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14. ABSTRACT During this reporting period, the NRC promoted research opportunities at AMRMC institutes through a broad outreach plan. A total of 12 applications were received during the period and of these, 10 were reviewed by NRC panels. 8 awards were offered and all 8 were accepted. A total of 13 Associates ended their tenure during the reporting period and of these 9 submitted a final report. The productivity of these Associates is listed in the technical report.					
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During the reporting period, the National Academies of Sciences, Engineering, and Medicine (the Academies) NRC conducted the following activities in support of the subject contract:

Outreach and Promotion

The promotional schedule to advertise the NRC Research Associateship Programs included the following: 1) attendance at meetings of major scientific and engineering professional societies; 2) advertising in programs and career centers for these and other professional society meetings; 3) direct mailing and emailing of announcements and program materials 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; 4) posting announcements on internet job sites, electronic newsletters and professional society websites; 5) print advertising in high profile publications (e.g., Science magazine, the Chronicle of Higher Education); and, 6) maintaining a presence on social media sites such as Facebook.

The Academies attended a number of minority focused events in which we maintained exhibit booths, participated in workshops and advertised in meeting literature, newsletters and websites or submitted materials for distribution. In addition, ads were placed in a variety of minority publications (e.g., Affirmative Action, Black Collegian).

In advertising the Research Opportunities available to prospective applicants, the Academies maintained an up-to-date listing of all active Research Advisers, current Adviser contact information and details of each Research Opportunity.

Processing and Review of Applications

Applications to the Research Associateship Programs were submitted via a web-based application system. Each application cycle opened two months prior to the application deadline. Academies staff provided support to prospective applicants including providing application instructions, technical support and additional information as requested.

A summary of applications for the reporting period is shown in Table 1.

For each applicant, the Academies received and processed an application form, a research proposal, transcripts, a statement of previous and current research, and confidential reference reports. An application file check was made prior to the review and each applicant was notified if required documents were missing.

The Academies convened panels in five broad discipline areas for the competitive review of applications in the NRC Research Associateship Programs. Results of the review were made available to Laboratory Program Representatives immediately following the conclusion of the each review.

A summary of the outcome of the review of applications for the reporting period is shown in Table 1.

Administration of Awards

The Academies made awards to applicants based on sponsor authorization. A summary of awards authorized and the acceptance or declination by the applicant during the current reporting period is shown in Table 1.

For NRC Research Associates beginning or continuing tenure, the Academies provided the administrative functions described in the contract Statement of Work. These functions included stipend payments,

management of a major medical benefits insurance program, and reimbursement for relocation and travel to professional meetings.

A summary of NRC Research Associates on tenure during the reporting period is shown in Table 2.

Outcomes Reporting

All NRC Research Associates who completed tenure were requested to submit a final report that described the outcome of their Research Associateship award. A summary of the activities of NRC Research Associates who submitted final reports during this reporting period, including publications, presentations and patents, as well as an assessment of their experience in the program, are summarized in Table 3. Specific accomplishments of NRC Research Associates completing tenure during the reporting period are summarized in individual Final Reports (attached to annual technical reports).

Table 1. Summary of applications and awards

Table 2. NRC Research Associates on tenure during the reporting period

Table 3. Activities of NRC Research Associates who completed tenure during the reporting period

AMRMC - U.S. Army Medical Research & Materiel Command

Table 1: Summary of applications and awards

	Applications			Lab Decision/Outcome		
	Submitted	Reviewed	Recommended	Awards Offered	Awards Accepted	No Offer
May 2012	8	7	7	7	7	0
Aug 2012	15	14	14	9	9	5
Nov 2012	6	4	4	2	2	0
Feb 2013	10	8	8	5	5	3
May 2013	1	1	1	1	1	0
Aug 2013	7	6	6	6	6	0
Nov 2013	8	3	3	1	1	2
Feb 2014	4	4	4	1	1	3
May 2014	6	5	5	3	3	2
Aug 2014	9	6	5	3	3	1
Nov 2014	5	4	4	3	2	1
Feb 2015	7	7	7	4	4	1
May 2015	3	2	2	2	2	0
Aug 2015	4	3	3	3	3	0
Nov 2015	1	1	1	1	1	0
Feb 2016	4	4	4	2	2	0
May 2016	6	6	6	6	5	0
Aug 2016	3	3	3	3	2	0
Nov 2016	4	4	4	4	4	0
Feb 2017	4	3	3	3	3	0
May 2017	5	5	5	1	1	0
Aug 2017	6	6	6	4	3	0
Nov 2017	3	2	2	2	2	0
Feb 2018	5	5	5	2	2	0
Total (All Reviews)	134	113	112	78	74	18

