td>3/19/2007 - 3/18/2009</td>
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<tr>
<td>Bradfute, Steven Blake Dr. Thomas W. Geisbert</td>
<td>U.S. Army Medical Research Institute of Infectious Diseases</td>
<td>2/16/2005 - 2/15/2008</td>
<td></td>
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<tr>
<td>Brittingham, Katherine Tracey Cecil Dr. Sina Bavari</td>
<td>U.S. Army Medical Research Institute of Infectious Diseases</td>
<td>9/11/2003 - 6/10/2008</td>
<td></td>
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<tr>
<td>Cashman, Kathleen Anne Dr. Mary C. Guttieri</td>
<td>U.S. Army Medical Research Institute of Infectious Diseases</td>
<td>7/11/2005 - 7/10/2008</td>
<td></td>
<td></td>
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<tr>
<td>Enterlein, Sven Gunter Dr. Sina Bavari</td>
<td>U.S. Army Medical Research Institute of Infectious Diseases</td>
<td>12/18/2006 - 12/17/2007</td>
<td>Received</td>
<td>Not Reed</td>
</tr>
<tr>
<td>Filippov, Andrei Alexandrovich Dr. Apurba K. Bhattacharjee</td>
<td>(S) Walter Reed Army Institute of Research, Silver Spring</td>
<td>7/18/2005 - 7/17/2008</td>
<td></td>
<td></td>
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<tr>
<td>Furtado, Marcio de Araujo Dr. Debra L. Yourick</td>
<td>Walter Reed Army Institute of Research, Silver Spring</td>
<td>9/25/2006 - 9/24/2008</td>
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<tr>
<td>Ghosh, Kashinath Dr. Edgar D. Rowton</td>
<td>(S) Walter Reed Army Institute of Research, Silver Spring</td>
<td>8/1/2005 - 7/31/2008</td>
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<tr>
<td>Glynn, Audrey Rose Dr. Douglas S. Reed</td>
<td>U.S. Army Medical Research Institute of Infectious Diseases</td>
<td>11/6/2006 - 11/5/2008</td>
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<tr>
<td>Hammerbeck, Christopher David Dr. Jay W. Hooper</td>
<td>U.S. Army Medical Research Institute of Infectious Diseases</td>
<td>4/10/2007 - 4/9/2008</td>
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<tr>
<td>Honko, Anna Nichole Dr. Lisa E. Hensley</td>
<td>U.S. Army Medical Research Institute of Infectious Diseases</td>
<td>6/1/2006 - 5/31/2008</td>
<td></td>
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<tr>
<td>Jenkins, Amy Lynn Dr. Susan L. Welkos</td>
<td>U.S. Army Medical Research Institute of Infectious Diseases</td>
<td>8/13/2007 - 8/12/2008</td>
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<tr>
<td>Jensen, Victoria Margaret Dr. Lisa E. Hensley</td>
<td>U.S. Army Medical Research Institute of Infectious Diseases</td>
<td>7/19/2004 - 3/31/2007</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

+ (S) indicates the associate was a Senior.

Highlighted entries indicate no entry on the Award Init Screen but data on the Post Tenure Screen.
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<th>Tenure Dates Start/End</th>
<th>Termination Report</th>
<th>Adviser Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jirage, Dayadevi Balappa Dr. Norman C. Waters</td>
<td>(S) Walter Reed Army Institute of Research, Silver Spring</td>
<td>8/22/2005 - 10/10/2008</td>
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<td>Not Reed</td>
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<tr>
<td>Jones, Juli Erin Dr. Allen Cymerman</td>
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<td>2/6/2006 - 2/5/2008</td>
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<td>Not Reed</td>
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<tr>
<td>Kaba, Stephen Abanega Dr. David E. Lanar</td>
<td>Walter Reed Army Institute of Research, Silver Spring</td>
<td>8/1/2005 - 4/30/2008</td>
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<td>Not Reed</td>
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<tr>
<td>Kalina, Warren Vincent Dr. Sina Bavari</td>
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<td>9/10/2004 - 9/9/2007</td>
<td>Not Reed</td>
<td>Not Reed</td>
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<tr>
<td>Keener, William Kelvin Dr. Mark A. Poli</td>
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<td>10/1/2004 - 9/30/2007</td>
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<td>Not Reed</td>
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<td>Koehler, Jeffrey William, Jr Dr. Connie S. Schmaljohn</td>
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<td>9/17/2007 - 9/16/2008</td>
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<td>Liepinsh, Dmitry Dr. Urszula Krzych</td>
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<td>4/18/2006 - 4/17/2008</td>
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<tr>
<td>Ling, Yun Dr. Ashima Saxena</td>
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<td>12/4/2006 - 12/3/2008</td>
<td>Not Reed</td>
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<td>McGann, Patrick Timothy Dr. Nikolich P. Mikkelson</td>
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<td>Milner, Erin Elizabeth Dr. Michael P. Kozar</td>
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<td>7/23/2007 - 7/22/2008</td>
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<td>Morefield, Garry Lee Dr. Robert G. Ulrich</td>
<td>U.S. Army Medical Research Institute of Infectious Diseases</td>
<td>5/12/2004 - 2/9/2007</td>
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<td>Nicoll, William Stanley Dr. David E. Lanar</td>
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<td>4/1/2005 - 3/31/2007</td>
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<td>Not Reed</td>
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<tr>
<td>Noble, Schroeder Marie Dr. Donald P. Huddler</td>
<td>Walter Reed Army Institute of Research, Silver Spring</td>
<td>10/4/2005 - 8/17/2007</td>
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<tr>
<td>Ogg, Monica M. Dr. Jay W. Hooper</td>
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<td>8/27/2007 - 8/26/2008</td>
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<tr>
<td>Olivera, Dorian Scott Dr. Alfred M. Sciuto</td>
<td>U.S. Army Medical Research Institute of Chemical Defense</td>
<td>11/13/2007 - 11/12/2008</td>
<td>Not Reed</td>
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<td>Otto, Tamara Caviston Dr. David E. Lenz</td>
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<td>Picchioni, Dante Dr. Thomas J. Balkin</td>
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<td>7/5/2005 - 7/4/2008</td>
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<td>Reeves, Tony Elvern Dr. David E. Lenz</td>
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<td>6/1/2006 - 5/31/2008</td>
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<tr>
<td>Rickards, Caroline Alice Dr. Victor A. Convertino</td>
<td>U.S. Army Institute of Surgical Research</td>
<td>5/31/2005 - 5/30/2008</td>
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<td>Ruff, Albert Leonard Dr. James F. Dillman, III</td>
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<td>Rupp, Tracy Lynn Dr. Thomas J. Balkin</td>
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<td>1/23/2006 - 1/22/2009</td>
<td>Not Reed</td>
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</tbody>
</table>

+ (S) indicates the associate was a Senior.

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

### U.S. Army Medical Research and Materiel Command

<table>
<thead>
<tr>
<th>Associate Name+ Adviser</th>
<th>Center</th>
<th>Tenure Dates Start/End</th>
<th>Termination Adviser Report</th>
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<tbody>
<tr>
<td>Schully, Kevin Lee</td>
<td>U.S. Army Medical Research Institute of Infectious Diseases</td>
<td>5/1/2007 - 4/30/2009</td>
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<td>Dr. Ricky L. Ulrich</td>
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<td>Shiraki, Hiroaki</td>
<td>(S) Walter Reed Army Institute of Research, Silver Spring</td>
<td>11/13/2006 - 11/12/2008</td>
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<tr>
<td>Dr. Ai J. Lin</td>
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<td>Dr. James F. Dillman, III</td>
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<td>Dr. Russell E. Coleman</td>
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<td>Dr. Hua-Shu H. Huang</td>
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<td>Dr. Connie S. Schmaljohn</td>
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<td>Toth, Stephen I.</td>
<td>(S) U.S. Army Medical Research Institute of Infectious Diseases</td>
<td>3/13/2006 - 3/12/2009</td>
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<tr>
<td>Dr. Syed A. Ahmed</td>
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<td>Weeks, Christine Marie</td>
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<td>3/1/2006 - 8/31/2007 Received</td>
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<tr>
<td>Dr. George C. Tsokos</td>
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<tr>
<td>Wilson, Paul Anthony</td>
<td>Telemedicine and Advanced Technology Research Center</td>
<td>12/1/2005 - 3/30/2007 Received</td>
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<tr>
<td>Dr. Jaques Reifman</td>
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<tr>
<td>Dr. Larry G. Berglund</td>
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<td>Zeitler, Corinne</td>
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<td>1/2/2008 - 1/1/2009</td>
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</tr>
<tr>
<td>Dr. John H. Carra</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

55 Associates Listed

+ (S) indicates the associate was a Senior. 
Highlighted entries indicate no entry on the Award Init Screen but data on the Post Tenure Screen.
February 2007

1- Recommended

SHARMA, GAURAV
Citizenship: India
Adviser: Dr. Ashima Saxena
Research Field: 6291
Research Title: Design of a Nanoparticle Based Drug-Delivery System for Bioscavengers
Ph.D. Date: 2007
Northeastern University/MA

A- Accepted Award (2 Applicants listed)

ALKHALIL, ABDULNASER
Citizenship: United States
Adviser: Dr. M. S. Ibrahim
Research Field: 3298
Research Title: Analysis of Orthopoxvirus and Host Response Proteins to Identify and Validate Therapeutic Interventions
Ph.D. Date: 2001
Georgetown University/DC
Actual Starting Date: 6/01/07
Termination Date: 5/31/08

