

October 25, 2013

# NSSC This Week



Natick Soldier Systems Center Public Affairs Office

*Photo of Sgt. 1st Class Adams: David Kamm, NSRDEC Photographer*

# A Soldier's Perspective

**Inside:** • Cold Facts • Lab Work for 'HEROES'  
• NCO Induction • Special Gift



# Commander's Call

Lt. Col. Brian Greata  
USAG-Natick Garrison Commander

## Happy New Year! Fiscal year, that is ...

I've been searching for additional ways to communicate with the Garrison and Natick Soldier Systems Center workforce about things that will affect us all, and I recently decided to use NSSC This Week as a venue. As I learn of topics of interest that aren't otherwise addressed in all-hands calls or exec mail, I'll take note of them and make sure to touch on them here. The first good news I have for you all, if you haven't already heard, is that we have an incoming Commanding General, Col. (P) William Cole, who will arrive in November. We look forward to welcoming him at that time.

Of course, the biggest thing that we've all just experienced was the turbulence associated with a new fiscal year and the lack of an approved budget or continuing resolution. We're now back to work and know that pay and benefits for furlough days will be retroactive, but all of us were affected by the shutdown to some degree or another. For some, it was uncertainty about whether they would remain furloughed and what that meant to their paychecks; for others, it was unclear how long they would work without pay. All our organizations were affected by reduced manning and productivity.

I appreciate the effects that we've all felt, and the uncertainty we continue to face. Everyone on this installation plays an important role in providing Soldiers, Sailors, Airmen, Marines, Coast Guardsmen, and Special Operators with the very best "stuff" using the latest technology, and/or supporting that important work. I want to thank you for maintaining the flexibility and professionalism you have throughout the shutdown process.

Although at times we may have to deal with externally imposed hardship, internally we should continue to look out for each other. One way to do that is through the prevention of sexual harassment and sexual assault. The installation's Sexual Harassment/Assault Response Program (SHARP) provides 24/7 coverage to deal with these issues. If you have questions about SHARP, have experienced sexual harassment or assault, or know someone who has, please call the installation Sexual Assault Response Coordinator (SARC) or Victim Advocate (VA) at ext. 6925, or the SHARP Hotline at (508) 395-9141. The hotline is continually monitored by the SARC, Installation VA, or Unit VAs.

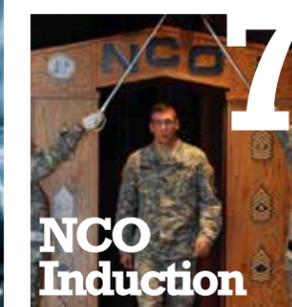
We'll also look out for each other through the Army's Ready and Resilient Campaign (R2C), which the Chief of Staff of the Army recently tasked IMCOM to implement across every installation around the world. This campaign will provide comprehensive support to the Army Family – Soldiers, DA Civilians, and Family Members – during their time in the Army and beyond. The intent is to provide services that facilitate mission accomplishment and build a resilient Army Family that can cope with adversity. Most services are already in place, and USAG Natick is working to revamp existing programs and implement missing pieces to meet the R2C standard. As we complete this work, you'll hear more about this important campaign.

Thank you for reading, and thank you for what you do!



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## In the Media



### Body Armor Boston

Female body armor, researched and developed by NSRDEC and PEO Soldier was the subject of an article in Boston Magazine. USARIEM's Kelly Sullivan wore the body armor in the photo. The October issue is on newsstands now.

## Within the Gates

### Fall Family Day

The NSSC Fall Family Day was a huge success with kids and adults enjoying the "Trunk or Treat," double-feature drive-in movie and other activities. Look for an article and pictures in our Nov. 8 issue.

## Upcoming Events

### Flu Clinic

The Blue Cross Blue Shield Federal Employee program is sponsoring an onsite flu clinic for employees on Thursday, Oct. 31, from 10AM to 2PM at the Lord Community Center.

For questions regarding accepted insurance plans and costs to others, please contact Melissa Brossi x5743.



### Installation Fall Clean-Up

The NSSC Fall Clean-Up will take place Nov. 1.

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*That's why Sgt. 1st Class Adam Adams has such an appreciation for the work done at the Natick Soldier Research, Development and Engineering Center.*

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# Soldier's Perspective

Bob Reinert, USAG-Natick Public Affairs / NATICK, Mass. (Oct. 22, 2013)

No one understands better than a Soldier what his or her peers need in the field.

