



JNLWP

Second Quarter  
Fiscal Year 2008

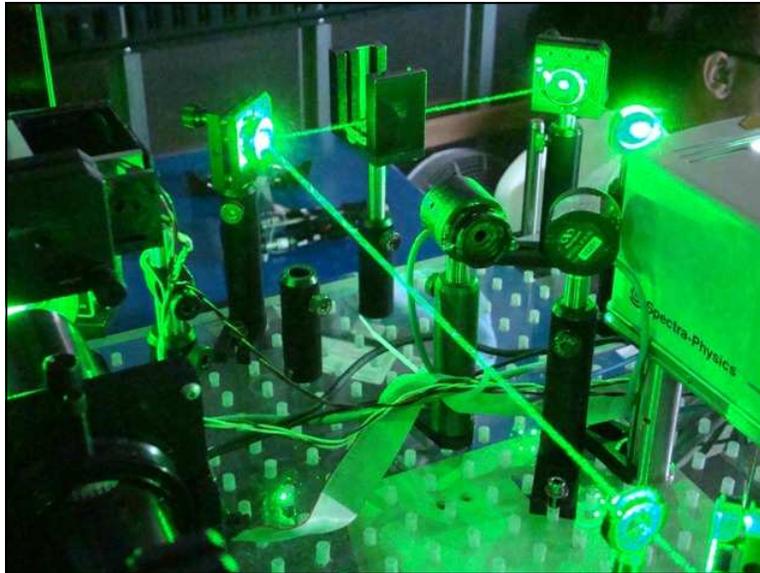


# Joint Non-Lethal Weapons Program Newsletter

Joint Non-Lethal Weapons Directorate  
3097 Range Road, Quantico, Va. 22134  
Phone: 703-784-1977 Fax 703-441-8919  
<https://www.jnlwp.com>



## AFRL engineer earns Eaton Award



**This experimental laser design received recognition from Purdue University**

Air Force 1stLt. Paul La Tour, a research computer engineer with the Optical Radiation Branch, Air Force Research Laboratory at Brooks City-Base, Texas, was named the 2007 recipient of Purdue University's "Eaton Award in Design Excellence" for his work at the lab under the sponsorship of the Joint Non-Lethal Weapons Directorate.

La Tour, a 2005 Purdue graduate, received the award for his participation in the research and development leading to the implementation of laser technology in real world applications for different JNLWD programs. This included the optical defeat of "highly motivated" drivers.

"This glare producing laser system was critical to the [program's] research as it allowed for a constant level of laser energy to be maintained on a subject regardless of their range to the laser," said Carlton Land, JNLWD project engineer responsible for the Optical Warning Distraction and Suppression Program. "This allowed for the evaluation of several different irradiance levels as to their relative target effects."

Cont. on page 2

## IN THIS ISSUE:

EATON AWARD .....	1
HECOE.....	3
EXCELLENCE AWARD.....	4
JCD JNLE APPROVED.....	5
OWDS PROGRAM.....	6
DoD TRAINING.....	7
HAIL AND FAREWELL.....	8

## Calendar of Events

- 28-30 APRIL IFBG MTG
- 2 MAY CONGRESSIONAL-MARINE DAY
- 8 MAY JIPT MEETING
- 20-23 MAY INT'L LAW ENFORCEMENT FOUNDATION FORUM
- 22-23 MAY JIP DEMONSTRATION
- 3-5 JUNE MULTI-AGENCY CRAFT CONFERENCE
- 6-9 JUNE NATO NLW SEMINAR

## AFRL engineer earns Eaton Award (cont.)



The Eaton Awards were established to recognize and encourage excellence in design by students and alumni of Purdue's School of Electrical and Computer Engineering and to honor the faculty members who inspire these graduates. Each year awards are made to young alumni who've graduated within the previous five years and to recognize their early contributions to the field.