SCHULLY, KEVIN L
Citizenship: United States
Adviser: Dr. Ricky L. Ulrich
Research Field: 3299
Research Title: Analysis of the Francisella tularensis, Yersinia pestis, Burkholderia mallei, and Burkholderia pseudomallei Transcriptomes in vivo Using Whole Genome DNA Microarrays
Ph.D. Date: 2005
Louisiana State U & A&M College
Actual Starting Date: 5/01/07
Termination Date: 4/30/09

May 2007

3- Withdrew before Review

JENNINGS, ANNA R
Citizenship: United States
Adviser: Dr. Andrew J. Young
Research Field: 1895
Research Title: Identifying the Correlation between Overweight Status and Adverse Health Outcomes among Military Personnel
Ph.D. Date: 2007
U of North Carolina-Chapel Hill

A- Accepted Award (6 Applicants listed)

GUARISCO, JOHN A
Citizenship: United States
Adviser: Dr. John H. McDonough
Research Field: 2970
Research Title: Evaluation of Novel Nerve Agent Anticonvulsants and Their Effects on Brain Neurotransmitters
Ph.D. Date: 2007
Utah State University
Actual Starting Date: 9/06/07
Termination Date: 9/05/08
May 2007

A- Accepted Award (6 Applicants listed)

JEKINS, AMY L
Citizenship: United States
Adviser: Dr. Susan L. Welkos
Research Field: 3230
Research Title: Development of in vitro Assays to Identify Common Modes of Interaction of the Pathogens Yersinia pestis and Bacillus anthracis with Macrophages as a Model for in vivo Pathogenesis
Ph.D. Date: 2007
Cornell University/NY
Actual Starting Date: 8/13/07
Termination Date: 8/12/08

KOELNER, STEVEN W, JR
Citizenship: United States
Adviser: Dr. Connie S. Schmaljohn
Research Field: A072
Research Title: Development and Mechanisms of Action of Enhanced Human Interferon Against Lassa Fever and Rift Valley Fever
Ph.D. Date: 2007
Tulane Univ-Sch of Medicine/LA
Actual Starting Date: 9/17/07
Termination Date: 9/16/08

MILNER, ERIN E
Citizenship: United States
Adviser: Dr. Michael P. Kozar
Research Field: 5330
Research Title: Lead Optimization of Next Generation Quinoline Methansols
Ph.D. Date: 2007
U of North Carolina-Chapel Hill
Actual Starting Date: 7/23/07
Termination Date: 7/22/08

OGG, MONICA M
Citizenship: United States
Adviser: Dr. Jay W. Hooper
Research Field: 3298
Research Title: Identificaton and Evaluation of Therapeutic Approaches to Hantavirus Pulmonary Syndrome
Ph.D. Date: 2007
U of Tex-Hlth Sci Ct-San Antonio
Actual Starting Date: 8/27/07
Termination Date: 8/26/08

SPRADLING, KIMBERLY D
Citizenship: United States
Adviser: Dr. James F. Dillman, III
Research Field: 2969
Research Title: Genomic Analysis of Rat Brain Following Exposure to the Organophosphate Anticholinesterase Sarin
Ph.D. Date: 2007
University of North Texas
Actual Starting Date: 7/24/07
Termination Date: 7/23/08

W- Withdrew after Review/Recommend

CANNON, BRIAN R
Citizenship: United States
Adviser: Dr. James F. Dillman, III
Research Field: 2968
Research Title: Proteomic Analysis of Toxin Sign Transduction Pathways for the Development of Chemical Warfare Agent Therapeutics
Ph.D. Date: 2007
Johns Hopkins University/MD
August 2007

3- Withdrew before Review

SHIFLETT, PATRICK R
Citizenship: United States
Adviser: Dr. Connie S. Schmaljohn
Research Field: A033
Research Title: Improving the Cross-reactive Humoral Immune Response to Ebola Virus by Immune Focusing and Multipitope Boosting of DNA Vaccines

Ph.D. Date: 2007
University of New Mexico

A- Accepted Award (3 Applicants listed)

ALTAMURA, LOUIS A
Citizenship: United States
Adviser: Dr. Connie S. Schmaljohn
Research Field: A072
Research Title: Assembly of Bunyaviruses with Biothreat Potential

Ph.D. Date: 2007
University of Pennsylvania
Actual Starting Date: 3/10/08
Termination Date: 3/09/09

OLIVERA, DORIAN S
Citizenship: United States
Adviser: Dr. Alfred M. Sciuto
Research Field: 2968
Research Title: Proposal for the Elucidation of Edema Mechanisms in Acute Phosgene Exposure

Ph.D. Date: 2006
U of New Mexico Sch of Medicine
Actual Starting Date: 11/13/07
Termination Date: 11/12/08

ZEITLER, CORINNE
Citizenship: United States
Adviser: Dr. John H. Carra
Research Field: P370
Research Title: Structural Basis of Cidofovir Resistance in the Variola Virus E9L DNA Polymerase

Ph.D. Date: 2006
Baylor College of Medicine/TX
Actual Starting Date: 1/02/08
Termination Date: 1/01/09

November 2007

3- Withdrew before Review

NYFELER, YVES A
Citizenship: Switzerland
Adviser: Dr. Ladaporn Bodhidatta
Research Field: 3299
Research Title: Legionella Pneumophila in Thailand sewers

Ph.D. Date: 2005
Max Planck Immunization Bio/Ger
November 2007

A-Accepted Award (5 Applicants listed)

DOSANJH, NUVJEEVAN S
Citizenship: England, U.K.
Adviser: Dr. Ashima Saxena
Research Field: 0931
Research Title: The Structural and Functional Characterisation of Human SMP30, a Novel DFPase
Ph.D. Date: 2005
Leicester, U Of
Expected Starting Date: 6/02/08
Termination Date: 6/01/09

MCCARTHY, SARAH E
Citizenship: United States
Adviser: Dr. John W. Huggins
Research Field: 3298
Research Title: Comparison of Pathogenicity of Monkey pox Virus Strains in Cynomologus macaques
Ph.D. Date: 2008
University of Pennsylvania
Expected Starting Date: 4/01/08
Termination Date: 3/31/09

MITCHELL, DANIEL A
Citizenship: United States
Adviser: Dr. Connie S. Schmaljohn
Research Field: A072
Research Title: Improving the Cross-reactive Humoral Immune Response to Ebola Virus by Immune Focusing and Multi-epitope Boosting of DNA Vaccines
Ph.D. Date: 2007
Florida State University
Expected Starting Date: 5/12/08
Termination Date: 5/11/09

SOOJHAWON, ISWARDUTH
Citizenship: Mauritius
Adviser: Dr. Charles B. Millard
Research Field: 0999
Research Title: X-Ray Crystallography and Kinetics Studies of Novel Bis-oxime Reactivators of Acetylcholinesterase
Ph.D. Date: 2006
Poona, U Of
Expected Starting Date: 6/02/08
Termination Date: 6/01/09

VAN DE WETERING, CHRISTOPHER I
Citizenship: United States
Adviser: Dr. Patricia L. Worsham
Research Field: 3230
Research Title: Applying Whole-body Optical Imaging to Study the Course of Infection of Bacillus anthracis and Pathogenic Yersiniae in vivo
Ph.D. Date: 2007
University of Iowa
Expected Starting Date: 5/01/08
Termination Date: 4/30/09
Allon, Nahum


1. Formulation of new fusion liposome that enables endosomal escape and thus, eliminate the need for fusion peptide.
2. Changing the compression peptide from artificial polyllysine to natural protamine.
3. Increase of encapsulation rate and shelf life of liposomes by using lyophilized liposomes.
4. Selecting the proper experimental condition that enabled the delivery of DNA to the cell nucleus within 2 hours.
5. Visualisation of the trafficking process and the fate of the liposomes and their payload.

Beitzel, Brett Forrest

1/12/2004  1/11/2008

1. Developed high resolution footprinting technique to identify functional domains of viral genomes.
2. Used technique to identify functionally important regions of Venezuelan Equine Encephalitis Virus nsP3.
3. Used data from (2) to construct temperature sensitive mutant that may be pursued as attenuated vaccine candidates.
4. Developing technique using next-generation sequencers to footprint entire viral genomes rapidly.

Bhonsle, Jayendra Bhausaheb

7/06/2004  1/05/2008

2. DeNovo design of broad spectrum Antimicrobial Peptides (AMP).
3. 3D-QSAR models of AMP against Staphylococcus aureus and Mycobacterium ranae.
5. 3D-QSAR models for antimalarial Pf-FABH inhibitors and mefloquine analogs & derivatives.

Enterlein, Sven Gunter


1. Extensive Research of Protein interactions of Marburg and Ebola virus and the host cell.
2. Finalized a review on antisense molecules against filoviruses.
3. Gained insight into organizing a lab.

Jensen, Victoria Margaret


1. Performed temporal pathogenesis study of Andres virus and Sin Nombre virus in a Syrian hamster model.
2. Developed and tested a combination Hantaan-Andes virus DNA vaccine in non-human primates.
3. Developed and tested a Paumala virus vaccine in non-human primates.
5. Studied the temporal expression of Ebola GP1, 2delta in non-human primates.

Nicoll, William Stanley


1. Transglutaminase 2 and Casein kinase 2 sites discovered in LSA1 through bioinformatic analysis.
2. LSA1 found to be crosslinked by transglutaminase 2 in vitro.
3. LSA1 found to be phosphorylated by Casein kinase 2 in vitro.
4. LSA1 is identified in vivo using LSA1 specific antibodies in Plasmodium falciparum infected chimeric mice containing functional human livers.
5. Transglutaminase 2 crosslinking is identified in Plasmodium falciparum infected chimeric mice containing functional human livers.