That's why Sgt. 1st Class Adam Adams has such an appreciation for the work done at the Natick Soldier Research, Development and Engineering Center.

"My initial experience here was I was a bit overwhelmed by all the different work that Natick is doing here and the advancements in technology, especially in the way of load carriage and kitting for the Soldier," Adams said. "My experience is that there's a ... dedicated force of both civilian and military here, and they're dedicated to trying to alleviate some of the hardships that the Soldier is facing downrange in combat."

A 15-year Army career that included a total of four deployments to Iraq and Afghanistan give the 38-year-old Lawrence, Kan., native a unique perspective.

"I'm an infantry-

man," said Adams, "so I've pretty much done all the jobs from a young SAW gunner all the way up to platoon sergeant."

When Adams was assigned to NSRDEC in April 2012, he was uncertain what was in store for him.

"Before I came here, I had no idea of all the different work that's being done here and the dedication ... to help the Soldiers," Adams said. "One of the organizations I work very closely with is the OFIG – the Operational Forces Interface Group. They dedicate a great deal of their time doing evaluations on different types of technologies, getting feedback from the Soldiers, which helps steer the programs forward from there."

Though he said he and his fellow infantrymen were part of "a very fickle group," Adams, the senior combat arms liaison at OFIG, said that their response to new technologies developed at Natick has been positive.

"Anything to help lighten the load, to make them more comfortable on today's battlefield, is going to be well received by the infantrymen," Adams said.

Given his background, Adams has great interest in advances made in load carriage technology at Natick since the first ruck sacks were introduced.

"The difference is immense and mostly with the focus on trying to make the Soldier more

mobile ... as well as lethal and more survivable on today's battlefields," Adams said.

Where else has Adams seen big changes?

"I'd say probably night vision and body armor are going to be probably on the foremost front of what's being done here in Natick in technologies," Adams said.

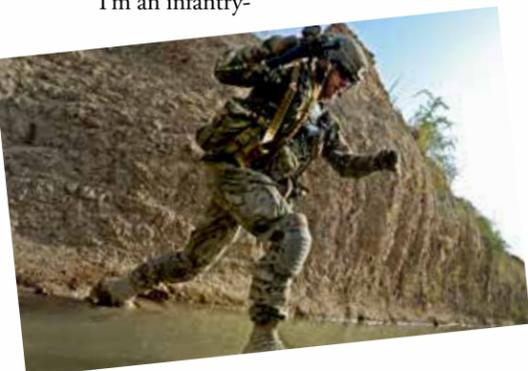
Adams said he wishes more Soldiers knew about the work done at Natick.

"Soldiers are focused on training for combat roles and less focused on the (research and development) community," said Adams, "although I think that there should be probably some kind of curriculum built into NCO professional development courses that would allow them to understand what is being done in the R&D community for the Army and allow them to reach out and leverage some of the technologies that are being (developed) here."

Adams said he will always remember what he saw here.

"It's been incredibly eye opening," Adams said. "It's been an experience that I'll take with me the rest of my military career – and even afterwards – to see the dedication of the civilian force here, as well as the military force. It's dedicated to try to develop better equipment for our Soldiers and help them on their everyday missions."

**"It's been an experience that I'll take with me the rest of my military career – and even afterwards – to see the dedication of the civilian force here, as well as the military force."**





# Cold Facts

## Army researcher studies hypothermia

Bob Reinert, USAG-Natick Public Affairs / NATICK, Mass. (Oct. 22, 2013)

Maj. David DeGroot, Ph.D., went looking for the cold facts, and after years of study, he may have them.

Now the field investigation team leader for the Injury Prevention Program, Army Institute of Public Health, U.S. Army Public Health Command in Aberdeen, Md., DeGroot actually began his quest to discover why the human body cools down faster under certain circumstances when he was a research physiologist in the Thermal and Mountain Medicine Division at the U.S. Army Research Institute of Environmental Medicine at Natick Soldier Systems Center.

DeGroot wanted to learn more about why four Soldiers died from hypothermia in 1995 during the final phase of Ranger School in hopes of developing medical techniques to help prevent such tragedies. He and his team used data collected from eight Soldier volunteers, who were fitted with microdialysis fibers, muscle temperature probes and skin temperature sensors. They were then put into the 102-degree waters of an immersion tank, followed by a trip to an environmental chamber, where the air temperature was a relatively cool 66 degrees.