La Tour is the first military member to receive this honor. He earned a bachelor of science degree in computer engineering before joining the Air Force in December 2005, and has been with AFRL ever since.

"I feel honored to be awarded this for my efforts in the field of research and design," he said about the recognition by his alma mater.

Although La Tour is the one being recognized by Purdue, it's not without the support of his fellow researchers that the laser project became such a defining point early in this young man's career.

Air Force Capt. Daren Chauvin, chief engineer for the optical radiation branch at AFRL Brooks, was the driving force behind the award nomination, and has played a key role in La Tour's professional development.

"Capt. Chauvin's mentorship was instrumental to a good team cohesion and project success," La Tour said. "We would often discuss possible approaches to problems and after deciding upon a possible solution he would turn me loose to explore the possible avenues. This gave me amazing free reign over many critical design decisions, such as; what software language to integrate all the components and among choice of components which would be most compatible."

"He has demonstrated a rare engineering talent," Chauvin said. "He also came to us with well-developed leadership and project management skills. It was obvious to me that he embodies the characteristics Purdue [was] looking for in this award program."

The work that La Tour and his team completed is also very unique in its design.

"This laser configuration was the first of its kind in combining many existing technologies but applying them a new way," La Tour said. And as a result, the engineers at the AFRL have applied for a patent on their work to protect their invention.

Although the Eaton award is a culmination of months, even years of hard work, for La Tour, it's only part of the "journey the person has to go through" in a lifelong process of education and "a passion for excellence."



**1stLt. Paul La Tour**

La Tour received his Eaton Award April 11 at Purdue University. Chauvin was there, along with La Tour's parents and his girlfriend, Rose Rosli who is a Purdue graduate student in electrical engineering.

## The Human Effects Center of Excellence

Battlefield commanders need options to fill the gap between “shouting and shooting” as part of the escalation of force. One option is the use of non-lethal weapons (NLW). In developing and testing these types of weapons, a significant gap in human effects knowledge was apparent. The leadership at the Joint Non-Lethal Weapons Program recognized this need and in 2001 established the Human Effects Center of Excellence (HECOE) at Brooks City-Base, Texas.

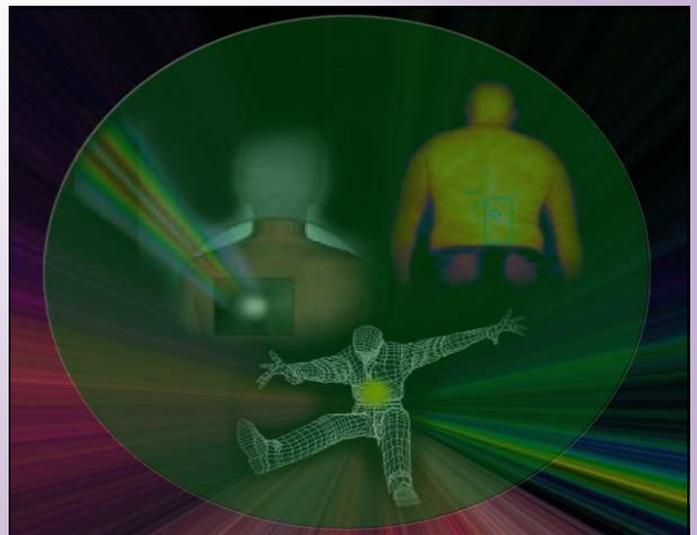
“Its formation was based on two premises: that human effects impacted almost all NLW projects and concentrating human effects resources into one location made both fiscal and organizational sense,” said Jimmy Fleming, Chief of the Biobehavioral Systems Branch, home of the HECOE.

Under the oversight and coordination of the HECOE, non-lethal human effects research is conducted to identify the risk and effectiveness of munitions and technologies. The HECOE also helps identify and collect existing human effects knowledge for a particular weapon system or payload. It then shares this information among human effects researchers, material developers, and NLW operators.