Noble, Schroeder Marie


1. The ATPase domain of S.cerevisiae Hsp90 was crystallized in the presence of the inhibitor Indo3 and preliminary data was collected.
2. We have completed cloning, expression, and purification of full length Plasmodium falciparum Hsp90, ATPase domain PfHsp90, and an ATPase-middle domain fusion construct of PfHsp90.
3. Crystallization trials were started for the PfHsp90 ATPase-middle domain fusion construct.
4. PfHsp90 interaction partners have been identified by using a pull-down assay.
Noble, Schroeder Marie  
5  An E.coli HTS C142A mutant was crystallized and a complete data set was collected from crystals diffracting to 2.8A.

Swanson, Katherine Irene  
1  Sequence analysis of sand fly pools for Leishmania gpi gene fragment yielded mainly L. tarentolae and a non-Leishmania sequence similar to Anopheles gambiae gpi.
2  Medically-important Leishmania sequences (L major, L. Tropica, L. infantum) were identified from sand fly pools from Iraq and Afghanistan. In addition, a sequence similar to both L. major and L. tropica was identified.
3  Confirmatory sequencing for Leishmania using the internal transcribed spacer (ITS) fragment was unsuccessful due to variations within sequence. However, Leishmania was detected through PCR for the ITS fragment.
4  Working through a CRADA with Human Genetic Signatures, INA Technology has been utilized to develop blocking primers for the non-Leishmania sequences in order to determine whether Leishmania sequences can be obtained from the samples.
5  A fragment of cytochrome c oxidase I was amplified from sand fly genomic DNA for the identification of sand fly species using a combination of real time PCR with SYBR Green and Melting Curve Analysis.

Takampunya, Ratree  
12/04/2006  12/03/2007
1  The binding capability of Dengue virus (DEN) serotype 1-4 to the DCSIGN receptor on Raji cells between 8 Dengue fever (DF) strains and 10 dengue hemorrhagic fever (DHF) strains has no significant different.
2  The Dengue virus predominant strains trend to bind to DCSIGN receptor on Raji cells better than non-predominant strains.
3  Within DEN-1 the binding and internalization abilities of DHF strain (ThD1-0323/91) and DF strain (ThD1-0488/94) to human Dendritic cells (3 donors) has no significant different when compare the amount of virus bound to receptors on human DCs.
4  Studying the replication rates of 18 isolates of DEN in human DCs cells, we found that DHF strains replicate more efficient than DF strains when compare the production of virus titer from human DCs (3-5 donors) at 48 hr post-infection.

Weeks, Christine Marie  
1  DAF and ischemia-reperfusion injury; DAF treatment after ischemia and prior to reperfusion attenuates remote IR injury in mice in both hindlimb and mesentric ischemia models.
2  B cell depletion and ischemia-reperfusion injury: experiments in progress.

Wilson, Paul Anthony  
12/01/2005  3/30/2007
1  80% of PPRODO scores 0.7 or higher predict protein structural domain boundaries correctly (within 15 residues).
2  A software tool for easily creating custom parallel software pipelines was developed.
3  The software tool provides good speed up for up to the maximum number of tested processors - 256.
4  479 E. Chol. K12 protein-protein interactions are found in both Prolinks and DIP interaction networks.
5  Prolinks database not useful for developing an interaction network for E Coli K12.
Beitzel

FORWARDING Address (to which your tax statement will be mailed)

Res. or Inst.
Street 14131 Arbor Forest Dr #303
City, State Zip Rockville, MD 20850

Today’s Date

January 10, 2008

Agency

Laboratory or Center

AMRMC

USAMRIID

Virology

Name of Laboratory NRC Adviser (and USMA Mentor, if applicable)

Connie Schmaljohn

5) TITLE OF RESEARCH PROPOSAL

High Resolution Functional Mapping of Viral Genomes

6) SUMMARY OF RESEARCH DURING TENURE

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

1) Developed high resolution footprinting technique to identify functional domains of viral genomes

2) Used technique to identify functionally important regions of Venezuelan Equine Encephalitis Virus nsp3

3) Used data from (2) to construct temperature sensitive mutant that may be pursued as attenuated vaccine candidates

4) Developing technique using next-generation sequencers to footprint entire viral genomes rapidly

5) (USMA Davies Fellow: please add summary of teaching, including classes taught.)

7) RESEARCH IN PROGRESS

Describe in no more than 100 words.

Currently developing a genetic footprinting technique utilizing next generation sequencers. This technique will allow the functional analysis of entire viral genomes, up to hundreds of kilobases in a single experiment. In conjunction with this project, we are also developing techniques that will allow us to create libraries of mutants in which each mutant has a defined change down to single nucleotide resolution.

8) PUBLICATIONS AND PAPERS RESULTING FROM NATIONAL ACADEMIES 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


9) PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH

Provide titles, inventors, and dates of applications.

10) PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.
Domestic
The American Society for Virology Annual Meeting
July 2006, Madison, WI

Title: Genetic Footprinting of Venezuelan Equine Encephalitis Virus nsP3
Brett Beltzel and Connie Schmaljohn

Venezuelan equine encephalitis virus (VEEV) is a New World Alphavirus endemic to regions of South America. Normally maintained in a rodent reservoir, VEEV can be transmitted by mosquitoes to horses and humans where it can cause debilitating and potentially fatal encephalitis. Partially because of its pathogenesis in humans, VEEV is listed as a Category B select agent by the CDC.

The 5' two-thirds of of the VEEV genome (as in all alphaviruses) encodes four non-structural proteins, nsP1 - nsP4, that are involved in replication of the viral genome. Through biochemistry assays and sequence comparison to proteins with known activities, functions have been assigned to nsP1, nsP2, and nsP4. However, relatively little is known about the function of nsP3.

We performed genetic footprinting on VEEV nsP3 in an attempt to better understand its role in viral replication. Using a modified MuA transposon, we generated a library of nsP3 insertional mutants, wherein each clone contained a single 15-base pair insertion randomly positioned in the nsP3-coding region. We used this library and a VEEV reverse genetics system to generate a pool of replication-competent viruses. Analysis of the insertion sites in our pool of replication-competent viruses, and comparison to the insertion sites in our starting library allowed us to identify functionally important regions in nsP3. We also identified several regions in VEEV nsP3 that will tolerate insertions at 30°C, but not at 37°C or 40°C, and are attempting to generate temperature-sensitive viruses based on these data.

The results that we have obtained from genetic footprinting, combined with information on the replication characteristics of temperature-sensitive viruses designed from the footprinting information will increase our understanding of the functions of nsP3 in VEEV replication.

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

13) PROFESSIONAL AWARDS RECEIVED DURING TENURE

14) POST-TENURE POSITION TITLE
Principal Investigator

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

USAMRIID

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 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/Administration in Industry
☐ Research/Administration in Non-Profit Organization
☐ Postdoctoral Research
☐ Self Employed
☐ Other: specify

17) APPRAI.SAL OF RESEARCH ASSOCIATESHIP PROGRAM
On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE
☐ Development of knowledge, skills, and research productivity
Comments
The NRC RAP has given me the freedom to work very independently, and develop several promising avenues of research that I can take with me. During my NRC tenure I have worked on high risk / high reward projects that have taken a while to pay off, but I am confident that the techniques that I have developed, and am developing will allow me to be very productive over the next couple of years.

LONG TERM VALUE
☐ How the National Academies Associateship award affected your career to date
Comments
The RAP has allowed me to develop my own research interests that will help guide my career, and allow me to be a productive scientist.
LAB SUPPORT
Quality of support--equipment, funding, orientation, safety and health guidelines, etc.
Comments
Research has been great, bureaucracy not so great (but that is no big surprise for a government lab!)

ADVISER/MENTOR SUPPORT
Quality of mentoring from the Lab NRC Adviser (USMA Mentor, if applicable)
Comments
Dr. Schmaljohn has been an excellent advisor. She is very hands-off, but helpful when needed.

LPR SUPPORT
Quality administrative support from the LPR
Comments

NRC SUPPORT
Quality of administrative support from the NRC
Comments
Administrative support from the NRC has always been very helpful and friendly.

18) PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT:
This hasn't affected me, but several people that I know will be affected by the NRCs recent decision to include travel as income reported to the IRS. We have some associates that travel to far-off places during the course of their NRC tenure, and these trips can run into many thousands of dollars. If those costs are included as income, the NRC associates could be stuck with a hefty tax bill for work-related travel. I think this policy should be reconsidered.
FINAL REPORT

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
Bhonsle

2) FORWARDING Address (for tax statement / final stipend check)
13592 Waterford Hills Boulevard
Germantown, MD 20874-4655

FORWARDING Phone(s) and E-Mail (if known)
Home phone: (301) 916-6563
Alt. phone: (240) 441-0316
E-mail: jbhonsle@yahoo.com

3) Today's Date
December 26, 2007

Dates of Tenure
from July 6, 2004 to January 4, 2008

4) Agency
AMRMC

Laboratory or Center
WRAIR

Division / Branch / Department
Exp. Therapeutics / Medicinal Chem

5) NAME OF RESEARCH ADVISER (and USMA Mentor, if applicable)
LTC Michael P. Kizar

6) TITLE OF RESEARCH PROPOSAL
In Silico Molecular Modeling and Structure Based Approaches to Design and Discovery of Potential Therapeutic Agents

7) SUMMARY OF RESEARCH DURING TENURE
Itemize significant findings in concise form, utilizing key concepts/words.
1) Highly predictive 3D-QSAR models of Insect Repellents of DEET analogs and derivatives.
2) DeNovo design of broad spectrum Antimicrobial Peptides (AMP).
3) 3D-QSAR models of AMP against Staphylococcus aureus and Mycobacterium ranae.
4) Development of "bioactive conformer mining" method for predictive 3D-QSAR model.
5) 3D-QSAR models for antimalarial PI-FABH inhibitors and melquine analogs & derivatives.

