2016 Armament Systems Forum

“Shaping the Armament Enterprise to Meet Evolving Global Requirements”

Featuring:
- Small Arms Systems
- Guns, Ammunition, Rockets and Missile Systems
- Unconventional Emerging Technology Armament Systems

April 25-28, 2016
WWW.NDIA.ORG/MEETINGS/6610
FREDERICKSBURG, VA
EVENT #6610
### Tutorial Sessions

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<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker</th>
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<tr>
<td>1:00 PM - 2:15 PM</td>
<td>JCIDS: How It Drives Acquisition of Armament Systems and Influences Armament Science &amp; Technology Investment</td>
<td><em>Mr. Edward Dooley, U.S. Army ARDEC</em></td>
</tr>
<tr>
<td></td>
<td>Roadblocks to Success: Lessons Learned from Science &amp; Technology Project Management</td>
<td><em>Mr. Mark Serben, U.S. Army ARDEC</em></td>
</tr>
</tbody>
</table>
POSTER PRESENTATIONS

Small Caliber Structural Launch and Projectile Dynamics Modeling using Explicit Finite Element Analysis (18354)
► Mr. Michael Cataldi, *U.S. Army ARDEC*

Corrosive Effects of At-Sea Conditions on Caliber .50 Munitions (18264)
► Ms. Connie Lusto, *U.S. Army ARDEC*

Enhancing Operational Performance of Legacy Small Arms—A Case Study (18274)
► Mr. Nick Pugliese, *Ace Electronics Defense Systems*

Advanced Small Arms Ballistic System (ASABS) (18381)
► Mr. Gerard Gaeta, *U.S. Army ARDEC*

Vented Erosion Simulator (VES) (18393)
► Mr. Adam Foltz, *U.S. Army ARDEC*

Effects of Primer Leakers on Weapon Systems (18306)
► Mr. Thomas Gmyrek, *U.S. Army ARDEC*

The Innovation Dilemma: Accelerating the Move from Problem to Solution While Maintaining Weapon Performance (18394)
► Mr. Douglas Witkowski, *U.S. Army ARDEC*

Quantitative Analysis of Large-Scale Explosive Testing Using Background Oriented Schlieren (18287)
► Dr. Kelley Weiland, *NSWC Dahlgren*

Multiple Degree of Freedom Vibration Testing: The Future of Vibration Testing (18310)
► Dr. Luke Martin, *NSWC Dahlgren*

Small Arms Weapon Integration on the V-22 Osprey Ramp (18346)
► Mr. James Buechler, *NSWC Crane*
TUESDAY, APRIL 26, 2016

7:00 AM - 6:30 PM  Registration Open

7:00 AM - 8:00 AM  Networking Breakfast - Exhibit Hall

8:00 AM - 8:05 AM  Administrative Announcements
  ▶ Mr. Brian Berger, President, Wilcox Industries Corp; Chairman, Small Arms Committee

8:05 AM - 8:35 AM  Pushing Capability Down, Not Up - Soldier/Squad Overmatch
  ▶ BG David Grange, USA (Ret), Osprey Global Solutions, LLC

8:35 AM - 9:10 AM  Awards Presentation
  
  Chinn Award
  ▶ Presented by Mr. Dan Shea
  ▶ Presented to Dr. Phil “Doc” Dater
  
  Hathcock Award
  ▶ Presented by Mr. Sal Fanelli
  ▶ Presented to Mr. Hays Parks

9:10 AM - 10:15 AM  USMC PM Infantry Weapons Panel
  Moderator: Col Michael Manning, USMC, Marine Corps Systems Command
  Panelists:
  ▶ LtCol Martin Lewis, USMC, Infantry Weapons, Marine Corps Systems Command
  ▶ LtCol Antonio Scoffield, USMC, Optics and Non-Leathal Weapons, Marine Corps Systems Command
  ▶ Mr. James Nelson, Raids and Reconnaissance, Marine Corps Systems Command
  ▶ LtCol Robert Bailey, USMC, Infantry Combat Equipment, Marine Corps Systems Command
  ▶ Mr. William Vorhies, Anti-Armor, Marine Corps Systems Command

