

THE POINT

A newsletter for and about the people of the
U.S. Army Medical Research and Materiel Command

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Soldiers compete for coveted German badge

While athletes from around the world gathered in Athens to compete in the Olympic games, soldiers from across the United States were invited by the U.S. Army Medical Research Institute of Chemical Defense to Aberdeen Proving Ground for an equally strenuous competition Aug. 22-25.

In Athens, athletes competed against each other for gold, silver or bronze medals. At MRICD, the soldiers competed against themselves—their own training and proficiency—to earn the right to wear the German Armed Forces Proficiency Badge at the gold, silver, or bronze level. Like their counterparts in Athens, the soldiers competed in sporting events, such as swimming and track and field; however, their competition also included demonstrating excellence in job performance, proficiency in military skills—marksmanship and the ability to render first aid—and a road march.

The German badge was established in the early 1970s and introduced to the U.S. military services in 1972. To qualify soldiers to provide the training as well as to judge each event, German Armed Forces in 2001 began offering a train-the-trainer course. Trainers receive certification annually to remain qualified to judge the events. The only event the U.S. trainers cannot oversee is the road march, which must be monitored by German Armed Forces staff.

Sgt. Bryon Pieper of MRICD was the non-commissioned officer in charge of the Aberdeen program. Pieper, a gold-level qualifier, was excited about holding an event that welcomed participating military from across the U.S.

"It is a privilege to be able to go for the badge, and I take great pride in having earned it," he said.

The demonstrated ability to render first aid and overall job performance were prerequisites to entering the events portion of the competition. Following a welcome briefing on Sunday, the event got underway Monday morning with swimming and track and field. Participants were required to complete a 200-meter swim competition, swimming stroke of their choice, a 100-meter dash, the long jump, the shot put and, depending on whether the participant was male or female, a 3,000- or 2,000-meter run, respectively. As in the military's physical fitness test, requirements for passing each event depended on a participant's sex and age. Soldiers who failed an event had several alternative events in which to compete to still qualify for the badge.

Participants were at the range testing their marksmanship with a 9-mm pistol on the second day. Each participant had five rounds to hit three silhouette targets; each target had to be hit at least once. This event, along with the road march, also determined the level of badge the participant would earn. A score of three hits out of the five earned a bronze starting placement in the road march; four out of five, a silver starting placement. If five shots hit the targets, the participant started the march from the gold position.

The road march took place on the morning of the last day. Participants marched in BDUs and carried a 10-kilogram rucksack. To qualify for the gold level badge, a soldier, 18-29 years old, must march 30 kilometers in 5 hours; 25 in 4 hours and 10 minutes for the silver, and 20 in 3 hours and 20 minutes for the bronze. Requirements were slightly less for female soldiers as well as for all sol-

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Command claims three of Army's 10 'greatest inventions' for 2003

Three of the Army's top 10 greatest inventions for 2003 hail from the U.S. Army Medical Research and Materiel Command.

The Army honored the teams of inventors from the Walter Reed Army Institute of Research and the Telemedicine and Advanced Technology Research Center at a June 23 luncheon in McLean, Va.

"The inventions submitted demonstrate the vast experience within the Army laboratory community as a sincere commitment of these laboratories to improving the readiness of our Army," said Lt. Gen. Richard A. Cody, the Army's deputy chief of staff, G-3 and the final selection authority for the program.

The Army developed the annual Greatest Inventions program to recognize the Army's best new technology solutions impacting Soldiers. The Army—from active duty divisions to the Training and Doctrine Command to the Army's G-3—chose the Army's ten winning programs based upon their impact on Army capabilities, inventiveness and potential benefit outside the Army.

The Golden Hour Container was created by the Walter Reed Army Institute of Research in Silver Spring, Md. The container can transport red blood cell units without using batteries, ice or electricity. It was designed to transport the blood cell units within military facilities and to Forward Surgical Teams, where delayed evacua-



TATRC's BMIS-T

See "Inventions," page 3

"Badge," continued
diers in the 30 to 44 and the 45 to 59 age groups.

"The most challenging aspect of the competition was completing the road march after two days of grueling sporting events," said Capt. Matt Moser, one of MRICD's principal investigators and currently the institute's detachment commander who was one of 12 who earned gold.