USMA Davies Fellow: please add summary of teaching, including classes taught.

8) RESEARCH IN PROGRESS
Describe in no more than 100 words.
3D-QSAR model development for AMP against Bacillus Subtilus and Salmonella typhimurium is in it's final stages. Method development for predictive pharmacophore generation based on computational brute force approach of exhaustive exploration of all algorithm parameters is in its final stages. Application of machine learning methods such as Artificial Neural Network for development of predictive ADME models for bioavailability and half-life predictions has been initiated and explored. Application of Artificial Neural Network and Self Organizing maps methods for prediction of biologically relevant conformation from a pool of conformations is in progress.

a) Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.
1) Jayendra B. Bhonsle, Raj K. Gupta and Apurba K. Bhattacharjee
Novel semi-automated methodology for developing highly predictive QSAR models: Application for development of QSAR models for insect repellent amides.
2) Rickey P. Hicks, Jayendra B. Bhonsle, Divakaranomen Venugopal, Brandon W. Koser and Alan J. Magill.
De Novo Design of Selective Antibiotic Peptides by Incorporation of Un-natural amino acids.
3) Jayendra B. Bhonsle, Divakaranomen Venugopal, Donald P. Huddler, Alan J. Magill, and Rickey P. Hicks
Application of 3D-QSAR for Identification of Descriptors Defining Bioactivity of Antimicrobial.
4) Jayendra B. Bhonsle, and Donald Huddler
Novel Method For Mining QSAR Relevant Conformations.
Chemical Engineering Communications (2007) in press.
b) Books, book chapters, other publications

Jayendra B. Bhonsle, and Donald Huddler.
Q SAR: A powerful tool for drug design in combating infectious diseases.
Invited Book chapter in “Genomic and Computational Tools for Emerging Infectious Diseases”
Edited by Willy Valdivia-Granda; Springer Science+Business Media, Inc., New York, NY, USA.
Communicated/Submitted. Anticipated publication date is in early 2008.

c) Manuscripts in preparation, manuscripts submitted

1) Jayendra B. Bhonsle, and Donald Huddler
A comparative study of 3D-QSAR models of bacterial Enoyl Acyl Carrier Protein Reductase (FabI) inhibitors.
2) Jayendra B. Bhonsle, Norman Waters, and Donald Huddler.
3) Jayendra B. Bhonsle, Tiffany N. Heady, Geoffrey S. Dow, and Donald Huddler
A comparative study of 3D-QSAR models of Mefloquine based antimalarials.

10 PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM THE NRC ASSOCIATESHIP RESEARCH PROGRAM
Provide titles, inventors, and dates of applications.

Novel Anti-microbial Peptidomimetic Compounds and Methods to Calculate Anti-microbial activity,
Rickey P. Hicks, Jayendra B. Bhonsle, and Divakarun Venugopal
Filed on December 20, 2007.

11) PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

1) Jayendra B. Bhonsle and Michael P. Kozar
Title of Talk: Computational methods to Drug Design and Discovery.
Invited Talk: 5th YoungChem 2007 International Conference of Young Chemists. Jurata, Poland.
October 10 – October 14, 2007
2) Jayendra B. Bhonsle and Donald Huddler
Novel Method For Mining QSAR Relevant Conformations.
Keynote address at International Conference on Modeling in Chemical and Biological Engineering Sciences.
Bangkok, Thailand. October 25 – October 27, 2006
3) Jayendra B. Bhonsle, Raj K. Gupta, and Apurba K. Bhattacharjee
Title of Poster: QSAR studies of insect repellents and design of better insect repellent: An automated approach for QSAR model development of insect repellents.
XVIth International Congress for Tropical Medicine and Malaria. Marseilles, France.
September 11- September 15, 2005.
4) Jayendra B. Bhonsle, Raj K. Gupta, and Apurba K. Bhattacharjee
Title of Poster: QSAR studies of insect repellents and design of better insect repellent. A semi-automated approach for predictive QSAR model of insect repellents using scripted common molecular modeling tools and a novel method for test set compounds activity prediction.
Domestic

1) Jayendra B. Bhonsle and Donald Huddler
   A comparative study of 3D-QSAR models of bacterial Enoyl Acyl Carrier Protein Reductase (FabI) inhibitors.

2) Jayendra B. Bhonsle and Apurba K. Bhattacharjee
   Title of Poster: QSAR studies of bacterial Enoyl Acyl Carrier Protein Reductase (FabI)
   ASTMH 54th Annual Meeting, Washington D.C. December 11 - December 15, 2005

3) Jayendra B. Bhonsle, Raj K. Gupta, and Apurba K. Bhattacharjee
   Title of Poster: QSAR studies of insect repellents and design of better insect repellent: Insights into mechanism of
   action of DEET analogs.

12) SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES
    Include dates, names and locations of seminars.
    November 13, 2006. Title of Talk: Computational Methods for Drug Design and Discovery. Invited for Seminar at the
    "COLLOQUIUM OF THE COMPUTATIONAL MATERIALS SCIENCE CENTER College of Science", Computational
    Materials Science Center, George Mason University, Fairfax, VA.

13) PROFESSIONAL AWARDS RECEIVED DURING TENURE
    None

14) POST-TENURE POSITION TITLE
    Senior Research Scientist

15) POST-TENURE ORGANIZATION
    Provide name and city of organization.
    Walter Reed Army Institute of Research, Silver Spring, Maryland.

16) POST-TENURE POSITION STATUS / CATEGORY
    Please indicate only one.
    [ ] Remain at Host Agency as Permanent Employee
    [X] 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/Administration in Non-Profit Organization
    [ ] Postdoctoral Research
    [ ] Self Employed
    [ ] Other: specify ____________________________
17) APPRAISAL OF NRC RESEARCH ASSOCIATESHIP PROGRAM
On a scale of 1 - 10 (poor - excellent), please rate the following:

SHORT TERM VALUE
10    Development of knowledge, skills, and research productivity
      Comments

LONG TERM VALUE
10    How the National Academies Associateship award affected your career to date
      Comments

LAB SUPPORT
7    Quality of support—equipment, funding, orientation, safety and health guidelines, etc.
      Comments

ADVISER/MENTOR SUPPORT
8    Quality of mentoring from the Lab NRC Adviser (USMA Mentor, if applicable)
      Comments

LPR SUPPORT
8    Quality administrative support from the LPR
      Comments

NRC SUPPORT
7    Quality of administrative support from the NRC
      Comments

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

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

<table>
<thead>
<tr>
<th>1) Associate Last or Family Name</th>
<th>First Name</th>
<th>M.I.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enterlein</td>
<td>Sven</td>
<td>G</td>
</tr>
</tbody>
</table>

2) **FORWARDING Address** (to which your tax statement will be mailed)

<table>
<thead>
<tr>
<th>Res. or Inst. Res</th>
<th>Street</th>
<th>City, State Zip</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1194 Schaffer Drive</td>
<td>Frederick, MD 21702</td>
</tr>
</tbody>
</table>

3) **Today's Date**

<table>
<thead>
<tr>
<th>dates of tenure</th>
<th>from</th>
<th>to</th>
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<td>December 18, 2006</td>
<td>July 1, 2007</td>
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4) **Agency** | **Laboratory or Center** | **Division / Directorate / Department**
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5) **USAMRID** | **Bacteriology**
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<td>Bacteriology</td>
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5) **Name of Laboratory NRC Advisor (and USMA Mentor, if applicable)**

<table>
<thead>
<tr>
<th>Dr. Sina Bavari, <a href="mailto:sina.bavari@us.army.mil">sina.bavari@us.army.mil</a></th>
</tr>
</thead>
</table>

6) **TITLE OF RESEARCH PROPOSAL**

Mutational analysis of the structure-function relationship of Ebola virus matrix protein VP40

7) **SUMMARY OF RESEARCH DURING TENURE**

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

1) Extensive research of protein interactions of Marburg and Ebola virus and the host cell

2) Finalized a review on antisense molecules against filoviruses

3) Gained insight into organizing a lab

4)  

5) (USMA Davies Fellow: please add summary of teaching, including classes taught.)

8) **RESEARCH IN PROGRESS**

Describe in no more than 100 words.

Proteomics profiling the proteins involved in Ebola- and Marburg virus life cycle; inhibition experiments with siRNAs and overexpression with plasmid-based systems; mode of action of small molecule inhibitors against various viruses

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.

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
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) POST-TENURE POSITION TITLE
Director of Molecular Biology

15) POST-TENURE ORGANIZATION Provide name and address of organization.
Integrated BioTherapeutics Inc, 4539 Metropolitan Ct, Frederick, MD 21704

16) POST-TENURE STATUS / CATEGORY Please indicate only one.
☐ 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 RESEARCH ASSOCIATESHIP PROGRAM
On a scale of 1 - 10 (poor - excellent), please rate the following:

SHORT TERM VALUE
☐ Development of knowledge, skills, and research productivity
Comments
the lab was very well equipped; highly skilled personnel

LONG TERM VALUE
☐ How the NRC Associateship award affected your career to date
Comments
prestigiousness of the tenure invaluable for my new (O-1) visa approval

LAB SUPPORT
☐ Quality of support from the Laboratory--equipment, funding, orientation, safety and health guidelines, etc.
Comments
No problems encountered

ADVISER/MENTOR SUPPORT
☐ Quality of mentoring from the Laboratory NRC Adviser (USMA Mentor, if applicable)
Comments
Never received any better support!

LPR SUPPORT
☐ Quality of administrative support from the Laboratory (e.g., NIST) NRC Program Representative (LPR)
Comments
Very friendly and helpful

NRC SUPPORT
☐ Quality of administrative support (applications, inquiries, post-review, award-related, travel, etc.) from the NRC
Comments
Timely responses and friendly contact

18) PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.