10:15 AM - 10:45 AM  Networking Break - Exhibit Hall

10:45 AM - 12:00 PM  Wounds Ballistic Testing Panel
  Moderator: Mr. Jim Schatz
  Panelists:
  ▶ A Eulogy: Col Martin L. Fackler, MC, USA (Ret), His Contributions to Modern Wound Ballistics, Mr. Hays Parks
  ▶ Tissue Damage Tool for Industry, Mr. Mark Minisi, Technology Branch, Small and Medium Caliber Weapons Systems Division, ARDEC
  ▶ NATO Position on 20 vs 10%, Mr. Scott Reeve, UK Defence Science and Technology Laboratory
  ▶ FBI Position on 10% vs 20%, SSA Scott Patterson, FBI Ballistic Research Facility

12:00 PM - 1:30 PM  Luncheon - Exhibit Hall
  NDIA Welcome and Armament Division Update
  ▶ Mr. Dave Broden, President, Broden Resource Solutions, LLC; NDIA Armament Division Chair

  Role of MCOTEA in Testing of Small Arms
  ▶ Col Mark Brinkman, USMC, Director, Marine Corps Operational Test & Evaluation Activity
2016 ARMAMENT SYSTEMS FORUM
AGENDA
BALLROOM D

SMALL ARMS FORUM

1:30 PM - 3:00 PM
PM Soldier Weapons Panel
Moderator: COL Brian Stehle, USA, PM Soldier Weapons
Panelists:
» LTC Paul Alessio, USA, Product Manager, Crew Served Weapons
» Ms. Barbara Muldowney, Product Manager, Soldier Weapons

3:00 PM - 3:30 PM
Networking Break - Exhibit Hall

3:30 PM - 5:00 PM
PM MAS Panel
Session Chair: COL Moises Gutierrez, USA, Product Manager, Maneuver Ammunition Systems
Panelists:
» Mr. Christopher Seacord, Product Manager, Maneuver Ammunition Systems
» LTC John Masternak, USA, Product Manager, Maneuver Ammunition Systems

5:00 PM - 6:30 PM
Networking Reception

5:15 PM
Mandatory Demonstrator Meeting - Exhibit Hall Entrance

WEDNESDAY, APRIL 27, 2016

7:00 AM - 4:30 PM
Registration Open

7:00 AM - 8:00 AM
Networking Breakfast - Exhibit Hall

8:00 AM - 8:15 AM
Administrative Announcements
» Mr. Brian Berger, President, Wilcox Industries Corp; Chairman, Small Arms Committee

8:15 AM - 8:45 AM
Speaker
» Mr. Dan Shea, General Director, Phoenix Defense/Small Arms Defense Journal

8:45 AM - 10:10 AM
JSSAST Panel
Moderator: Mr. Augustine Funcasta, U.S. Army, RDECOM-ARDEC
Panelists:
» COL Kurt “Travis” Thompson, USA, Soldier Requirements Division
» Mr. Christopher Woodburn, USMC, Capabilities Development Directorate
» LtCol Enrico Venditti, USAF, U.S. Air Force Security Forces Center
» Mr. Craig LaMudge, U.S Coast Guard
» Mr. Charles Zeller, NSWC Crane

10:10 AM - 10:40 AM
Networking Break - Exhibit Hall

10:40 AM - 12:00 PM
JSSAP Session
Session Chair: Mr. Augustine Funcasta, U.S. Army, RDECOM-ARDEC

10:40 AM - 11:00 AM JSSAP Science and Technology Advisory Council (18268)
» Dr. Bart Halpern, U.S. Army ARDEC

11:00 AM - 11:20 AM Active Stabilization of Firearms by Optical Target Tracking (18314)
» Mr. Terence Rice, U.S. Army ARDEC
WEDNESDAY, APRIL 27, 2016 CONTINUED

11:20 AM - 11:40 AM Cased Telescoped Systems: 6.5mm Carbine and 7.62mm Machine Gun (18325)
   ▶ Ms. Kori Phillips, U.S. Army ARDEC

11:40 AM - 12:00 PM Future Advanced Squad Technologies (FAST) (18299)
   ▶ Mr. Daniel Cler, U.S. Army ARDEC

12:00 PM - 1:00 PM Networking Luncheon - Exhibit Hall
   Division Award Presentation and Comments
   ▶ Mr. Kevin Fahey

1:00 PM - 1:40 PM NATO Weapons and Sensors Working Group Panel Discussion
   Moderator: Dr. Bart Halpern, U.S. Army ARDEC
   Panelists:
   ▶ Mr. Michael Tauber, U.S. Army ARDEC
   ▶ Mr. Scott Reeve, UK Defence Science and Technology Laboratory
   ▶ Mr. Sal Fanelli, U.S. Marine Corps Systems Command
   ▶ Mr. David Long, NSWC Crane
   ▶ Dr. David Dye, NSWC Crane
   ▶ Mr. Adam Jacob, U.S. Army ARDEC