Soldiers successfully completing the event were awarded their GAFPBs at a ceremony at the Edgewood Conference Center on Aug. 25. Of the 36 participants, 17 earned the badge: 12 at the gold level, three at the silver—including Spc. Alicia Swails from the Walter Reed Army Institute of Research—and two at the bronze.

—Cindy Kronman, U.S. Army Medical Research Institute of Chemical Defense



Maj. Matthew Moser from MRICD receives his gold level badge from Brig. Gen. Volker Zimmer, German Armed Forces Command commander. Zimmer is flanked by MRICD commander, Col. Gennady Platoff. (Photo by David Fountain)

“Inventions,” continued

tion of wounded soldiers can occur. The container is reusable and maintains its contents at the appropriate temperatures for more than 78 hours. While designed specifically for transporting red blood cell units, inventors believe its usefulness will extend to other items such as vaccines and reagents. The container has a carrying strap and comes in Army desert, woodland and Marine camouflage.

“The point of the box is for the medic to have blood with him, ready to use when he needs it,” said Col. Tom Reid, former chief of the Department of Blood Research at WRAIR, in an interview in 2003.

The VIRGIL Chest Trauma Training System is the invention of the Simulation Group, working with the Telemedicine and Advanced Technology Research Center at Fort Detrick, Md. The training system combines the use of a mannequin and a computer-based graphic interface. It is used during training exercises and tracks the internal position of chest darts and chest tubes as well as provides feedback to the user.

“The system works to teach anybody who’s going to deal with chest trauma, especially in a combat situation, how to diagnose and treat the victim,” said Dr. Steve Dawson of Massachusetts General Hospital, whose team invented VIRGIL. “It will teach anyone from an 18-year-old medic who’s never seen this stuff before to a thoracic surgeon who wants to brush up.”

The Battlefield Medical Information System—Telemedicine was designed by the Telemedicine and Advanced Technology Research Center, Fort Detrick, Md. BMIS-T is similar to a handheld computer with special programming developed to assist deployed medical personnel with diagnosis and treatment. It can be used

to record patient clinical encounters and transmit those records to a central repository, officials said. The system holds service members’ medical records including immunizations, dental and vision records as well as known drug allergies. BMIS-T is programmed with healthcare reference manuals and can provide medical personnel with suggested diagnosis and treatment plans.

“Basically, the BMIS-T is a point-of-care diagnostic tool for first responders—be it a medic, a PA (physician assistant), a doc—that captures basic data from a medical encounter. They put in the symptoms, and it comes up with a treatment plan based on the user’s skill level,” said Tommy Morris, a former Army medic and BMIS-T’s inventor.

During the ceremony, each of the winning teams received a glass trophy and a certificate “in recognition of team commitment to improving readiness through innovation and developing new technologies that positively impact soldiers.”

Other command entries included the Portable Aquatic Biomonitor for Drinking Water Protection from the U.S. Army Center for Environmental Health Research at Fort Detrick; the Smallpox Inoculation Training Unit from the TATRC at Fort Detrick; the DREW Data Recording Workstation from the U.S. Army Institute of Surgical Research in San Antonio; the Electronic Surveillance System For The Early Notification Of Community-Based Epidemics from WRAIR; and the Sleep Watch from the WRAIR.



WRAIR's Golden Hour Container



TATRC's VIRGIL Chest Trauma Training System

Airmen helping researchers in the clouds

A handful of Air Force Academy airmen lived in the clouds on the 14,110-foot Pikes Peak summit this summer as part of an Army/Air Force acclimatization research study.

The U.S. Army Research Institute of Environmental Medicine, based in Natick, Mass., and the academy's Human Performance Laboratory teamed up to study the effects of taking 18 airmen from moderate altitudes (6,500 feet) to high alpine environments (above 14,000 feet.).

About 100 yards from the summit visitor center and cog railway line sits the Army's Maher Memorial Altitude Laboratory. The unassuming facility, often overlooked by summit visitors, serves as a base of operations to conduct alpine research and house study volunteers.

The academy airmen, 10 men and eight women, live on the summit for four consecutive days performing various cognitive and physical drills to gauge the impact of the elevation on motor skills and memory retention. The study ran from July 15 to 31.

Two years ago, Army researchers conducted a similar study, but took people from sea level to the summit of Pikes Peak. This year's study will compare findings from the two study groups to determine if people from moderate altitudes acclimate faster or better to the alpine environment than people from sea level.