Mail & Delivery Address
NRC Research Associateship Programs
The National Academies
500 Fifth Street NW, 5th Fl. Rm. 568
Washington, DC 20001

THIS FORM SHOULD BE E-MAILED directly to your NRC coordinator
http://www7.national-academies.org/rap

Suggestions for, or problems with, forms should be directed to the forms manager,
Suzanne White, at swhite@nas.edu

ID# 0022960
Rev.01/2007
cost-center #
# Final Report

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

<table>
<thead>
<tr>
<th>1) Associate Last or Family Name</th>
<th>2) Forwarding Address (to which your tax statement will be mailed)</th>
<th>3) Today's Date</th>
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</thead>
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<tr>
<td>Jones</td>
<td>Forwarding Phone(s) and E-Mail (if known)</td>
<td>January 3, 2008</td>
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<tr>
<td></td>
<td>Home Phone: 617-285-0853</td>
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<td>Alt. Phone:</td>
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<tr>
<td></td>
<td>E-mail: <a href="mailto:jones330@gmail.com">jones330@gmail.com</a></td>
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<table>
<thead>
<tr>
<th>4) Agency</th>
<th>5) Name of Laboratory NRC Adviser (and USMA Mentor, if applicable)</th>
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<tbody>
<tr>
<td>AMRMC</td>
<td>Dr. Allen Cyerman</td>
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<tr>
<td>Res. or Inst. Res.</td>
</tr>
<tr>
<td>Street 298 Potter Rd</td>
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<tr>
<td>City, State Zip Framingham MA 01701</td>
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<tr>
<th>2) Today's Date</th>
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<tr>
<td>Date of Tenure</td>
<td>to February 5, 2008</td>
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<tr>
<td>from February 6, 2006</td>
<td>to February 5, 2008</td>
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</table>

## 6) Title of Research Proposal

Effect of erythropoietin administration on the prevention of AMS and cognitive performance deficits in humans ascending to high altitude

## 7) Summary of Research During Tenure

1) Determined that erythropoietin and soluble transferring receptor, measured by enzyme linked immunosorbent assay (ELISA), is not altered after 7 days of intermittent hypoxic exposures.

2) Determined that while cardiac output during submaximal and maximal cycle ergometry is not altered after 7 days of intermittent hypoxic exposure, arterial oxygen saturation is improved.

3) Determined that while sleep quality and quantity are not altered after 7 days of intermittent hypoxic exposure, arterial oxygen saturation is improved.

4) Weapon disassembly/reassembly performance is related to Acute Mountain Sickness but not hypoxemia at 4300 M

5) (USMA Davies Fellow: please add summary of teaching, including classes taught.)

## 8) Research in Progress

During my time at USARIEM I have been involved with the ongoing high altitude studies in which I have learned many techniques in the exercise science field. These new techniques include, VO2 max testing, sub-maximal testing, cognitive performance evaluation, cardiac output and resting ventilation measurements. In the current study I have focused on the effects of intermittent hypoxic exposure on physical performance at 4300m as well as determining if intermittent hypoxic exposure alleviates decrement in sleep at high altitude.

## 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

Julie E. Jones, Michael L. Tapia, Stephen R. Muza, Charles S. Fulco, Beth A. Beideman, and Allen Cyerman.


## 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


12) SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES


13) PROFESSIONAL AWARDs RECEIVED DURING TENURE


14) POST-tenure POSITION / JOB TITLE

Contract Scientist

15) NAME AND ADDRESS OF POST-tenure POSITION / JOB ORGANIZATION

USARIEM, 42 Kansas St. Natick MA 01760

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 USARIEM
☐ 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 RESEARCH ASSOCIATESHIP PROGRAM

On a scale of 1 – 10 (poor - excellent), please rate the following:
SHORT TERM VALUE

8  Development of knowledge, skills, and research productivity
   Comments

LONG TERM VALUE

5  How the NRC Associateship award affected your career to date
   Comments

LAB SUPPORT

9  Quality of support from the Laboratory—equipment, funding, orientation, safety and health guidelines, etc.
   Comments

ADVISER/MENTOR SUPPORT

10 Quality of mentoring from the Laboratory NRC Adviser (USMA Mentor, if applicable)
   Comments

LPR SUPPORT

10 Quality of administrative support from the Laboratory (e.g., NIST) NRC Program Representative (LPR)
   Comments

NRC SUPPORT

10 Quality of administrative support (applications, inquiries, post-review, award-related, travel, etc.) from the NRC
   Comments

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

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

<table>
<thead>
<tr>
<th>Noble</th>
<th>Schroeder</th>
<th>M.I.</th>
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<td>First Name</td>
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**FORWARDING Phone(s) and E-Mail (if known):**
- Home Phone: 919-357-1989
- Alt. Phone: 301-319-9489
- E-mail: schroeder.noble@amedd.army.mil

**Dates of Tenure:**
- from October 3, 2005 to August 17, 2007

**AMRRMC** | **Laboratory or Center** | **WRAIR**
--- | --- | ---
| CPT Donald P. Huddler | Experimental Therapeutics | Division / Directorate / Department

**5) Name of Laboratory NRC Adviser (and USMA Mentor, if applicable):**
- CPT Donald P. Huddler

**6) TITLE OF RESEARCH PROPOSAL:**
- Structural Studies of P.falciparum Hsp90 for the Development of Anti-malarial Therapeutics

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

1) The ATPase domain of S.cerevisiae Hsp90 was crystallized in the presence of the inhibitor Indo3 and preliminary data was collected.

2) We have completed cloning, expression and purification of full-length Plasmodium falciparum Hsp90, ATPase domain PfHsp90, and an ATPase-middle domain fusion construct of PfHsp90.

3) Crystallization trials were started for the PfHsp90 ATPase-middle domain fusion construct.

4) PfHsp90 interaction partners have been identified by using a pull-down assay.

5) An E.coli HTS C142A mutant was crystallized and a complete data set was collected from crystals diffracting to 2.8 Å. (USMA Davies Fellow: please add summary of teaching, including classes taught.)

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

a) Crystallization trials with full-length PfHsp90 and the ATPase domain in the absence and presence of inhibitors are in progress.

b) Crystallization experiments with PfHsp90 and client proteins are in progress.

c) An ATPase assay with purified full-length PfHsp90 in the presence of client proteins will be optimized.

d) Process yHsp90N+Indo3 data and determine the structure

e) Immunopurify PfHsp90 chaperone complex from heat-stressed parasites

f) Process E.coli HTS C142A mutant data and determine the structure

**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

- Identification of catalytic cysteine, histidine, and lysine residues in Escherichia coli homoserine transsuccinylase.

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


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

13) PROFESSIONAL AWARDS RECEIVED DURING TENURE

14) POST-TENURE POSITION TITLE
Research Chemist

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

Walter Reed Army Institute of Research
Division of Biochemistry
503 Robert Grant Ave.
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
☐ 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 RESEARCH ASSOCIATESHIP PROGRAM
On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE:
5 Development of knowledge, skills, and research productivity
Comments

LONG TERM VALUE:
10 How the NRC Associateship award affected your career to date
Comments

LAB SUPPORT:
5 Quality of support from the Laboratory--equipment, funding, orientation, safety and health guidelines, etc.
Comments

ADVISER/MENTOR SUPPORT
10 Quality of mentoring from the Laboratory NRC Adviser (USMA Mentor, if applicable)
Comments

LPR SUPPORT:
5 Quality of administrative support from the Laboratory (e.g., NIST) NRC Program Representative (LPR)
Comments
**NRC SUPPORT**

**10** Quality of administrative support (applications, inquiries, post-review, award-related, travel, etc.) from the NRC

**Comments**

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

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<th>Mail &amp; Delivery Address</th>
<th>THIS FORM SHOULD BE E-MAILED</th>
<th>Suggestions for, or problems with, forms should be directed to the forms manager, Suzanne White, at <a href="mailto:swhite@nas.edu">swhite@nas.edu</a></th>
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<td>NRC Research Associateship Programs</td>
<td>directly to your NRC coordinator</td>
<td><a href="http://www7.national-academies.org/rap">http://www7.national-academies.org/rap</a></td>
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<tr>
<td>The National Academies</td>
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<td></td>
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<tr>
<td>500 Fifth Street NW, 5th Fl. Rm. 568</td>
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<td>Washington, DC 20001</td>
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| ID# | 0508 630   | Rev.01/2007 | cost-center # |
AMCOM
5) Name of Laboratory NRC Adviser (and USMA Mentor, if applicable)
David Lanar

WRAIR
6) TITLE OF RESEARCH PROPOSAL
Characterization of Plasmodium falciparum liver stage antigen LSA1

Malaria Vaccine Development

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

1) Transglutaminase 2 and Casein kinase 2 sites discovered in LSA1 through bioinformatic analysis
2) LSA1 found to be crosslinked by transglutaminase 2 in vitro
3) LSA1 found to be phosphorylated by Casein kinase 2 in vitro
4) LSA1 is identified in vivo using LSA1 specific antibodies in Plasmodium falciparum infected chimeric mice containing functional human livers
5) Transglutaminase 2 cross-linking is identified in Plasmodium falciparum infected chimeric mice containing functional human livers

(USMA Davies Fellow: please add summary of teaching, including classes taught.)

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

An LSA1 knockout plasmodium strain has been obtained and is in the process of being tested to assess the necessity of LSA1 in Plasmodium falciparum liver stage development. We have identified transglutaminase crosslinked LSA1 homologs in mouse malarial agents Plasmodium berghei and Plasmodium yoelii. Analysis of these homologs will yield further information on the role of LSA1.