Table 2: NRC Research Associates on tenure during the reporting period

Associate	Adviser	Tenure Dates	Final Report
U.S. Army Institute of Surgical Research			
Benov, Avi	Darlington, Daniel Norman	8/1/2014-7/31/2015	Not Recv'd
Burdette, Alexander Justin	Alvarez, Rene	10/1/2012-8/26/2013	Not Recv'd
Chen, Guojun	Devore, David I	8/8/2011-5/14/2012	Received
Cheppudira, Bopaiah Pooviah	Christy, Robert John	9/4/2012-6/18/2017	Received
Childers, Brandon Michael	Leung, Kai P	7/11/2011-12/31/2012	Not Recv'd
Choi, Jae hyek	Wang, Heuy-Ching H.	11/15/2011-11/14/2015	Not Recv'd
Flagg, Shannon Coates	Alvarez, Rene	5/14/2012-5/13/2013	Received
Greene, Whitney Ann	Wang, Heuy-Ching H.	4/25/2012-10/24/2017	Received
Holt, Andrew Whyte	Wang, Heuy-Ching H.	2/13/2017-5/31/2017	Received
Hurtgen, Brady Joe	Wenke, Joseph C	12/3/2012-9/18/2014	Received
Kaini, Ramesh Raj	Wang, Heuy-Ching H.	1/3/2013-1/2/2016	Received
Karna, Sai Lakshmi Rajasekhar	Leung, Kai P	4/1/2013-4/13/2017	Received
Kreyer, Stefan Franz Xaver	Batchinsky, Andriy I	12/7/2012-5/31/2014	Received
Langer, Thomas	Cancio, Leopoldo C.	8/29/2011-11/28/2012	Received
Meledeo, Michael Adam	Bowman, Phillip Dalton	3/1/2010-7/6/2012	Received
Miller, Christine Lindsay	Leung, Kai P	2/4/2013-2/3/2016	Received
Muniz, Alberto	Wang, Heuy-Ching H.	10/14/2008-1/13/2014	Received
Nguyen, Jesse Quoc	Leung, Kai P	3/1/2017-2/28/2019	
Nyland, Jennifer Elaine	Clifford, John L	2/1/2013-12/31/2014	Received
Olekson, Melissa Ann	Leung, Kai P	9/2/2014-9/1/2016	Received
Parida, Bijaya Kumar	Dubick, Michael A.	3/19/2012-9/18/2016	Received
Penn, Alexander Hayes	Torres Filho, Ivo P	1/14/2015-5/14/2017	Received
Pilia, Marcello	Rathbone, Christopher R	9/4/2012-2/6/2015	Received
Rose, Lloyd Frederick	Leung, Kai P	11/1/2012-10/2/2015	Received
Salas, Margaux Marie	Clifford, John L	10/10/2012-10/1/2015	Received
Samberg, Meghan	Christy, Robert John	10/1/2012-12/31/2013	Received
Sanchez, Carlos Jose	Wenke, Joseph C	9/7/2011-9/6/2014	Received
Scaravilli, Vittorio	Batchinsky, Andriy I	11/15/2012-3/14/2014	Received
Schneider Herrera, Bruno	Leung, Kai P	5/1/2012-7/31/2013	Received
Sosanya, Natasha	Christy, Robert John	4/20/2015-4/19/2018	
Torres, Luciana Neves	Dubick, Michael A.	5/18/2011-8/17/2012	Received
Van Laar, Tricia Annette	Leung, Kai P	4/9/2012-7/29/2015	Received
Vecchi, Vittoria	Cancio, Leopoldo C.	11/14/2011-10/22/2012	Received
Ward, Catherine Lindsey	Wenke, Joseph C	8/22/2011-9/4/2014	Received
U.S. Army Medical Research Institute of Chemical Defense			
Beske, Phillip Howard	McNutt, Patrick Michael	8/29/2013-5/16/2017	Received
Hubbard, Kyle	McNutt, Patrick Michael	6/1/2012-5/31/2015	Received
Wong, Benjamin Jay	Sciuto, Alfred Mario	2/7/2011-9/4/2012	Received
Yego, E Chepchumba Koech	Dillman, James F.	9/1/2010-7/5/2013	Not Recv'd
U.S. Army Medical Research Institute of Infectious Diseases			
Andrews, Elizabeth Susanne	Turell, Michael J	5/13/2013-2/26/2016	Received
Arnold, Catherine Elizabeth	Palacios, Gustavo F	9/22/2017-9/21/2018	
Bachert, Beth Alexandra	Bozue, Joel A	1/3/2017-1/2/2018	Received
Bernhards, Robert Cory	Welkos, Susan Lee	7/11/2013-4/29/2016	Received
Bixler, Sandra Lynn	Goff, Arthur James	8/18/2014-11/25/2016	Received
Bounds, Callie Elizabeth	Schmaljohn, Connie	3/1/2011-2/28/2014	Not Recv'd
Brocato, Rebecca Lee	Hooper, Jay W.	1/19/2011-3/13/2013	Received
Coate, Eric Allan	Bozue, Joel A	12/30/2015-2/8/2018	Received
Cohen, Courtney Alicia	Glass, Pamela J	7/28/2014-7/31/2016	Received