1:40 PM - 3:00 PM Weapons
   Session Chair: Mr. David Long, NSWC Crane
   1:40 PM - 2:00 PM Dragon Scales (18217)
      ▶ Dr. Gary Glaspell, USACE-ERDC
   2:00 PM - 2:20 PM Next Generation Small Unit Weapon Systems – A Path to Overmatch (18260)
      ▶ Mr. Jim Schatz
   2:20 PM - 2:40 PM America’s Foot Soldiers New Round (18261)
      ▶ BG David Grange, USA (Ret), Osprey Global Solutions, LLC
   2:40 PM - 3:00 PM Low Plasticity Burnishing for Fatigue Life Extension of the M4A1 Carbine Bolt (18263)
      ▶ Mr. Thomas Grego, U.S. Army ARDEC

3:00 PM - 3:30 PM Networking Break

3:30 PM - 4:30 PM Weapons Continued
   Session Chair: Mr. David Long, NSWC Crane
   3:30 PM - 3:50 PM A John Browning View of the U.S. Small Arms Industry (18278)
      ▶ Mr. George Kontis, Gun IQ International, LLC
   3:50 PM - 4:10 PM MK 48 MOD 1 Machine Gun - Sustained Fire Upgrade (18355)
      ▶ Mr. David Armstrong, NSWC Crane
   4:10 PM - 4:30 PM Light Weight .338 Medium Machine Gun System Development (18356)
      ▶ Mr. Erik Gudmenson, General Dynamics OTS

4:30 PM Adjourn
# SMALL ARMS FORUM

**THURSDAY, APRIL 28, 2016**

7:00 AM - 12:00 PM   Registration Open
7:00 AM - 8:00 AM   Networking Breakfast
8:00 AM - 12:00 PM   Concurrent Sessions

<table>
<thead>
<tr>
<th>Time</th>
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## Ammunition

**Session Chair:** Mr. Bruce Webb, NAMMO

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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>7:40 AM</td>
<td>18283 — 5.56mm Proof Load Development (How to Ruin A Perfectly Good Weapon) Mr. Chris Gandy, U.S. Army ARDEC</td>
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<tr>
<td>8:00 AM</td>
<td>18266 — Small Caliber Reduced Range Technology Ms. Lina Norum, Nammo Vanasverken</td>
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<tr>
<td>8:20 AM</td>
<td>18298 — One-Way Luminescence (OWL) Technical Achievements Mr. Matthew Horch, U.S. Army ARDEC</td>
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<tr>
<td>9:00 AM</td>
<td>18326 — Rheinmetall’s 12.7mm x 99 (0.50) Frangible Armor Piercing Ammunition Mr. Brian Sullivan, American Rheinmetall Munitions, Inc.</td>
</tr>
<tr>
<td>9:20 AM</td>
<td>18369 — .50 Caliber Lightweight System Solution Mr. Kim Dahl, Nammo Raufoss AS</td>
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## Test and Evaluation

**Session Chair:** MGySgt Charles Buxton, USMC (Ret)

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<tr>
<td>8:00 AM</td>
<td>18374 — How Industry Can Leverage the Resources of NSWC Crane for Small Arms Weapons Development Dr. Mark Thoreson, NSWC Crane</td>
</tr>
<tr>
<td>8:20 AM</td>
<td>18357 — Development of Standardized Test Methods for Quantitative Small Arms Flash Measurements Dr. David Dye, NSWC Crane</td>
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## Fire Control and Ancillary Equipment

**Session Chair:** MGySgt Charles Buxton, USMC (Ret)

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<tr>
<td>9:00 AM</td>
<td>18371 — Development of Next Generation Small Arms Weapons Fire Control System Dr. Ben Bachrach, Intelligent Automation, Inc.</td>
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<tr>
<td>9:20 AM</td>
<td>18389 — Advancing Achievable Small Arms Fire Control Technology for Increased Warfighter Effectiveness Mr. Robert Guarasi, Wilcox Industries Corp</td>
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9:40 AM - 10:00 AM   Networking Break