“If the warfighter wants any non-lethal weapon characterized, they come to us. We get the right people to get the job done and get that information to them in a timely manner. We are a ‘one stop shop’,” said Fleming.

The HECOE provides management support to approximately 35 research projects annually. These projects fall into four categories: Directed energy, blunt impact, toxicology, and multi-sensory stimuli. Directed energy projects include the Active Denial System, optical distractors, and Human Electro-Muscular Incapacitation. Fielded systems are the GBDIIC optical distractor and the X-26 TASER®. Blunt Impact research investigated systems such as the Individual Serviceman Non-lethal System FN303, the M1012 and M1013 12-gauge munitions, the M1006 sponge grenade, among others. Recent efforts in toxicology have focused on riot control agents and TigerLight®. Multi-sensory stimuli programs include Airburst Non-Lethal Munition, and Improved Flash-Bang Grenade.

Non-lethal human effects research has proven to be critical to the Department of Defense NLW Program. Non-lethal weapons are only successful if the desired effect is attained and can be transitioned to the warfighter. As the need for NLW increases, the requirements for human effects data and research will also expand. To meet this increasing demand, the HECOE continues to forge relationships with subject matter experts and NLW relevant research organizations both within and external to DoD.



**Human Effects**

## JNLWD Principal Deputy for Policy and Strategy receives 2007 Excellence Award

A small number of people are recognized annually by the Air Force Research Laboratory Human Effectiveness Directorate (AFRL/RH) for significant contributions they make to the directorate throughout the year.

On April 1, Susan LeVine, Principal Deputy for Policy and Strategy, Joint Non-Lethal Weapons Directorate, received the 2007 Excellence Award in a surprise ceremony in Dumfries, Va. Dr. Garrett Polhamus, chief, AFRL Directed Energy Bioeffects Branch, was on hand to present the award.

LeVine was selected for her continual support of the directed energy bioeffects research conducted by the Human Effectiveness Directorate. She has been instrumental in maintaining adequate funding for the Active Denial System bioeffects research, and understands the importance of research in the development of counter-personnel non-lethal weapons. In addition, LeVine's strong advocacy for the use of directed energy as a non-lethal capability was critical to begin developing tactics, techniques and procedures for this unique and revolutionary weapon system. Without her dedicated persistence to secure funding and policy, the technology would not have moved from the laboratory to the development of operational military scenarios.

"Ms. LeVine's support allows us to bring transformational technology complete with an understanding of health, safety, and effectiveness to the warfighter," said Polhamus.

"I was pleased to see the collective efforts of the non-lethal weapons human effects community recognized," LeVine said. She also said it was an honor to be recognized by AFRL, especially for her "contributions to the establishment of [the] processes for characterizing the effects of non-lethal weapons."

LeVine also recognized that this award is a representation of several people's work as part of the ADS research. Contributors to the research included: LtCol. Noel Montgomery, LtCol. Mark Wrobel, Stephanie Miller, Roxanne Constable, and Jimmy Fleming, among others.

"When we established the Joint Non-Lethal Weapons Program in 1996, we essentially started with a blank piece of paper on how to characterize the safety and effectiveness of non-lethal weapons," LeVine explained. "Today we have a robust non-lethal weapons human effects research program as well as an independent review process that maximizes both the safety and effectiveness of these important tools for the warfighter."



**Susan LeVine receives her 2007 Excellence Award from Dr. Garrett Polhamus of the AFRL**

## Joint Capabilities Document for Joint Non-Lethal Effects Approved

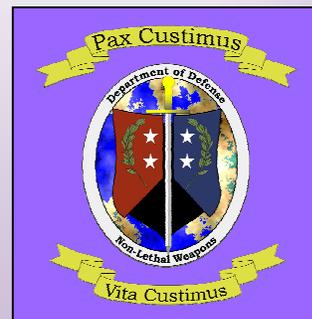
On January 22, the Joint Capabilities Document (JCD) for Joint Non-Lethal Effects (JNLE) was endorsed and approved by the Joint Staff J8, replacing the older outdated Family of Non-Lethal Weapons JCD. Approval of this document culminated a 15 month effort to clearly define the need and requirement for non-lethal weapons throughout the Department of Defense.