“The key part of the study was using microdialysis to ‘pharmoco-dissect’ the mechanisms that control skin blood flow,” DeGroot said. “Human skin is unique in that it is under dual neural control -- there is a vasoconstrictor system, as in all mammals, that functions to reduce blood flow through the vasculature. However, humans also have an active vasodilator system in the skin, which serves to increase blood flow, which as a result increases heat transfer to the environment.”

DeGroot built upon the 1999 study by US-ARIEM’s John Castellani, Ph.D. Castellani was part of a team that conducted the institute’s initial study at Camp Rudder on Eglin Air Force Base, Fla., soon after the deaths. Castellani’s work led to adjustments to the immersion and exposure tables Rangers use to determine what amount of exposure to cold is safe.

Castellani found that exposure to cold air after exercise led to a faster rate of decline in core temperature, higher skin temperature, and higher rate of heat transfer through the skin.

“The follow-up question to John Castellani’s 1999 study was, what mechanism was responsible for the increased skin heat flux and accelerated body core temperature decline that he reported when cold exposure was preceded by active heating, (such as) exercise in an immersion pool?” DeGroot said.

To answer that, DeGroot and his team used several pharmacological agents.

“By comparing the control site between the active and passive heating trials, we could demonstrate the effect of prior exercise on skin blood flow,” DeGroot said. “During the passive heating trial, skin blood flow decreased 40 percent from baseline. However, during the active heating trial, it only decreased 28 percent, which is a statistically significant difference.

“These data indicate that prior exercise leads to higher skin blood flow during subsequent cold exposure. So, why?”

Botox, which is typically used for cosmetic purposes, was used at one microdialysis site because it also stops vasodilation of skin blood vessels. Skin blood flow at this site decreased more than 50 percent during the cold exposure, bringing it in line with the passive heating trial.

“Based on the available data, we conclude that active vasodilation over-rode a competing vasoconstrictor signal and resulted in higher skin blood flow,” DeGroot said. “Using these data, researchers might be able to develop pharmacological agents to maintain the vasoconstrictor response to cold and thereby reduce the risk of hypothermia.”

With a better understanding of the human body’s response to cold, researchers are a step closer to helping future Soldiers ward off hypothermia.



# Doing lab work for 'HEROES'

By Alexandra Foran, NSRDEC Public Affairs / NATICK, Mass. (Oct. 21, 2013)

Not many college students have such an opportunity, but a few from the University of Massachusetts Lowell worked in labs this summer that strive to save warfighters' lives. Ten students from the UMass Lowell Co-op Scholars Program worked during the summer with the U.S. Army Natick Soldier Research, Development and Engineering Center, known as NSRDEC, as part of the Harnessing Emerging Research Opportunities to Empower Soldiers, or HEROES, program. HEROES is a joint research and development initiative that allows both parties to work together to improve Soldier protection.

For a number of the students, this was the first time they had worked in a lab outside of an academic setting. This real-world experience provided an opportunity to further develop a variety of skills relevant to science, technology, engineering, and mathematics, or STEM, fields.

"The HEROES program is important because it provides us with talented and eager students who can make a huge difference for the S&T (science and technology) community here at NSRDEC," said Ben Williams, NSRDEC mechanical engineer, who mentored a UMass Lowell student.

Students completed an assortment of tasks based in their discipline while working with NSRDEC. They were also involved in presentation workshops at UMass Lowell as part of the co-op program, and all of the students also had an opportunity to showcase their work through professional presentations to NSRDEC and UMass Lowell personnel.

During Kristina Michta's co-op with NSRDEC mentors Diane Steeves and Jason Soares, she was taught simple chemistry tech-

niques, polymer processing, and thermal and spectroscopy techniques for characterizing synthesized materials. Michta was then able to characterize the optical and mechanical properties of bicomponent polymeric fibers using laboratory equipment.

"It was great having mentors to show me the ropes of how to design and carry out my own experiments, how to troubleshoot, and how to put together poster presentations and talks about my work," said Michta, a UMass Lowell sophomore chemistry major. "It was also helpful to know that when I was working more independently, I could always come to my mentors with a question, should I need the help."

Michta said that exploring different fields of chemistry this summer will help her choose what area of chemistry to focus on in the future.