Typically, it takes people from sea level five to seven days to acclimate to the elevation, said Dr. Chuck Fulco, the lead scientist on the Army's research team. The level of oxygen saturation in the air at 14,000 feet is dramatically reduced from that at sea level, which causes most people to acquire acute mountain sickness, he added.

Mountain sickness causes headaches, nausea and an all-around bad feeling that only gets better after the body adjusts to the lack of oxygen.

While the study is still ongoing and the final results will not be available for a few months, the researchers are already noticing a surprising trend.

"What we're seeing is the severity of AMS is much less for the people from the academy and that they are feeling nearly normal, eating well and not losing body weight," Dr. Fulco said.

The genesis of this study is loosely based on the military campaigns in Afghanistan. Nearly three years ago the military was actively engaged in ending the Taliban stranglehold on the country. Scientists noticed early on that troops in that region needed a few days to adjust to the higher elevations. To further compound the situation, many soldiers and airmen marched high into the Afghan mountains to hunt for Osama Bin Laden and call in air strikes, further enhancing AMS symptoms.

Dr. Fulco hopes to equip Army leaders with knowledge on how to better select troops for high-alpine operations. For example, it might make more sense to have troops live for some time at moderate elevations before being deployed because they will adapt to the higher elevation more rapidly.

—1st Lt. Greg Hignite, Air Force Academy Public Affairs



Dr. Ken Kambis removes the headgear from 1st Lt. Jacki Grant following her VO2 Max ride on the summit at Pikes Peak.

Burn teams travels globe to treat injured

An Air Force cargo plane doesn't seem to be the best place to run an intensive care unit, but a team of pros regularly transports critically ill burn patients from any point on the globe.

"We do everything that would have been done in an intensive care unit. Everything that's done in there, we do in the air," said Staff Sgt. Michael Bruder, the noncommissioned officer in charge of the Burn Flight Team that's based out of the Army's Institute of Surgical Research's Burn Center in San Antonio. "A person (who is burned on a high percentage of his body) has a lot better chance of getting treated correctly and living if you have a burn team there."

During a normal evacuation on C-17s or C-141s, the Army's Burn Flight Team withstands hot, noisy and uncomfortable working conditions to make sure a burn patient gets the best care available. A team gets no rest during the flights because its members have to constantly monitor the patient's condition—without the benefit of hearing the alarms that sound on most ICUs.

"If you don't see that alarm go off for 10 minutes, you're going to have problems," Bruder said.

Since the beginning of Operation Iraqi Freedom, the team has provided care for 68 servicemembers during 25 flights, with everyone making it to San Antonio alive.

"There are people who come close (to dying). That's part of the deal," said Maj. Lisa Johnson, a registered nurse and the administrative officer for the team. "But that's part of the reason we send specialized, trained people to manage burn patients who know how to treat them."

Because a burn team can make the difference between life and death for

a burn patient, no one wants to be grounded from the all-volunteer flight team.

"I look at it as if it were me, it's good to know that somebody's going to come and get me halfway across the United States or the world," said Bruder, a licensed practical nurse who has been on the team for two years. "If I can be part of that, I am more than willing."

The team's patch sports the motto "Anytime, Anywhere," and its members have been known to go on short notice to travel to destinations across the United States as well as Argentina, Peru, Japan, Guam, Russia and Germany.

Once the team lands in San Antonio, its work is far from finished. The patient moves from the aerial ICU to the burn center's ICU, staffed by burn team members.

"We transport them one day and the next day we start taking care of them," Johnson said.

Each day in the burn ICU and on the ward, the burn center staff conducts multidisciplinary rounds where surgeons, nurses, respiratory therapists, social workers and dieticians talk about treating the patient—and the patient's family.

"You sometimes ride that roller coaster with the patient and their family because there's a lot of highs and lows," Johnson said.

Highs abound when a former patient comes back to the ICU to visit.

"To see how great they're doing and to hear from them, they're an inspiration," Johnson said. "Those soldiers are truly heroes."



Army Burn Team members Maj. Lisa Johnson and Staff Sgt. Mark Weber tend to a patient inside an Air Force cargo plane.

Shelter prototype delivered to command

Encased in a standard shipping container, the 8-foot by 8-foot by 20-foot prototype of the Army's Future Medical Shelter System arrived at Fort Detrick May 25.

The shelter is essentially an operating room in a box for a combat support hospital that can be ready to see

patients in as little as a half hour, said Steve Reichard, the program manager for the shelter at the U.S. Army Medical Materiel Development Activity.