10:00 AM - 12:00 PM   Weapon Suppression

**Session Chair:** Mr. Jason Davis, NSWC Crane

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<tr>
<td>11:20 AM</td>
<td>18293 — The Use of Finite Element Analysis in the Design of a Light Weight Cartridge Case Mr. Raymond Chaplin, U.S. Army ARDEC</td>
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11:40 AM - 12:00 PM   Concluding Remarks and Depart for Technology Demonstration
2016 ARMAMENT SYSTEMS FORUM
AGENDA
BALLROOM B

2016 ARMAMENT SYSTEMS FORUM
AGENDA
BALLROOM B

TUESDAY, APRIL 26, 2016

7:00 AM - 6:30 PM    Registration Open
7:00 AM - 8:00 AM    Networking Breakfast - Exhibit Hall
8:00 AM - 8:10 AM    Welcome and Administrative Announcements
                     ▶ Mr. Matt Solverson, Director, Medium Caliber Ammunition Marketing and Business Development, General Dynamics Ordnance and Tactical Systems; Chair, GARM Committee
                     ▶ Mr. Dan Hartman, Director, Business Development, Spectra Technologies, LLC; Chair, UEA Committee
8:10 AM - 8:50 AM    U.S. Army Keynote Speaker
                     ▶ Mr. Jim Shields, PEO Ammunition
8:50 AM - 9:30 AM    ARDEC Keynote Speaker
                     ▶ Mr. John F. Hedderich III, Director, ARDEC
9:30 AM - 9:50 AM    ARDEC’s Science and Technology Strategic Plan
                     ▶ Mr. Joe Pelino, U.S. Army ARDEC
9:50 AM - 10:20 AM   Is Now the Time for a High-Energy Laser Weapon Program of Record? (18375)
                     ▶ Mr. David Kiel, Directed Energy Warfare Office
10:20 AM - 10:40 AM  Networking Break - Exhibit Hall
10:40 AM - 11:00 AM  JNLWD’s S&T Investments and Capabilities Gaps
                     ▶ Mr. David Law, JNLWD Chief Scientist
11:00 AM - 11:30 AM  DOTC Enterprise Overview
                     ▶ Mr. Don Geiss, DOTC Program Office
11:30 AM - 12:00 PM  NDIA Government Policy Update
                     Mr. James Thomas, Director, Legislative Policy, NDIA
12:00 PM - 1:30 PM   Networking Luncheon - Exhibit Hall
                     NDIA Welcome and Armament Division Update
                     ▶ Mr. Dave Broden, President, Broden Resource Solutions, LLC; NDIA Armament Division Chair
                     Role of MCOTEA in Testing of Small Arms
                     ▶ Col Mark Brinkman, USMC, Director, Marine Corps Operational Test & Evaluation Activity
GARM FORUM

TUESDAY, APRIL 26, 2016 CONTINUED

1:30 PM - 2:00 PM    JCIDS Discussion
   ▶ COL Darrell Wilson, USA, Chief, Joint Requirements and Assessments Division
   Headquarters Department of the Army, G-8 Force Development, Pentagon

2:00 PM - 4:00 PM    Armament Systems Session Continued
   Session Chairs: Mr. Joe Buzzett, GD-OTS
                   Mr. John Altrichter, BAE Systems

   2:00 PM - 2:20 PM 30mm Stryker Lethality Upgrade
      ▶ LTC Jason T oepfer, USA, Stryker Brigade Combat Team

   2:20 PM - 2:40 PM Cluster Munition Replacement for 155mm Artillery (18578)
      ▶ Mr. Ryan Gorman, U.S. Army

   2:40 PM - 3:00 PM Commander’s Independent Weapon Station Demonstrator (18254)
      ▶ Mr. Dirk Jungquist, BAE Systems

   3:00 PM - 3:20 PM Networking Break - Exhibit Hall

   3:20 PM - 3:40 PM Options for Light/Medium AFV Gun Armament (18258)
      ▶ Mr. Anthony Williams, IHS Jane’s Weapons

   3:40 PM - 4:00 PM 40mm Case Telescoped Armament System (18360)
      ▶ Mr. David Coughtrie, CTA International

3:40 PM - 4:00 PM    Direct and Indirect Fire Guns Session
   Session Chair: Mr. Howie Wendt, NSWC Dahlgren
                   Mr. Steve Piper, Piper Pacific International

   4:00 PM - 4:20 PM Benefits of an Active Recoil Control System (18296)
      ▶ Mr. Joshua Stapp, U.S. Army ARDEC