"The students who I met (working with NSRDEC) were extremely excited about this opportunity," said Adrianna Morris, assistant to the vice provost for research, and the program director, Campus Research Co-ops at UMass Lowell. "Some of them lived close to Natick and knew about the base -- in a sense it was a dream come true for them. There was one student, in particular, Sabrina Riley, who was incredibly excited."

Riley, a Natick native, learned a number of techniques, including modifying fabrics and obtaining scanning electron microscopy images, from mentor Dr. Shaun Filocamo, NSRDEC research chemist.

"(The UMass Lowell students) so valued the experience because they could see the relevance of what they were doing and how they contributed to their project, turning

into something that was going to help," said Morris.

Cody Langlois and Oliver Farren had their co-op with Quoc Truong, NSRDEC physical scientist. They each set up a Design of Experiment, identified several different formulations for advanced materials, conducted research, and presented their findings to their mentor on a weekly basis.

"It was good to know more about the lab environment, which was great especially because my classes are starting to be more lab oriented," said Farren, a sophomore plastics engineering student. "I learned a lot about omniphobic coatings and techniques and Quoc really cared about how much I was learning."

This summer was the first time UMass Lowell students participated in co-ops through the HEROES program, but certainly not the last.

"We are already queued up for next summer," said Lynne Samuelson, NSRDEC senior scientific adviser and HEROES co-director. "We hope that we'll have even more students for next summer. We also hope that a lot of these students will continue on with the research they are doing. Hopefully, we'll have some future [Department of Defense] scientists."

Students working on co-ops with NSRDEC learned what it was like to be part of a team, while also retaining independence as they created and conducted their own work.

Thanks to the support of UMass Lowell and NSRDEC, students worked this summer in environments that allowed them to succeed and be an integral part of HEROES, a program that supports Soldier heroes.



Photos: John Harlow, USAG-Natick Public Affairs

# Natick holds inaugural NCO Induction Ceremony

By Bob Reinert, USAG-Natick Public Affairs / NATICK, Mass (Oct. 8, 2013)

Followers became leaders as six noncommissioned officers were recognized Sept. 30 at U.S. Army Garrison Natick's inaugural NCO Induction Ceremony.

Command Sgt. Maj. Kevin B. Stuart of the U.S. Army Medical Research and Materiel Command served as guest speaker at the ceremony, held at the Lord Community Center. Inductees included Sgt. David A. Gonzalez, Sgt. Matthew C. Lavallee, Sgt. Crystal L. Meints, Staff Sgt. Shaun M. Morand, Sgt. Dennis E. Scofield, and Sgt. Marissa G. Spitz.

"We had the opportunity to be included in this time-honored custom, which many Soldiers may never get to witness and be a part of," Spitz said. "I was happy to see so many folks from around (Natick Soldier Systems Center) at the event, to witness this important day for us Soldiers. We appreciate all of the hard work they do in their research for the Soldiers, and we try to give as much back as we can by being superior leaders and warfighters."

Natick Command Sgt. Maj. Robert Beau-

soleil reminded those in attendance of the event's importance.

"This induction ceremony that you just witnessed is a time-honored custom of select Soldiers being inducted into the ... corps of the noncommissioned officers," Beausoleil said.

In his remarks, Stuart welcomed the Natick Soldiers to the NCO Corps.

"You are now part of the NCO heritage," Stuart told the inductees. "You now have the opportunity to contribute to the legacy of outstanding service and leadership. You now have the opportunity to be part of a team that has been around for about 238 years. You now have the opportunity to be a part of a corps that has been in every battle, every skirmish, every war from the Revolutionary War to present."

Stuart pointed out that today's NCOs must train, teach, coach and mentor Soldiers to success while working under a great deal of scrutiny.

"You see, in a sense, we live in a glass house,"

Staff Sgt. Shaun M. Morand, left, passes through an arch and under crossed swords, and Command Sgt. Maj. Kevin B. Stuart, right, speaks to inductees Sept. 30 during the inaugural NCO Induction Ceremony at Natick.

Stuart said. "People are always watching us. They need that leadership. They want that leadership."

Stuart told the NCOs that leading Soldiers won't always be easy.

"You've got to make tough decisions sometimes. You're going to face tough situations and circumstances."

Leadership isn't just about rank, positions and functions, Stuart said. He added that it's about relationship, friendship, fellowship, partnership, sportsmanship, sponsorship and mentorship.