9) PUBLICATIONS AND PAPERS RESULTING FROM NATIONAL ACADEMIES 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 NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH
Provide titles, inventors, and dates of applications.
Abstract
The initial step in human infection with cerebral malaria is the injection of mosquito born Plasmodium falciparum sporozoites into the bloodstream. The sporozoites rapidly infect hepatocytes of the liver and subsequently undergo liver pre-erythrocytic developmental schizogony to form tens of thousands of merozoites. Shortly after invasion the parasite starts to produce Liver Stage Antigen-1 (LSA1) which is transported into the parasitophorous vacuole space where it forms a flocculent mass of protein. The central region of the LSA1 native protein comprises 86 repeats of a 17 amino acid unit that contains a potential substrate motif for tissue transglutaminase-2 (TG2), an enzyme found in all human tissues and known to be up-regulated in damaged liver. TG2 posttranslationally modifies proteins by formation of inter- and intra-protein crossbridges between glutamine and lysine residues. We have shown that a recombinant LSA1 protein (rLSA1) is cross-linked in vitro by purified recombinant guinea pig TG2. Furthermore, rLSA1 is cross-linked by both cell extracts of a human tissue transglutaminase-2 (hTG2) expressing cell line, and purified recombinant hTG2. In addition, we have studied native LSA1 expression in infected, chimeric mice containing functioning human livers. Co-localization of LSA1 and specific TG2 crosslinking by immunofluorescence was seen using a polyclonal antibody to rLSA1, as well as two different monoclonal antibodies specific to TG2 catalyzed cross-bridges. We hypothesize that the function of P. falciparum LSA1 is to form a protective elastic wall around the developing parasite to shield it from the immune system and/or provide structural integrity to the PV within the dying hepatocyte.
12) **SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES** Include dates, names and locations of seminars.

13) **PROFESSIONAL AWARDS RECEIVED DURING TENURE**
Best cellular biology poster - Xth International Congress of Parasitologist, Abstract 816, Glasgow, United Kingdom

14) **POST-TENURE POSITION TITLE**
Unknown

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

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
- [ ] Research Position at Another US Government Laboratory
- [ ] Administrative Position at US Government Laboratory
- [ ] Research Position at Foreign Government Laboratory

17) **APPRAISAL OF RESEARCH ASSOCIATESHIP PROGRAM**
On a scale of 1 – 10 (poor - excellent), please rate the following:

- **SHORT TERM VALUE**
  - [ ] Development of knowledge, skills, and research productivity
  Comments

- **LONG TERM VALUE**
  - [ ] How the National Academies Associateship award affected your career to date
  Comments

- **LAB SUPPORT**
  - [ ] Quality of support—equipment, funding, orientation, safety and health guidelines, etc.
  Comments

- **ADVISER/MENTOR SUPPORT**
  - [ ] Quality of mentoring from the Lab NRC Adviser (USMA Mentor, if applicable)
  Comments

- **LPR SUPPORT**
  - [ ] Quality administrative support from the LPR
  Comments

- **NRC SUPPORT**
  - [ ] Quality of administrative support from the NRC
  Comments

18) **PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.**
Please address the following issues:

Health insurance cover is minimal at best - suitable for a major accident but not good for day to day medical care. This isn't obvious when an associate first arrives. And a dental program is definitely needed.

It is my understanding that tax forms are required by law to be sent by Jan 31st however every year of my tenure tax forms do not arrive until almost April - this is unacceptable, especially where new NRC fellows do not know the tax system very well and are often tight for funds.

**US Postal Service mailing address**

**THIS FORM SHOULD BE E-MAILED**

**Express Delivery address**
Research Associateship Programs
The National Academies
500 Fifth Street NW
Washington, DC 20001

ID# 0496350

Research Associateship Programs
directly to your NRC coordinator
website
www.national-academies.org/rap

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

Rev. 08/2006
cost-center #
THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine
National Research Council

Research Associateship Programs

FINAL REPORT

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
Ruff

2) FORWARDING Address (to which your tax statement will be mailed)
Res. or Inst. Residence
Street 2831 Meredith Court
City, State Zip Abingdon, MD 21009

3) Today's Date
December 17, 2007

4) Agency
AMRMC

Laboratory or Center
USAMRICD

Division / Directorate / Department
Research

5) Name of Laboratory NRC Adviser (and USMA Mentor, if applicable)
Dr. James Dillman

6) TITLE OF RESEARCH PROPOSAL
Analysis of signal transduction events and application of RNAi (inhibitory RNA) to accelerate therapeutic development for SM-induced cutaneous and ocular injury

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

1) p38 MAP kinase (p38) regulates sulfur mustard-induced cytokine production in normal human keratinocytes (NHEK).

2) NF-κB, though widely implicated, is not involved in sulfur mustard (SM)-induced inflammatory cytokine production by NHEK with the possible exception of a partial role in the stimulation of IL-1β production.

3) p38 regulates SM-induced cytokine production independent of NF-κB and p53 signaling.

4) Inhibition of p53 by inhibitory RNA (RNAi) accelerated SM-induced cell death and phenotypic changes suggesting a possible cell survival role for p53 in SM-exposed NHEK.

5) Inhibition of NF-κB by RNAi delayed SM-induced death and attenuated SM-induced cell phenotypic changes suggesting that NF-κB may play a pro-apoptotic or pro-necrotic role in SM-exposed NHEK.

(USMA Davies Fellow: please add summary of teaching, including classes taught.)

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

The findings described above have led to a new line of research in which the molecular mechanisms of SM injury will be studied in a mouse model of ocular injury (a FY 2008-2010 new start proposal funded by DTRA). This research will focus on the role of IL-6, VEGFA, and TGF-β because these have been shown to play a critical role in corneal vascularization and fibrosis by multiple types of ocular injury. We will also evaluate therapeutic RNAi that has been proven to be effective in treating these corneal pathologies in animal models and appears promising for use in humans.

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
Albert L. Ruff and James F. Dillman III. p38 MAP Kinase Regulates Sulfur Mustard-Induced Cytokine Production Independent of NF-κB and p53 Signaling, but does not Regulate Sulfur-Mustard-Induced Cell Death. Manuscript in preparation

10) PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH
11) PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International
Albert L. Ruff and James F. Dillman III. RNAi Targeted Against p38MAPK Effectively Inhibits Inflammatory Cytokine Production in Sulfur Mustard Injury. Poster presentation at the International Congress of Toxicology XI, 2007, Montreal, Canada

Domestic
Albert L. Ruff and James F. Dillman III. p38 MAP Kinase Regulates Sulfur Mustard-Induced Cytokine Production Independent of NF-kB and p53 Signaling and Does Not regulate SM-Induced Cell Death. Accepted for a posted presentation at the Society of Toxicology 47th Annual Meeting, March 16-20, 2008, Seattle, Washington

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

13) PROFESSIONAL AWARDS RECEIVED DURING TENURE

14) POST-TENURE POSITION / JOB TITLE
Principal Investigator / Research Biologist

15) NAME AND ADDRESS OF POST-TENURE POSITION / JOB ORGANIZATION
USAMRICD
Research Division,
Cell and Molecular Biology Branch
3100 Ricketts Point Road
APG, MD 21010

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
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☐ 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 RESEARCH ASSOCIATESHIP PROGRAM
On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE:
10 Development of knowledge, skills, and research productivity
Comments

LONG TERM VALUE:
10 How the NRC Associateship award affected your career to date
Comments

LAB SUPPORT:
10 Quality of support from the Laboratory--equipment, funding, orientation, safety and health guidelines, etc.
Comments

ADVISER/MENTOR SUPPORT:
10 Quality of mentoring from the Laboratory NRC Adviser (USMA Mentor, if applicable)
Comments

LPR SUPPORT
Quality of administrative support from the Laboratory (e.g., NIST) NRC Program Representative (I.P.R)

Comments

NRC SUPPORT

Quality of administrative support (applications, inquiries, post-review, award-related, travel, etc.) from the NRC

Comments

Some forms could be made more intuitive.

18) PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.

1. Dental insurance - Affordable dental insurance for individuals or families is available through Delta Dental. I would recommend looking at the plans offered by Delta Dental and provide this information to applicants or existing associates.

2. Mortgage issues - Buying a house as an NRC associate can be difficult because given the method by which we are paid, many mortgage companies view associates as being self-employed. It would be helpful if the NRC could find a mortgage company (or companies) that understands our unique pay situation and is willing to work with NRC associates.