   4:20 PM - 4:40 PM Use of SmCo T550 Magnetic Materials on Weapon Applications at
                   High Temperature (18333)
      ▶ Mr. Steven Sadowski, U.S. Army ARDEC

   4:40 PM - 5:00 PM Electronic Gun Tag for Artillery Systems (18292)
      ▶ Mr. Anthony Cannone, U.S. Army ARDEC

4:40 PM - 5:00 PM    Networking Reception - Exhibit Hall

5:00 PM - 6:30 PM

5:15 PM    Mandatory Demonstrator Meeting - Exhibit Hall Entrance
WEDNESDAY, APRIL 27, 2016

7:00 AM - 4:30 PM  
Registration Open

7:00 AM - 8:00 AM  
Networking Breakfast - Exhibit Hall

8:00 AM - 8:05 AM  
Administrative Announcements

8:00 AM - 8:05 AM  
Mr. Matt Solverson, Director, Medium Caliber Ammunition Marketing and Business Development, General Dynamics Ordnance and Tactical Systems; Chair, GARM Committee

8:05 AM - 8:40 AM  
Ground Combat Systems Keynote Speaker

8:05 AM - 8:40 AM  
BG David Bassett, USA, PEO Ground Combat Systems

8:40 AM - 9:15 AM  
TARDEC Keynote Speaker

8:40 AM - 9:15 AM  
Dr. Paul Rogers, TARDEC

9:15 AM - 10:10 AM  
S&T Needs and Gaps - How to Better Communicate - Panel Discussion

Moderator: Mr. Dave Broden, President, Broden Resource Solutions, LLC; NDIA Armaments Division Chair

Panelists:

Mr. Joe Pelino, U.S. Army ARDEC
Mr. Mike Till, NSWC Dahlgren
Mr. Joe Buzzett, General Dynamics-OTS

10:10 AM - 10:40 AM  
Networking Break - Exhibit Hall

10:40 AM - 12:00 PM  
Ammunition Session

Session Chairs: Mr. Mark Serben, U.S. Army ARDEC  
Ms. Shelly Uzpen, Orbital ATK

10:40 AM - 11:00 AM  
Moving Target Artillery Round (MTAR) (18280)

10:40 AM - 11:00 AM  
Mr. Sanford Steelman, NSWC Dahlgren

11:00 AM - 11:20 AM  
40mm EAPS Gun ATO Integrated Demonstration vs. Class 2 UAS (18295)

11:00 AM - 11:20 AM  
Mr. Manfredi Luciano, U.S. Army ARDEC

11:20 AM - 11:40 AM  
40mm PGU-47/U SAPHEI-T Cartridge Qualification Status Presentation (18320)

11:20 AM - 11:40 AM  
Mr. Jim McConkie, NSWC Dahlgren

11:40 AM - 12:00 PM  
25mm APEX Ammunition

11:40 AM - 12:00 PM  
Mr. Jan Hasslid, Nammo Raufoss AS

12:00 PM - 1:00 PM  
Networking Luncheon - Exhibit Hall  
Division Award Presentation and Comments

12:00 PM - 1:00 PM  
Mr. Kevin Fahey
1:20 PM - 2:00 PM  
**Ammunition Session Continued**

Session Chairs: Mr. Mark Serben, *U.S. Army ARDEC*  
Ms. Shelly Uzpen, *Orbital ATK*

- **1:20 PM - 1:40 PM Raytheon’s Excalibur N5: Redefining Naval Gunfire (18409)**
  - Mr. Ryan Pafferoth, *Raytheon Company*

- **1:40 PM - 2:00 PM 40mm HV Airburst Revolution (18373)**
  - Mr. Helge Stadheim, *Nammo Raufoss AS*

2:00 PM - 2:40 PM  
**Mortars Session**

Session Chairs: Mr. Jeff Siewert, *Arrow Tech*  
Mr. Ralph Tillinghast, *U.S. Army ARDEC*

- **2:00 PM - 2:20 PM Mortar Ammunition Across The Globe (18259)**
  - Mr. Anthony Williams, *IHS Jane's Weapons*

- **2:20 PM - 2:40 PM Advanced Capability Extended Range Mortar (ACERM) (18279)**
  - Mr. Sanford Steelman, *NSWC Dahlgren*

2:40 PM - 3:00 PM  
**Awards Presentation**

*Triffiletti Award*

- Presented to Mr. Jim McConkie

3:00 PM - 3:30 PM  
**Networking Break**

3:30 PM - 4:30 PM  
**Mortars Session Continued**

Session Chairs: Mr. Jeff Siewert, *Arrow Tech*  
Mr. Ralph Tillinghast, *U.S. Army ARDEC*