"This is a potential replacement for the ISO container portion of the DEPAMEDS (Deployable Medi-

cal System) for the combat support hospital, which we knew we needed to replace," he said. "The whole concept here is you've got everything packed inside the ISO container, and you push a button, and it opens."

After hooking the power switch up to a 24-volt battery—which any standard military vehicle has—and pressing a green button, the container morphs into three shapes—a box, a triangle and a rectangle—in one minute and 37 seconds.

Having a shelter set up that quickly is a real improvement over the current shelter that is contained in two ISO containers, Reichard said.

For that system to be operational, "you've got to manually unfold the existing container, which takes a fair amount of time, and then you've got to physically unload all of the stuff

from one ISO container into one like this one," he said.

Prototypers from Y12 National Security Company at the Oakridge Reservation in Tennessee developed the ISO container that Reichard and Mark Arnold, along with others from Detrick, got to see inside and out during a morning demonstration May 26.

"It wasn't like we could take an original design and modify it to suit our needs then go on and build," said Duane Bias, the Tennessee project manager for the prototype since the program started in June 2000. "We spent quite a bit of time just wrestling with requirements."

The new ISO prototype offers users protection from chemical and biological agents, something the current DEPAMEDS ISO can't offer without extra labor and supplies.

Though the container's weight is 1,200 pounds over its goal of 15,000 pounds, Bias is certain his team can meet that target.

"I think we've identified enough stuff to take out of there that we can be under 15,000," he said.

In addition to the Tennessee company, two others, Mobile Medical in Vermont and EADS Dornier in Germany, have also taken on the task of creating their versions of Army's future mobile operating suite in an ISO container. Reichard said the final ISO container for the Future Medical Shelter System will likely be an amalgam of the three prototypes.

"We plan to evaluate all three of them and will probably end up saying we like A, B and C from this one and D, E and F from this one for the final version," he said.



A prototype of the Future Medical Shelter System expands with the push of a button.

Ventilatory assist device to help surgery teams

When Maj. Brad West spent two and a half months in Iraq, he made a little bit of anesthesia history. The nurse anesthetist introduced the ventilatory assist device to his forward surgical team.

He offered the devices as a replacement to a 1980s-era anesthesia vaporizer that worked for the surgical teams but has limitations, the most striking of which is that it's no longer being made.

A team of engineers, anesthesia providers and combat developers has been looking at a Kansas-based company's off-the-shelf device for two years, ever since they learned the currently fielded one would be unavailable. The Army bought five of the Food and Drug Administration-approved devices and tested them in 10 Army medical centers, including Walter Reed and Brooke Army Medical Centers.

"In reality, it (the ventilatory assist device) is a middle ground," said West, now serving as the chief anesthetist for the Army's Trauma Training Center in Miami. "It's somewhere between what we exactly want and what we have. It's a step in the right direction and is going to continue to get better."

The first feature the ventilatory assist device offers is in its name: a ventilator, built right in. The older machine—called the draw-over anesthesia machine—forced the anesthesia provider to manually squeeze a bag to breathe for the unconscious patient.

"If you're giving anesthesia, you'd like to be able to set up a ventilator and have the ventilator automatically ventilate the patient for you," said Col. Dean Calcagni, an Army anesthe-

siologist assigned to the Telemedicine and Advanced Technology Research Center. "You need your hands free during the surgery to administer drugs, give IV fluids, give blood and maintain an anesthesia record."

Oftentimes, West said, the person administering the anesthesia with a draw-over device in a forward surgical team typically grabs a medical professional who otherwise could be helping patients to help with bagging.

"The VAD (ventilatory assist device) gives you the freedom not 'to set it and forget it' but to set it and monitor your patient," he said. "You're not so tied to it (the machine) that you can't assist your partner (the team's second anesthesia provider) with whatever is going on."

Training on the new device will be much easier because it's closer to what is used in hospitals, said Mark Arnold, the project manager from the U.S. Army Medical Materiel Development Activity for the ventilatory assist device.

"It doesn't have as much sophistication as machines do in a hospital, but it's sophisticated enough," he said. "That's a fine line that we al-



Program Manager Mark Arnold points out features of the ventilatory assist device for forward surgical teams.

Visit prompts large-scale show and tell

A quiet corner of Fort Detrick that usually sees more deer than people began to look like a forward operating base of the Special Forces in July.