Mail & Delivery Address
NRC Research Associateship Programs
The National Academies
500 Fifth Street NW, 5th Fl. Rm. 568
Washington, DC 20001

THIS FORM SHOULD BE E-MAILED
directly to your NRC coordinator
http://www7.national-academies.org/rap

Suggestions for, or problems with, forms should be directed to the forms manager,
Suzanne White, at swhite@nas.edu

ID# 0617840

Rev.01/2007
cost-center #
**FINAL REPORT**

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

<table>
<thead>
<tr>
<th>1) Associate Last or Family Name</th>
<th>First Name</th>
<th>M.I.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swanson</td>
<td>Katherine</td>
<td>I</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>2) FORWARDING Address (to which your tax statement will be mailed)</th>
<th>FORWARDING Phone(s) and E-Mail (if known)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Res. or Inst.</td>
<td>Home Phone: (410) 905-0190</td>
<td></td>
</tr>
<tr>
<td>Street 520 South Ellwood Ave.</td>
<td>Ait. Phone:</td>
<td></td>
</tr>
<tr>
<td>City, State Zip Baltimore, MD 21224</td>
<td>E-mail: <a href="mailto:katherine.swanson@gmail.com">katherine.swanson@gmail.com</a></td>
<td></td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>3) Today's Date</th>
<th>Dates of Tenure to</th>
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<tbody>
<tr>
<td>December 18, 2007</td>
<td>December 31, 2007</td>
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<tr>
<th>4) Agency</th>
<th>Laboratory or Center</th>
<th>Division / Directorate / Department</th>
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<tr>
<td>AMRMC</td>
<td>Laboratory or Center</td>
<td>WRAIR</td>
</tr>
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<td></td>
<td></td>
<td>Entomology</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>5) Name of Laboratory NRC Advisor (and USMA Mentor, if applicable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LTC (P) Russell E. Coleman</td>
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</table>

<table>
<thead>
<tr>
<th>6) TITLE OF RESEARCH PROPOSAL</th>
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<tbody>
<tr>
<td>Determination of Genetic Diversity of Phlebotomine Sand Flies and Leishmania Parasites in Iraq and Afghanistan</td>
</tr>
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<table>
<thead>
<tr>
<th>7) SUMMARY OF RESEARCH DURING TENURE</th>
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</thead>
<tbody>
<tr>
<td>Itemize significant findings in concise form, utilizing key concepts/words.</td>
</tr>
<tr>
<td>1) Sequence analysis of sand fly pools for Leishmania gpi gene fragment yielded mainly L. tarentolae and a non-Leishmania sequence similar to Anopheles gambiae gpi.</td>
</tr>
<tr>
<td>2) Medically-important Leishmania sequences (L. major, L. tropica, L. infantum) were identified from sand fly pools from Iraq and Afghanistan. In addition, a sequence similar to both L. major and L. tropica was identified.</td>
</tr>
<tr>
<td>3) Confirmatory sequencing for Leishmania using the internal transcribed spacer (ITS) fragment was unsuccessful due to variations within the sequence. However, Leishmania was detected through PCR for the ITS fragment.</td>
</tr>
<tr>
<td>4) Working through a CRADA with Human Genetic Signatures, INA Technology has been utilized to develop blocking primers for the non-Leishmania sequences in order to determine whether Leishmania sequences can be obtained from the samples.</td>
</tr>
<tr>
<td>5) A fragment of the cytochrome c oxidase I was amplified from sand fly genomic DNA for the identification of sand fly species using a combination of real-time PCR with SYBR Green and Melting Curve Analysis.</td>
</tr>
<tr>
<td>(USMA Davies Fellow: please add summary of teaching, including classes taught.)</td>
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<tr>
<td>N/A</td>
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<tr>
<th>8) RESEARCH IN PROGRESS</th>
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<tr>
<td>Describe in no more than 100 words.</td>
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</table>

| Relying on the genetic diversity in the COI gene reported by other researchers, the current research has aimed to differentiate eight sand fly species using real-time PCR and melting curve analysis. Using published primers, the COI fragment was amplified and sequenced in order to design primers more appropriate for real-time PCR. The intercalating dye SYBR Green is used for detection of double-stranded DNA prior to melting curve analysis. The melting temperature of each species should differ based on the DNA sequence, allowing for species identification. The results have shown that two New World species of sand flies tested cannot be identified with this assay; however, the assay does show promise in differentiating between 6 Old World species from Phlebotomus spp. and Sergentomyia spp. |

<table>
<thead>
<tr>
<th>9) PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH</th>
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<tbody>
<tr>
<td>Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.</td>
</tr>
<tr>
<td>a) Publications in peer-reviewed journals</td>
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<td>N/A</td>
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<tr>
<td>b) Books, book chapters, other publications</td>
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<td>N/A</td>
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<tr>
<td>c) Manuscripts in preparation, manuscripts submitted</td>
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</tbody>
</table>


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


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) POST-TENURE POSITION / JOB TITLE

Technology Transfer Liaison

15) NAME AND ADDRESS OF POST-TENURE POSITION / JOB ORGANIZATION

Henry M. Jackson Foundation
1401 Rockville Pike, Suite 600
Rockville, MD 20852

16) POST-TENURE POSITION STATUS / CATEGORY

☐ 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 RESEARCH ASSOCIATESHIP PROGRAM

On a scale of 1 - 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

☐ Development of knowledge, skills, and research productivity
Comments
I was able to work independently but also collaborated with other researchers in government labs and industry which allowed for development opportunities.

LONG TERM VALUE

☐ How the NRC Associateship award affected your career to date
Comments
Due to my Associateship, I have been able to complete a postdoctoral fellowship. At the same time, I learned about and developed an interest in technology transfer, leading to my next position.

LAB SUPPORT

☐ Quality of support from the Laboratory—equipment, funding, orientation, safety and health guidelines, etc.
Comments
I was provided with more than adequate funding which allowed me to obtain all equipment and reagents I needed. I did tend to "fall between the cracks" when it came to some of the general aspects of being part of a research group since I did not "fit" into anyone's research section.

ADVISER/MENTOR SUPPORT
Quality of mentoring from the Laboratory NRC Adviser (USMA Mentor, if applicable)
Comments
Although LTC Coleman was always busy as the Division Director, he would make the time to meet with me or at least check in through email. It was more difficult in the last 6 months to have guidance due to his TDY.

LPR SUPPORT
Quality of administrative support from the Laboratory (e.g., NIST) NRC Program Representative (LPR)
Comments
Dr. Rothman has always been available for questions and approvals when they have been needed.

NRC SUPPORT
Quality of administrative support (applications, inquiries, post-review, award-related, travel, etc.) from the NRC
Comments
The administrative support from the NRC has been great. It would be helpful to have alternate contact information for individuals when they are away for an extended period of time.

18) PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.

Mail & Delivery Address
NRC Research Associateship Programs
The National Academies
500 Fifth Street NW, 5th Fl. Rm. 568
Washington, DC 20001

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http://www7.national-academies.org/rap

Suggestions for, or problems with, forms should be directed to the forms manager, Suzanne White, at swhite@nas.edu

ID# 0507850

Rev.01/2007

cost-center #
TAKHAMPUNYA

2) FORWARDING Address (to which your tax statement will be mailed)
Res. or Inst. Twin Towers
Street 1110 Fiddler Ln., Apt.923
City, State Zip/Silver Spring, MD 20910

RATREE

FORWARDING Phone(s) and E-Mail (if known)
Home Phone: 301-256-5944
Alt. Phone: -
E-mail: ttakham@yahoo.com

5) Name of Laboratory NRC Adviser (and USMA Mentor, if applicable)
Maj. Dr. Chun Lin Zhang

6) TITLE OF RESEARCH PROPOSAL
IDENTIFY THE GENETIC VARIATION OF PREDOMINANT VERSUS NON-PREDOMINANT GENOTYPE OF DENGUE VIRUS THAT CORRELATE WITH INTERFERON (IFN)-RESPONSE ANTAGONISING/CELL-BINDING INHIBITION IN HUMAN DENDRITIC CELLS

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

1) The binding capability of Dengue virus (DEN) serotype 1-4 to the DCSIGN receptor on Raji cells between 8 Dengue fever (DF) strains and 10 dengue hemorrhagic fever (DHF) strains has no significant different.

2) The Dengue virus predominant strains trend to bind to DCSIGN receptor on Raji cells better than non-predominant strains.

3) Within DEN-1 the binding and internalization abilities of DHF strain (ThD1-0323/91) and DF strain (ThD1-0488/94) to human Dendritic cells (3 donors) has no significant different when compare the amount of virus bound to receptors on human DCs.

4) Studying the replication rates of 18 isolates of DEN in human DCs cells, we found that DHF strains replicate more efficient than DF strains when compare the production of virus titer from human DCs (3-5 donors) at 48 hr post-infection.

5) (USMA Davies Fellow: please add summary of teaching, including classes taught.)
N/A

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

As the replication of Dengue virus type 1-4 isolated from DHF patients replicate efficiently in human DCs cells more than viruses isolated from DF patients. One possible mechanism is that DHF viruses are capable of resistance to the immune response which DCs cells produce to counteract the viral pathogens. At present, the ability of DHF strains resistance to the innate immune response using Interferon type 1 (IFN-I) treatment is testing in human hepatoma cell line (Huh-7 and Huh-7b), where Huh-7b has a defective IFN signaling pathway. Then the activated IFN-I signaling factor (Jak-Tyk2, Stat1) will be monitored in DHF- and DF-infected cells using Immunoblot assay. The binding affinity of predominant and non-predominant viruses will be compared to see whether predominant strain binds more strong to receptor than non-predominant strain.

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
The manuscript is in preparation.
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.  
N/A

13) **PROFESSIONAL AWARDS RECEIVED DURING TENURE**  
N/A

14) **POST-TENURE POSITION / JOB TITLE**  
Postdoctoral research at Georgetown University

15) **NAME AND ADDRESS OF POST-TENURE POSITION / ORGANIZATION**  
Department of Microbiology & Immunology  
Georgetown University Medical Center  
3900 Reservoir Road  
Washington DC 20057

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  
- [ ] 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 RESEARCH ASSOCIATESHIP PROGRAM**  
On a scale of 1 – 10 (poor - excellent), please rate the following:  

**SHORT TERM VALUE**  
\[8\] Development of knowledge, skills, and research productivity  
Comments  
I have gained more research skills and experiences on Immunology work with Dr. Dupeh Palmer and she is the one who has contributed most of scientific discussions to this project.

**LONG TERM VALUE**  
\[9\] How the NRC Associateship award affected your career to date  
Comments  
Open my career opportunity to meet and discuss the research problems with other scientists and cooperate with other laboratories.

**LAB SUPPORT**  
\[6\] Quality of support from the Laboratory--equipment, funding, orientation, safety and health guidelines, etc.  
Comments  
There is some problem with funding which slow down the research work sometimes. Moreover, the department laboratory considers the clinical research more important than basic research.