- **3:30 PM - 3:50 PM Use of Security Overlays or Control Sets in Addressing Control Deviations for Mortar Systems (18424)**
  - Mr. Daniel Campbell, *U.S. Army ARDEC*

- **3:50 PM - 4:10 PM 60mm and 81mm Non-Lethal (18311)**
  - Mr. Bryan Drake, *U.S. Army ARDEC*

- **4:10 PM - 4:30 PM The Future of Rocket Artillery**
  - Mr. Paul Turner, *Precision Fires Rocket & Missile Systems Project Office*

4:30 PM  
**Adjourn**
# 2016 Armament Systems Forum

## Agenda

**Ballroom B**

**Thursday, April 28, 2016**

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### Fire Control Session

Session Chairs: Mr. Mike Pattison, Meggitt Defense Systems and Ms. Lisa Brown, Orbital ATK

<table>
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<th>Time</th>
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</table>
| 8:00 AM| 18334 — Utilizing Low Cost Sensors on Mortar Platforms for Fire Control Applications  
Mr. Ralph Tillinghast, *U.S. Army ARDEC* |
|        | 8:20 AM                                                                |
|        | 18262 — Minimalist Foreign Artillery Digitization                      
Mr. David Musgrave, *U.S. Army ARDEC* |
|        | 8:40 AM                                                                |
|        | 18275 — An Analysis of the Visual Automated Scoring System Performance During Live Gunfire Events  
Dr. Chris Weiland, *NSWCDD* |

### Modeling, Simulation, and Testing Session

Session Chairs: Mr. Richard Cadille, Kistler and Enrico Mutascio, Esterline Defense Technologies

**U.S. Citizens Only**

Session Chairs: Mr. Mark Serben, *U.S. Army ARDEC* and Mr. Darrel Morris, Systima Technologies, Inc.

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| 9:30 AM| 18253 — Pointing Accuracy Analysis for a Commander’s Independent Weapon Station Demonstrator  
Mr. Dirk Jungquist, *BAE Systems* |
| 9:50 AM| 18291 — Automatic Hit Detection System for Real-Time Target Hit Feedback  
Mr. Daniel Holden, *NSWC Dahlgren* |
| 10:10 AM | 18297 — Projectile Soft Recovery Facility  
Mr. James Fetsko, *NSWC Dahlgren* |
| 10:30 AM | 18313 — High Speed High Dynamic Range Video  
Mr. David Griffiths, *NSWC Dahlgren* |
| 10:50 AM | 18319 — Flight Modeling and Simulation Capabilities for Gun and Mortar Systems  
Mr. Kishore Pamadi, *NSWC Dahlgren* |

### U.S. Citizens Only

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| 9:50 AM | 18579 — Counter Unmanned Aerial Systems (CUAS)  
Mr. Hannibal People, *U.S. Army RDECOM ARDEC* |
| 10:10 AM | 18290 — Evaluation of Delivery Performance for Non-Impact Munitions  
Mr. Tomas Bober, *Picatinny Arsenal* |
| 10:30 AM | 18336 — 120mm Mortar System; A Synopsis of Extended Range Technologies Maturation Efforts  
Mr. Ryan Hooke, *U.S. Army ARDEC* |
| 10:50 AM | 18327 — Analytical Approach to Quantifying Pressure Vessel Loads as a Function of Cartridge Case-to-Chamber Clearance and Friction  
Mr. Patrick Barnhill, *Orbital ATK Armament Systems* |