Copeland, Anna Maria	Schmaljohn, Connie	1/18/2011-1/17/2014	Received
DeLaine-Elias, BreOnna C.	Palacios, Gustavo F	3/1/2017-4/13/2018	
DeWald, Lisa Marie	Glass, Pamela J	5/7/2012-5/6/2015	Not Recv'd
Duy, Janice	Minogue, Timothy Devins	8/1/2013-2/28/2018	Received
Espy, Nicole Joy	Palacios, Gustavo F	10/2/2017-10/1/2018	
Friedrich, Brian Michael	Hensley, Lisa E.	8/1/2011-6/18/2014	Not Recv'd
Gardner, Christina Lynn	Glass, Pamela J	10/10/2017-10/9/2018	
Haddow, Andrew Douglas	Turell, Michael J	4/15/2014-11/30/2014	Received
Harrell, William Ayers	Smith, Leonard Alan	3/29/2011-3/28/2015	Not Recv'd
Heffron, Jared David	Welkos, Susan Lee	8/16/2010-3/15/2013	Received
Hollidge, Bradley Sherman	Schmaljohn, Connie	5/2/2016-9/30/2017	Received
Huse, Valerie	Minogue, Timothy Devins	9/29/2014-7/29/2016	Received
Johnston, Sara Christine	Goff, Arthur James	3/25/2009-5/1/2012	Received
Kohler, Lara Juliette	Cote, Christopher Kevin	1/17/2017-10/6/2017	Received
Krishnamurthy, Malathy	Panchal, Rekha G.	10/5/2015-10/4/2018	
Kwilas, Steven Alexander	Hooper, Jay W.	4/13/2010-3/31/2014	Received
Lindquist, Michael Edward	Schmaljohn, Connie	3/1/2011-1/15/2014	Received
Maes, Piet	Hooper, Jay W.	12/3/2012-6/2/2014	Received
Maxson, Tucker	Minogue, Timothy Devins	2/1/2017-1/31/2019	
Mielech, Anna Maria	Ulrich, Robert Glenn	2/2/2016-2/1/2019	
Morazzani, Elaine Marie	Glass, Pamela J	12/1/2011-1/31/2014	Received
O'Hearn, Aileen E	Schoepp, Randal J.	4/1/2013-3/31/2016	Received
Rahman, Md. Mizanur	Ahmed, Syed Ashraf	3/1/2011-10/5/2014	Received
Ricks, Keersten Michelle	Schoepp, Randal J.	12/7/2015-12/6/2017	Received
Shoemaker, Charles Jason	Schmaljohn, Connie	2/3/2014-2/2/2017	Received
Smith, Jessica L	Ulrich, Robert Glenn	6/24/2013-6/23/2018	
Stefan, Christopher Patrick	Minogue, Timothy Devins	1/2/2014-1/1/2018	Received
Stojadinovic, Marija	Panchal, Rekha G.	12/1/2014-11/30/2018	
Stonier, Spencer William	Dye, John Michael	8/1/2011-6/30/2014	Received
Suschak, John Joseph	Schmaljohn, Connie	5/1/2017-4/30/2018	
Trefry, John Christopher	Honko, Anna Nichole	7/1/2011-9/23/2013	Received
Tursiella, Melissa Lynne	Schmaljohn, Connie	4/1/2014-3/31/2019	
Zeng, Xiankun	Sun, Mei Guo	5/4/2015-7/31/2016	Received
Walter Reed Army Institute of Research, Silver Spring			
Abente, Eugenio	Bodhidatta, Ladaporn	9/17/2012-7/31/2013	Received
Anderson, Margery Diane	Yourick, Debra Lynn	3/11/2014-3/10/2019	
Bailey, Zachary Stephen	Leung, Lai Yee	8/21/2017-8/20/2018	
Barasa, Sheila Ogoma	Mancuso, James D	5/5/2015-9/4/2017	Not Recv'd
Boutte, Angela	Dave, Jitendra R.	6/15/2011-1/14/2013	Received
Brager, Allison J	Capaldi, Vincent F	7/18/2016-3/13/2017	Received
Brown, Holly Kay	Yourick, Debra Lynn	1/18/2018-1/17/2019	
Caudle, Krista Layne	Tortella, Frank Casper	1/28/2013-7/13/2014	Received
Crivat, Georgeta	Angov, Evelina	5/16/2016-6/25/2017	Received
DeDominicis, Kristen Elizabeth	Boutte, Angela M	9/8/2015-3/31/2017	Received
Kobylinski, Kevin Conrad	Davidson, Silas Andrew	10/17/2011-4/16/2017	Received
Kuehn, Emily Denise	Yourick, Debra Lynn	11/14/2016- 11/13/2018	
Leung, Lai Yee	Tortella, Frank Casper	2/16/2010-12/31/2012	Received
Linton, Yvonne-Marie	Clark, Jeffrey William	10/3/2011-10/2/2016	Not Recv'd
Mantua, Janna	Capaldi, Vincent F	1/2/2018-1/1/2019	
Margulieux, Katie Rose	Swierczewski, Brett Edward	8/4/2016-8/3/2018	
McCoy, Margaret Ellen	Lanar, David Ervin	7/27/2009-10/4/2012	Received
McCracken, Michael Kevin	Jarman, Richard George	3/9/2015-6/8/2018	
McDermott, Emily Gray	Garver, Lindsey Susannah	1/9/2017-1/8/2019	
Melendrez, Melanie Crystal	Jarman, Richard George	3/22/2010-5/21/2012	Received
Moore, Nicole LT	Genovese, Raymond F.	7/29/2010-2/24/2014	Received
Mountney, Andrea	Tortella, Frank Casper	11/15/2010-2/28/2013	Received