A former Air Force pilot, the Honorable Claude Bolton enjoyed a demonstration of the Tactile Situational Awareness System, a vest that gives pilots directional signals through the sense of touch when flying in low visibility conditions.

Camouflage netting covered a cluster of tents and other structures. Generators purred. A tent straddled a treeline, half in and half out of a patch of forest. The site hummed with activity as soldiers and civilians came and went for two days—delivering

things, setting up, preparing for something.

But there was no mystery. The field site was part of a new approach in presenting the who, what and why of the U.S. Army Medical Research and Materiel Command.

On July 9 Maj. Gen. Lester Martinez-Lopez, commanding general of the USAMRMC, hosted a visit by the Honorable Claude Bolton, assistant secretary of the Army for Acquisition, Logistics and Technology.

The USAMRMC showed the senior Army acquisition official how its soldiers, scientists and acquisition managers improve the lives of soldiers from initial accession into the Army, through training, predeployment, deployment, injury on the battlefield and treatment in the forward echelons of medical care.

Each of the command's 12 units supported the "capabilities exercise."

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"Device," continued

ways walk: It has to be sophisticated enough, but every level of sophistication that you add, it adds to complexity of spare parts, training and maintenance."

Any new medical device encounters the rub of the capability it affords users against the logisticians' nemesis of weight and cube. The ventilatory assist device, in its first iteration, offers the anesthesia provider more freedom to the job but it is bigger, heavier and more costly than what it's replacing.

"It's a little like comparing apples to oranges," Arnold said, "because the machine does more. As a tradeoff, it might mean the difference between taking an extra anesthesia provider or an extra person to do the bagging."

The draw-over device, which resembles a shiny cappuccino maker, weighs in at about 20 pounds, container and all, which is why it

was selected for use by forward surgical teams that have to travel light. The ventilatory assist device, on the other hand, tops the scale at 80 pounds in its box. The older machine's box is 10 by 14 by 14 inches, and the ventilatory assist device is twice that. Finally, where the draw-over vaporizer cost about \$2,000 apiece, the ventilatory assist device runs about \$20,000.

"The first iteration of the VAD is larger than the Army wants it to be," West said. "It's the beginning of the evolution of the far forward capability so we can have a ventilator along with the capability of delivering anesthesia. What we would really like to have is something that's 12 by 12 by 12 (inches) that has a handle on top of it. This is the first step in the process of developing that new technology far forward."

“Visit,” continued

Bolton was accompanied by Dr. Robert Killion, deputy assistant secretary for Research and Technology; Dr. John Parmentola, director for Research and Laboratory Management, Office of the Deputy Secretary of the Army for Research and Technology; and Maj. Gen. Robert Mixon, deputy director of the U.S. Army Training and Doctrine Command Futures Center.

The visitors stopped at a series of poster stations set up in a new prototype of a deployable medical shelter—itself a product on display.

Emerging from the poster lane in the shelter, the guests walked along a treeline and suddenly heard gunfire and shouts for a medic. A combat wound and first aid scenario played out with soldiers from the command’s units simulating a combat patrol under enemy fire.

As emergency care was given, a medic at a table in the trees displayed products that medics carry now and future products for the medic in development by the command.

After a brief demonstration of how the patient would be decontaminated if chemical agents had been involved in the attack, the group then entered a battalion aid station and saw new technologies and equipment in development to support forward surgical teams. Portable ultrasound, portable oxygen generating systems, resuscitation fluids and patient monitoring and stabilization systems were included.

By lunchtime, as the July heat was building, the air-conditioned Odom Fitness Center was a welcome location for aviation-oriented displays. The command’s programs in night vision systems, hearing protection, a

3-D sound array for pilots who listen to many voices while flying and a situational awareness vest for pilots flying in reduced visibility were highlighted. Overviews of the command’s health facility mission and Congressionally directed research programs were also part of the lunch break.

After lunch, the group toured the Forward Deployable Digital Medical Treatment Facility, a testbed for new medical technologies operated by the USAMRMC’s Telemedicine and Advanced Technology Research Center.

The group followed the course that a casualty would take through a forward medical facility near the battlefield. At each point of care, briefers described currently fielded medical and dental equipment and devices, as well as future equipment now in development.

At the close of the tour, the group learned how the USAMRMC’s global medical logistics network ensures that medical supplies are there when forward deployed medics, doctors and dentists need them to save lives.