### Concluding Remarks

10:50 AM - 11:00 AM

12:00 PM

Depart for Technology Demonstration
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<td>Systems; Chair, GARM Committee</td>
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<td>- Mr. John F. Hedderich III, Director, ARDEC</td>
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<td>9:30 AM - 9:50 AM</td>
<td>ARDEC’s Science and Technology Strategic Plan</td>
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<td>9:50 AM - 10:20 AM</td>
<td>Is Now the Time for a High-Energy Laser Weapon Program of Record?</td>
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<td>(18375)</td>
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<td>JNLWD’s S&amp;T Investments and Capabilities Gaps</td>
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<td>- Mr. David Law, JNLWD Chief Scientist</td>
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<tr>
<td>11:00 AM - 11:30 AM</td>
<td>DOTC Enterprise Overview</td>
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<td>- Mr. Don Geiss, DOTC Program Office</td>
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<td>11:30 AM - 12:00 PM</td>
<td>NDIA Government Policy Update</td>
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<td>- Mr. James Thomas, Director, Legislative Policy, NDIA</td>
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<td>12:00 PM - 1:30 PM</td>
<td>Networking Luncheon - Exhibit Hall</td>
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<td>NDIA Welcome and Armament Division Update</td>
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<td>- Mr. Dave Broden, President, Broden Resource Solutions, LLC; NDIA</td>
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<td>Armaments Division Chair</td>
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<td>Role of MCOTEA in Testing of Small Arms</td>
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<td>- Col Mark Brinkman, USMC, Director, Marine Corps Operational Test &amp;</td>
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<tr>
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<td>Evaluation Activity</td>
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TUESDAY, APRIL 26, 2016 CONTINUED

1:30 PM - 2:10 PM  Future Concepts for the Next Fight
Session Chair: Mr. Bart Halpern, U.S. Army ARDEC

1:30 PM - 1:50 PM Ultra High Performance Unconventional Frangible, Fragmenting & Explosive Metal Projectile (19363)
► Mr. Howard Kent, Armor Development Group, LLC

1:50 PM - 2:10 PM Future Technologies and Concepts (18399)
► Mr. Ralph Tillinghast, U.S. Army ARDEC

2:10 PM - 3:30 PM  Networking Break - Exhibit Hall

3:30 PM - 4:30 PM  Directed Energy - U.S. CITIZENS ONLY
Session Chair: Mr. David Kiel, NSWC-DD

3:30 PM - 3:50 PM Is Now the Time for a High-Energy Laser Weapon Program of Record? (18375)
► Mr. David Kiel, Directed Energy Warfare Office

3:50 PM - 4:10 PM Radio Frequency Vehicle Stopper (RFVS) Development (18368)
► Dr. Yeong-Jer Chen, NSWC Dahlgren

4:10 PM - 4:30 PM Implementation of Electromagnetic Modeling for Directed Energy Applications (18347)
► Mr. William Catoe, NSWC Dahlgren

4:30 PM - 6:30PM  Networking Reception

5:15 PM  Mandatory Demonstrator Meeting - Exhibit Hall
UES FORUM

WEDNESDAY, APRIL 27, 2016

7:00 AM - 6:30 PM  Registration Open

7:00 AM - 8:00 AM  Networking Breakfast - Exhibit Hall

8:00 AM - 8:20 AM  Administrative Announcements
                  ▶  Mr. Dan Hartman, Director, Business Development, Spectra Technologies, LLC; Chair, UEA Committee

8:20 AM - 10:00 AM  Non-Lethal Technology, Payloads and Effects
                     Session Chair: Mr. David Law, JNLWD Chief Scientist
                     8:20 AM - 8:40 AM  Joint Non-Lethal Weapons Program’s Next-Generation Non-Lethal Directed Energy Weapons and Enabling Technologies Portfolios
                     ▶  Mr. David Law, JNLWD Chief Scientist
                     8:40 AM - 9:00 AM  Anti-Class One Drone & Multi-Purpose 66mm Launch System For The M-4 Carbine (18317)
                     ▶  Mr. Howard Kent, Armor Development Group, LLC
                     9:00 AM - 9:20 AM  NATO Non-Lethal Capabilities Update (18330)
                     ▶  Mr. John Edwards, U.S. Army ARDEC
                     9:20 AM - 9:40 AM  Active Denial Technology (18339)
                     ▶  Mr. Michael Hatfield, NSWC Dahlgren
                     9:40 AM - 10:00 AM  The Next Generation of Light Tactical Vehicle Softkill Protection: Rheinmetall’s Rapid Obscuring Smoke System (18364)
                     ▶  Mr. Brian Sullivan, ARM, Inc.