"We have to be the best at what we do. We lead by example. Always strive for excellence."

During the ceremony, the NCOs passed under an arch and crossed swords, symbolizing their transition from followers to leaders.

"Once you cross that line, there's no crossing back," Stuart said. "More than ever, our noncommissioned officers are needed in our Army."

Spitz said she was impressed with what Stuart had to say to her and her fellow inductees.

"CSM Stuart ... gave a very inspiring speech on the Army values and leadership," said Spitz, "tools I will definitely use on a daily basis."

On a late June day at Fenway Park in Boston, Master Sgt. Miguel Chacon was looking on with great pleasure as Red Sox players signed autographs for his three children and dozens of others when he felt something hit him on the side.

Chacon, in uniform, looked down to see a pair of batting gloves, which he assumed that some fan had tossed down to be signed. A moment later, an usher tapped Chacon on the shoulder and told him that it was Red Sox outfielder Jonny Gomes, known for his unwavering support of the U.S. military, who had thrown them over.

Later, he was able to thank Gomes personally for the unsolicited gesture, but Chacon wanted to do more.

So when Lee Cummings, who works at the U.S. Army Research Institute of Environmental Medicine at Natick Soldier Systems Center, offered him tickets to the Sept. 15 Red Sox-Yankees game at Fenway, Chacon, the USARIEM senior enlisted advisor, brought along the Advanced Combat Helmet that he had worn in Iraq and a bag of "recruiting goodies."

On a pregame tour of Fenway, Chacon showed the helmet to a club official and told her that he had brought it for Gomes. She escorted Chacon and fellow USARIEM Soldier Spc. Travis Crook below the stands and to a door outside the Red Sox clubhouse.

"About three minutes later, here comes Jonny Gomes through the door!" Chacon said. "I reached into the bag and I said, 'This is the helmet that I had in combat.'"

Chacon told Gomes that he wanted him to have it.

"Are you serious? This is cool. This rocks," Chacon recalled Gomes saying.

"He was just taken by that helmet," Chacon said. "He loved it. He lit up."

As they talked, Gomes pulled down his right sock to reveal a tattoo that stretches from his knee to his ankle. The tattoo includes an American flag, the Statue of Liberty, and a target with the date Osama bin Laden was killed.

"I've met some players," said Chacon, "but I've never met a player as patriotic as Jonny. Never."

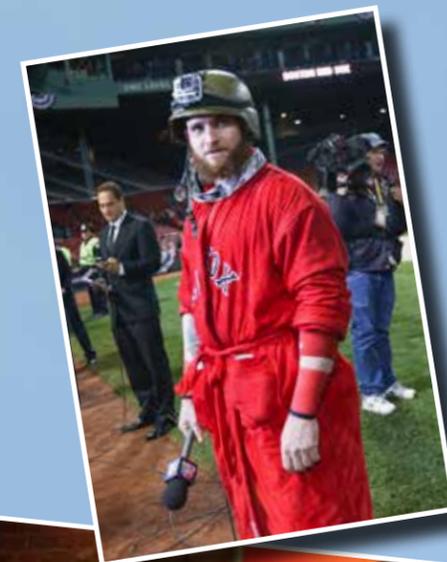
The helmet -- with Chacon's rank, roster number, blood type, an American flag and a Special Forces sticker on the outside -- has become as much a celebratory icon as the beards worn by the Red Sox, now facing the St. Louis Cardinals in the World Series. Chacon didn't part with it lightly.

"Things that I've taken to combat and back, they have a lot of value to me," said Chacon, who has set aside the gear for his children to one day give to theirs. "This is the stuff that dad went to war with. I wanted to give a piece of the battlefield back to Jonny."

Chacon's helmet couldn't have found a better home than Gomes' locker.

"It's an honor to see him wear that," said Chacon, adding that Gomes, in turn, "honors the military. That's bigger than anything."

"I'm glad it's getting them through the battle that they're battling through right now ... to win the World Series."



# Special Gift

By Bob Reinert, USAG-Natick Public Affairs (Oct. 24, 2013)





# NSSC This Week

## **NSSC**

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Lt. Col. Brian Grea

*Command Sergeant Major*

Command Sgt. Maj. Robert Beausoleil

*Public Affairs Officer*

John Harlow

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## **About this newsletter**

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