The extraordinary effort included representatives from the Joint Staff, all four services, all combatant commands, the Coast Guard, Special Operations Command and Office of the Secretary of Defense. The approved document now serves as the Joint Capabilities Integration Development Systems (JCIDS) capstone document for all DOD related NLWs efforts, providing a solid requirements baseline supporting development of both Joint and Service unique programs of record.

The JCIDS is a process that was established to identify, assess and prioritize joint warfighting needs. Prior to JCIDS, needs were often described in terms of systems or force elements vice capabilities, service focused, not clearly defined, or not prioritized from a Joint perspective. This often resulted in duplication of efforts amongst the services and the warfighter not receiving the needed capability in a timely fashion.

The procedures established in the JCIDS applies to the Joint Staff, services, combatant commands and other Defense agencies, activities and entities when making decisions on producing weapons systems and other capabilities. The JCIDS ensures the joint warfighter has the means to successfully execute assigned missions. Information obtained from the JCIDS process is the primary source supporting the Joint Non-Lethal Weapons Program (JNLWP) resource allocation decisions.

With limited resources, the JNLWP decides where to focus their resources (funds, manpower, etc.) based on the priority of needs identified in the JCIDS documents. This is accomplished through JNLWP's annual program reviews where the Joint Non-Lethal Weapons Directorate staff assesses concepts for future non-lethal weapons (NLW) and NLW currently in development. Priority is given to meeting Joint warfighter needs and the feasibility of NLW reaching production and cost. From this assessment, JNLWP resource allocation decisions are made.



## Optical Warning, Distraction and Suppression Program

The Optical Warning, Distraction and Suppression (OWDS) program was established to develop non-lethal weapons using optical technology that provide the warfighter another capability in the escalation of force.

The devices developed by the OWDS program will be used by warfighters to warn, distract, and suppress potential non-combatants in a variety of scenarios. The devices are intended to warn, confuse or obstruct the vision of the would-be intruders. The reaction of the intruders will be an indicator of their true intentions, and the warfighter will be able to respond with the appropriate level of force.



**OWDS lasers (532nm visible green)**

The Joint Non-Lethal Weapons Directorate hosted a technical summit of the OWDS program on February 8, in Dumfries, Va. The summit was attended by representatives from each branch of the military, the Department of Homeland Security and for a portion of the meeting, manufacturers whose products were being discussed.

A primary focus of the summit was to review the state of the art for non-lethal optical distractors and explore potential “engineering controls” regarding the safety of these devices. Currently, lasers have a minimum safe distance for accidental exposures. Exposures inside the safe distance range may produce injury. The laser safety community is requiring engineering controls that automatically shut off or reduce the output power of lasers should someone enter the safe distance zone. The goal is to create a laser capable of delivering a safe, but effective dose of laser energy to a targeted individual, regardless of their range.