10:00 AM - 10:40 AM  Networking Break - Exhibit Hall

10:40 AM - 11:40 AM  Sensors and Enabling Technology
                      Session Chair: Mr. Ralph Tillinghast, U.S. Army ARDEC
                      10:40 AM - 11:00 AM  Illumination Warning for Individual Soldiers and Vehicles (18277)
                      ▶  Mr. Howard Kent, Armor Development Group, LLC
                      11:00 AM - 11:20 AM  Architecture and Design of a System to Counter IEDs with Automated Detection and Human in the Loop Decision-Making (18378)
                      ▶  Mr. Jorge Buenfil, U.S. Army ARDEC
                      11:20 AM - 11:40 AM  Using Wall Penetrating Radar and Wireless Signal Location Technology to Control Drones in Structures (18337)
                      ▶  Mr. Howard Kent, Armor Development Group, LLC

11:40 AM - 1:00 PM  Networking Luncheon - Exhibit Hall
                     Division Award Presentation and Comments
                     ▶  Mr. Kevin Fahey
1:00 PM - 2:00 PM

**U.S. Army Research Laboratory**

Session Chair: Mr. Michael Zoltoski, *ARL Weapons and Materials Research Directorate*

1:00 PM - 1:20 PM **Weapons Technology COI**

▸ Mr. Michael Zoltoski, *ARL Weapons and Materials Research Directorate*

1:20 PM - 1:40 PM **Collaborative Cooperative Engagement - Parent Child Concept (18521)**

▸ Dr. Frank Fresconi, *U.S. Army Research Laboratory*

1:40 PM - 2:00 PM **Disruptive Energetics - The Future (18522)**

▸ Dr. Jennifer Ciezak-Jenkins, *U.S. Army Research Laboratory*

2:00 PM

Adjourn
ADDITIONAL AUTHORS

18217 Ms. Colleen Malone
   Mr. Anthony Piccolo
18253 Mr. Dan Youtt
18254 Mr. Roger Nase
18263 Mr. Adam Foltz
18274 COL John Wright, USA (Ret)
18275 Mr. Kevin Murray
18279 Mr. Ben Topper
18280 Mr. Thomas Del Guidice
18283 Mr. Andy Boman
   Mr. Dan Meierhofer
   Mr. Tom Grego
   Mr. Dan Gubernat
18291 Dr. Christopher Weiland
   Mr. John Deasy
18296 Mr. Matthew Tomik
   Mr. William Bartell
   Mr. Philip Wetzel
18297 Mr. James Fetsko
18299 Mr. Keith Koehler
   Mr. Gregory Oberlin
18301 Mr. Gregory Oberlin
18305 Mr. Joseph Garst
18311 Mr. Jason Surmanek
   Mr. Michael Markowitch
   Mr. Francesco Rizzi
18314 Mr. Craig LaMudge
18317 Mr. Dewey Akers
18326 Mr. Brian Sullivan
18333 Mr. Steve Sadowski
   Mr. Ralph Tillinghast
18334 Mr. Steve Sadowski
   Mr. Mike Wright
   Mr. Andrew Yu
18337 Dr. Ram Narayanan
18339 Ms. Melanie Everton
18346 Mr. Glen Dick
18347 Mr. William Catoe
18354 Mr. Wilfredo Ramos
18357 Mr. Jason Davis
18360 Mr. James Baker
   Mr. Patrice Pichot
18368 Dr. John Kile
   Mr. Ryan Mead
18371 Mr. Richard LeBlanc
   Mr. Paul Shipley
18374 Mr. Jason Davis
   Mr. Jacob Sullivan
18378 Mr. Jorge Buenfil
18381 Mr. Domenick Rosato
   Mr. Steve Graham
   Ms. Joan Kimes
   Mr. Mark Sproul
18393 Mr. Stephen Smith
   Mr. Douglas Witowski
18394 Mr. Adam Foltz
   Mr. Christopher Mulligan
18409 Mr. Tyler Krone
18424 Mr. Roy Chrisley
Aimpoint Inc. 301
For over 40 years, Aimpoint has been the world leader in design and manufacture of electronic red-dot sighting systems. Soldier tested and combat proven – don’t settle for anything less.

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Headquartered in Tennessee, Barrett is the world leader in large-caliber rifle design and manufacturing. Our products are used by law enforcement agencies, the United States military and more than 73 State Department approved countries in the world. It’s one thing to manufacture guns, and another to live and breathe them. Whether we’re carefully assembling our latest rifle or increasing the velocity and precision of the ammunition itself - we’re always working for absolute perfection.

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Chemring Ordnance, Inc. 308
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General Dynamics - OTS 302
General Dynamics Ordnance and Tactical Systems manufactures large-, medium- and small-caliber direct and indirect-fire munitions; and is a leader in the development and production of lightweight tactical vehicles, weapons and armament systems. The company also produces propellants and non-lethal and force-protection products. More information about General Dynamics Ordnance and Tactical Systems is available online at www.gd-ots.com.

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