Mutihac, Radu	Balkin, Thomas J.	3/1/2011-2/28/2013		Not Recv'd
Pichard, Luis Eduardo	Balkin, Thomas J.	7/24/2012-3/31/2016		Not Recv'd
Pichugin, Alexander Vladimirovich	Krzych, Urszula	1/12/2009-7/11/2012		Received
Pollett, Simon	Jarman, Richard George	6/27/2016-3/31/2018		
Rajendran, Gnana Ravi	Kozar, Michael Patrick	9/7/2010-8/31/2012		Received
Rossetti, Franco	Yourick, Debra Lynn	6/1/2009-5/31/2013		Received
Sambanthamoorthy, Karthik	Wagar, Eric James	3/1/2011-2/28/2015		Not Recv'd
Simonelli, Guido	Capaldi, Vincent F	10/6/2014-10/5/2018		
Taylor, Rachel Marie	Moore, Nicole L.T.	5/15/2017-5/14/2019		
Tenenbaum, Laura Subbiah	Yourick, Debra Lynn	6/3/2013-2/28/2018		Received
Thangavelu, Bharani	Boutte, Angela M	9/21/2017-9/20/2018		
Waickman, Adam Tully	Currier, Jeffrey R	10/30/2017- 10/29/2018		
Yoon, K. Lira	Quartana, Phillip J	1/3/2013-1/2/2014		Received
Zarling, Stasya Nicole	Krzych, Urszula	2/7/2011-5/15/2016		Received

Table 3: Activities of NRC Research Associates who completed tenure during the reporting period

- 90 Associates ended tenure during the report period
- 30 months was the average tenure length
- 66 months was the longest
- 3 months was the shortest
- 76 submitted final reports

In the final reports, Associates indicated the following scholarly activity while on tenure.

- 207 Articles published in refereed journals
- 18 Articles other (Proceedings, Book Chapters, other)
- 255 Domestic presentations
- 47 International presentations
- 4 Patent applications
- 37 Awards

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

- 3 Permanent position at the NRC host agency
- 31 Contract or temporary position at the NRC host agency
- 9 Research/administrative position with another U.S. government agency
- 1 Research/administrative position with foreign government agency
- 5 Research/teaching at US college/university
- 5 Research/teaching position at a foreign college or university
- 4 Research/administrative position in private industry in the U.S.
- 0 Research/administrative position in private industry outside of the U.S.
- 3 Research/administrative position with a non-profit
- 0 Self-employed/consulting
- 4 Postdoctoral Research
- 7 Other
- 4 No information provided

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:

- 8.6 Short-term value (lab)-Development of knowledge, skills, and research productivity at lab
- 8.7 Long-term value (career)-How your Research Associateship affected your career to date
- 8.7 Laboratory Support-Equipment, funding, orientation, safety & health training, etc.
- 8.6 Adviser Mentoring-Quality of mentoring from the Research Adviser
- 8.8 LPR Support-Quality of administrative support from the LPR
- 9.3 NRC Support-Quality of administrative support from the NRC