**Optical distractors can warn, confuse, or temporarily obstruct the vision of human targets**

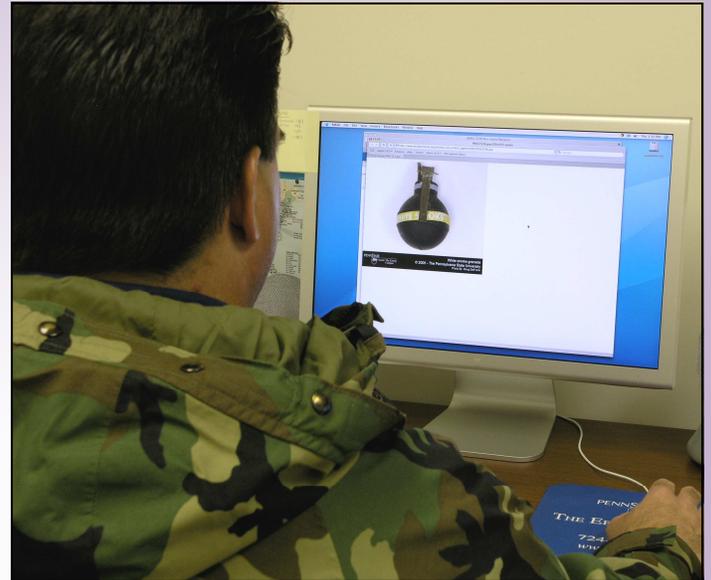
“This summit provided our team with multiple points of contacts throughout Department of Defense that will be invaluable as we move forward on the OWDS project,” said Army Maj. Thomas Aarsen, assistant project manager for Protect Force, Picatinny Arsenal, N.J.

## JNWLD and Penn State work toward better training for DoD members

An effort between the Joint Non-Lethal Weapons Directorate and Penn State's Applied Research Lab and the Center for Community and Public Safety has made available to Department of Defense personnel, both military and civilian, a non-lethal weapons on-line education course.

Active duty and reserve military service members and civilian DoD personnel may take the course free of charge. Although graduates do not receive college credit for the course, they do receive 6.2 Continuing Education Units and a Certificate of Completion from Penn State.

The course, found online at <http://www.nonlethalweaponscourse.com>, provides a general refresher or initial familiarization with the operation of non-lethal weapons and provides in-depth knowledge about the use of these weapons within the context of military operations. This knowledge will equip the student to apply more effectively the tactics, techniques, and procedures associated with each non-lethal technology. Additionally the course offers a lot of information as a refresher to service members looking to advance their non-lethal weapons familiarity.



**Student taking online non-lethal weapons course**

"This course is something all Marines should know about, because we learn a lot about this and always need to do sustainment training," said Marine Staff Sgt. Brent N. Ferrell, an administrative chief at Marine Corps Recruit Depot Parris Island, S.C., and reserve police officer for the Port Royal, S.C., Police Department. "This helps us do our job, because anytime you don't have to use deadly force in your job it helps."

The course recently underwent a third revision. According to Ted A. Mellors, director of the Center for Community and Public Safety, Version 3.0 is "head and shoulders" above prior versions.

"We have greatly enhanced the user interface/navigational tools, added additional videos, audio, simulations and images, and have revised the Advanced and Emerging Technology sections, to name a few of the many advancements," Mellors said. "Advanced and emerging technologies are constantly evolving and are being evaluated for insertion into military arsenals. This process requires constant diligence to identify, collect and assimilate information regarding these advancements."

For information about a hands-on non-lethal weapons course, refer to: <https://www.jnlwp.com/training-edu/training.asp>.

# Hail & Farewell

## *Farewell to:*

**CAPT Ted Lucas, USN  
Joint Capabilities Integration  
Group**

**COL Richard Swengros, USA  
Joint Capabilities Integration  
Group**

**Col Paul Burke, USMC  
Special Operations Command,  
Joint Capabilities Integration  
Group**

**Col Michael Trapp, USAF  
Joint Capabilities Integration  
Group**

**Richard "Duke" Dunnigan  
Special Operations Command,  
Central Action Officer**

## *Hail to:*

**RADM Wayne Justice, USCG  
Joint Integrated Product Team  
Voting Principal**

**Col Alexander Martynenko, USMC  
Joint Capabilities Integration  
Group, Voting Principal**

**MAJ Jeffrey Winegar, USA  
Army Central Action Officer**

**Don Choate  
USCG Program Support Officer**

**Rick Bartis  
COCOM Engagement Officer  
Central Command**

**Phillip McCombs  
US Army Requirements  
Program Support Officer**

**Alicia Owsiak  
JNLWD Technology Division**



# JNLWP

<https://www.jnlwp.com>