**ADVISER/MENTOR SUPPORT**  
\[7\] Quality of mentoring from the Laboratory NRC Adviser (USMA Mentor, if applicable)  
Comments  
Advisor doesn’t have much time for this project, since there are lots of administrative works for her.

**LPR SUPPORT**  
\[10\] Quality of administrative support from the Laboratory (e.g., NIST) NRC Program Representative (LPR)
LPR was very efficient of problem solving when there was a problem happened to NRC fellow and laboratory sponsor.

**NRC SUPPORT**

10  Quality of administrative support (applications, inquiries, post-review, award-related, travel, etc.) from the NRC

Comments

Very quick response with any inquiry, application and traveling processes.

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

Mail & Delivery Address

NRC Research Associateship Programs
The National Academies
500 Fifth Street NW, 5th Fl. Rm. 568
Washington, DC 20001

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ID# 0621820  Rev. 01/2007  cost-center #
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

2) FORWARDING Address (to which your tax statement will be mailed)
   Res. or Inst.
   Street 1933 Commonwealth Avenue, Apt 108
   City, State Zip Brighton, MA 02135

3) Today's Date
   September 7, 2007

FORWARDING Phone(s) and E-Mail (if known)

4) Agency  Laboratory or Center  Division / Directorate / Department
   AMRMC  WRAIR  MCR

5) Name of Laboratory NRC Adviser (and USMA Mentor, if applicable)
   Dr. George C. Tsokos

6) TITLE OF RESEARCH PROPOSAL
   Effect of decay accelerating factor (DAF) treatment and B cell depletion on local and remote ischemia-reperfusion injury in mice

7) SUMMARY OF RESEARCH DURING TENURE
   Itemize significant findings in concise form, utilizing key concepts/words.
   1) DAF and ischemia-reperfusion injury: DAF treatment after ischemia and prior to reperfusion attenuates remote IR injury in mice in both hindlimb and mesenteric ischemia models
   2) B cell depletion and ischemia-reperfusion injury: experiments in progress
   3)
   4)
   5)

8) RESEARCH IN PROGRESS
   Much of my time during the past six months was spent preparing my manuscript revision for publication in Clinical Immunology. This entailed more data analysis in answer to reviewer questions. Research in progress includes determination of alternative methods of B cell depletion using commercially available mice with B cell defects, as human B cell receptor transgenic mice obtained from Genentech after much legal discussion died and were not able to breed to carry out originally planned B cell experiments. We are currently working on alternative methods to delineate the population of B cells responsible for initiation of ischemia-reperfusion injury in an attempt to further target therapy to these populations. There is also continued work on decay accelerating factor (DAF) in larger animal models (rats rather than mice) which appears to bear out my published findings that remote IR injury is reduced following DAF treatment after ischemic insult and prior to reperfusion.

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
      Decay-accelerating factor attenuates remote ischemia-reperfusion-initiated organ damage.
   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
12) SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES Include dates, names and locations of seminars.

13) PROFESSIONAL AWARDS RECEIVED DURING TENURE

14) POST-TENURE POSITION TITLE
   surgical resident

15) POST-TENURE ORGANIZATION Provide name and address of organization.
   Brigham and Women’s Hospital
   Department of Surgery
   75 Francis Street
   Boston, MA 02115

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 _______
   □ 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 resident

17) APPRAISAL OF RESEARCH ASSOCIATESHIP PROGRAM
   On a scale of 1 – 10 (poor - excellent), please rate the following:

   SHORT TERM VALUE
   10 Development of knowledge, skills, and research productivity
   Comments
   This fellowship was extremely valuable in providing me with the background knowledge and skills to be productive in scientific research. It familiarized me with the critical components of research productivity, so that I can pursue both clinical and research interests when I finish surgical training.

   LONG TERM VALUE
   10 How the NRC Associateship award affected your career to date
   Comments
   This fellowship made me aware of and appreciative of the effort, time, and quality research involved in preparation of a scientific paper for submission to an esteemed journal.

   LAB SUPPORT
   10 Quality of support--equipment, funding, orientation, safety and health guidelines, etc.
   Comments
   The lab I worked in provided EXCELLENT quality of support--both training and equipment/funding.

   ADVISER/MENTOR SUPPORT
   10 Quality of mentoring from the Lab NRC Adviser (USMA Mentor, if applicable)
   Comments
   I cannot say enough about what a fantastic mentor Dr. George Tsokos of WRAIR was to me, or express in words how much I learned from his outstanding research. He provided incredible guidance and support during my tenure as a NRC fellow. Because of him, I am a much better researcher and a much more critical reader of the literature.

   LPR SUPPORT
   10 Quality administrative support from the Agency/Lab NRC Program Representative (LPR)
   Comments
   Dr. Rothman was always available when I needed her assistance, and was terrific to work with.

   NRC SUPPORT
   10 Quality of administrative support from the NRC
   Comments
   Assistance from the NRC with questions and travel claims was excellent.

18) PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.
This form should be e-mailed directly to your NRC coordinator.

http://www7.national-academies.org/rap

Suggestions for, or problems with, forms should be directed to the forms manager, Suzanne White, at swhite@nas.edu
### FINAL REPORT

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 | Wilson |
| 2) FORWARDING Address (for tax statement / final stipend check) | PO Box 3174 |
|               | Hagerstown, MD 21741-3174 |
| 3) Today's Date | April 3, 2007 |
| 4) Agency | AMRMC |
| Laboratory or Center | TATRC |
| Division / Branch / Department | |

| First Name | Paul |
| FORWARDING Phone(s) and E-Mail (if known) | A. |
| Home phone: | (240) 422-7856 |
| Alt. phone: | (240) 422-7857 |
| E-mail: | paul_a_wilson@mac.com |
| 5) NAME OF RESEARCH ADVISER (and USMA Mentor, if applicable) | Nela Zavaljevski |
| 6) TITLE OF RESEARCH PROPOSAL | High Throughput Prediction of Globular and Transmembrane Protein Domains from Sequence |
| 7) SUMMARY OF RESEARCH DURING TENURE | Itemize significant findings in concise form, utilizing key concepts/words. |
| 1) | 80% of PPRODO scores 0.7 or higher predict protein structural domain boundaries correctly (within 15 residues). |
| 2) | A software tool for easily creating custom parallel software pipelines was developed. |
| 3) | The software tool provides good speed up for up to the maximum number of tested processors - 256. |
| 4) | 479 E. Choli. K12 protein-protein interactions are found in both Prolinks and DIP interaction networks. |
| 5) | Prolinks database not useful for developing an interaction network for E Coli K12 (USMA Davies Fellow: please add summary of teaching, including classes taught.) |

| 8) RESEARCH IN PROGRESS | Describe in no more than 100 words. |
| The protein structural domain boundary prediction program PPRODO was tested using a set of 10,040 proteins assembled from 4,868 single structural domain proteins and 5,172 multi domain proteins. From this it was determined that 80% of PPRODO scores above 0.70 were within 15 residues of the actual structural domain boundary as defined by the NCBI's Molecular Modeling Database. To accomplish this work a software tool was developed to easily create custom parallel software pipelines. My research efforts were shifted to systems biology and testing the validity of Prolinks derived protein interaction networks. |

9) i

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

13) **PROFESSIONAL AWARDS RECEIVED DURING TENURE**

14) **POST-TENURE POSITION TITLE**
   
   Post Doc

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

   Johns Hopkins University
   Baltimore

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
   - [ ] Research/Teaching at US College/University
   - [ ] Research/Teaching at Foreign College/University
   - [ ] Research/Administration in Industry
   - [ ] Research/Admin in Non-Profit Organization
   - [X] Postdoctoral Research
   - [ ] Self Employed
   - [ ] Other: specify __________________________
17) APPRAISAL OF NRC RESEARCH ASSOCIATESHIP PROGRAM

On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE
1  Development of knowledge, skills, and research productivity
   Comments
   Post doctoral position was similar to a temporary position in industry, where a company tries you out. This was not an
   environment for learning or developing skills. If one arrives with the skills being sought, then they will be moved into a
   permanent position.

LONG TERM VALUE
7  How the National Academies Associateship award affected your career to date
   Comments
   Due to being located in Maryland, it was easier to interview for local postdoctoral opportunities.

LAB SUPPORT
1  Quality of support--equipment, funding, orientation, safety and health guidelines, etc.
   Comments
   I did not receive an orientation at BHSAI, Fort Detrick. I had to figure everything out on my own. I did receive a Dell
   Laptop with MS Office installed. However, zero software required by my research was installed and the official stance is
   we are not allowed to install any software.

ADVISER/MENTOR SUPPORT
2  Quality of mentoring from the Lab NRC Adviser (USMA Mentor, if applicable)
   Comments
   She can be nice, but seems overwhelmed by her work load. She enables sexism in the workplace. Her expertise is in
   nuclear physics and my postdoc was in bioinformatics and parallel computing. She made an effort to let me know that
   everything was indeed my fault.

LPR SUPPORT
1  Quality administrative support from the LPR
   Comments
   The LPR was belittling. The LPR offered zero support. I do not trust the LPR. Due to the actions of the LPR, the
   BHSAI has an extremely high turnover rate. The LPR switched me from my funded project in protein structural
   domain prediction to a system biology project.

NRC SUPPORT
8  Quality of administrative support from the NRC
   Comments
   I felt on my own, until near the end of my associateship. Then it became apparent that a lot of support is available if I
   were to have sought it.

18) PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.

Do not spend tax dollars on the BHSAI/BIC. Provide a level of proof that when there are problems, postdocs can
confide in the NRC. Fund only opportunities at larger institutes, so post docs can interact, receive career advice...
Being stuck, on your own, in an unsupportive environment is bad.