The USAMRMC is a complex command with many different programs simultaneously supporting current operations and looking ahead to future medical needs of the Army. The soldier lifecycle approach to the command’s products and services proved to be an effective way to tell this sometimes difficult story. It also allowed a diverse collection of people—officer, enlisted, civilian, contractor—from all over the command to pull together to communicate the value of what the command does every day. At the end of the exercise, both hosts and guests were much more aware of what the USAMRMC does to protect, treat and sustain the soldier, sailor, airman and Marine.

—*Chuck Dasey, USAMRMC
Public Affairs*

Nutrition guides protein content for ration

Video games and movies play inside the “Doriot Dorm,” a classroom in the Doriot Climatic Chambers facility at the U.S. Army Soldier Systems Center in Natick, Mass., converted into the main living and data collection area for a study that will help determine the protein content for a new individual military ration.

The activities help pass time for human research volunteers participating in the “Exercise and Nitrogen Balance” study, the most intensive on-site nutrition study conducted by the U.S. Army Research Institute of Environmental Medicine’s Military Nutrition Division, according to Lt. Col. Ann Grediagin, a registered dietitian and principal investigator of the study.

Research is specifically measuring the effect of fitness level, caloric intake and protein intake on short-term nitrogen balance during a 1,000-calorie increase in daily energy expenditure. The goal is to determine if fit-

ness level affects a person’s requirement for protein and to see if extra protein helps promote a more positive protein balance when energy expenditure exceeds energy consumption during a sudden increase in exercise.

It’s the type of situation warfighters find themselves in combat, and the reason why the First Strike Ration will benefit from the recommendations once the study is complete.

“The First Strike Ration is not designed to match Soldier energy expenditure, and we know they have a caloric deficit,” Grediagin said. “In a deficit, we want to minimize the loss of lean body tissue and also physical, cognitive and immune function. With the right balance of proteins, carbohydrates and fats (in a calorie-limited ration), maybe we can affect the type of tissue lost, fat vs. muscle.”

Nitrogen gains and losses are tracked because the element is found only in proteins. It is a building block in amino acids, a string of amino acids making a protein. When protein from food or muscle is broken down, nitrogen is excreted through waste products and sweat.

More nitrogen consumed than excreted causes a positive nitrogen balance or muscle-building state. More nitrogen excreted than consumed brings a negative nitrogen balance or muscle-losing condition.

“Nobody in the civilian population has been able to definitively answer the question of what the impact is of exercise on protein requirements,” Grediagin said. “Recommended amounts of protein for a sedentary population may be adequate, but we want to know protein requirements for athletes. Soldiers are athletes.”



A soldier plays a videogame at the “Doriot Dorm,” a classroom in the Doriot Climatic Chambers facility at the U.S. Army Soldier Systems Center in Natick, Mass., converted into the main living and data collection area for a study that will help determine the protein content for a new individual military ration.

“Study,” continued

Started in July 2003 and about halfway finished, the study is composed of three physically fit groups and one sedentary group with seven volunteers in each group.

Sedentary individuals making up Group A are tasked with eating and increasing energy expenditure 1,000 extra calories per day through exercise to see how exercise alone affects protein breakdown.

Fit Group B follows the same conditions as Group A, and was set up to examine how fitness level affects protein breakdown.

Fit Group C receives no extra food, but exercises their normal amount plus an additional 1,000 calories daily and was designed to learn what happens to protein stores during an exercise-induced energy deficit.

Fit Group D retains the same criteria as Group C, but is the only group to double protein intake to discover if loss of body protein stores can be minimized.

The percent of dietary carbohydrate is consistent for all four groups. This is important because the body’s preferred source of energy during exercise is carbohydrate, and if carbohydrate varied, the amount of protein used for energy may be altered, Grediagin said.

For 11 days, research volunteers are strictly monitored as they live in a room packed with exercise equipment, bunk beds to sleep overnight and electronic entertainment. Their diet, customized to them based on preliminary measurements and a three-day survey, consists mostly of liquid protein shakes along with solid foods such as carrots, popcorn and low-protein cookies served on a strict schedule by the diet team in an adjacent room.

“I control every detail,” Grediagin said. “I’ve scripted every part of the

day. I have to know how many calories are used so I can achieve energy balance or create the 1,000 calorie deficit.”

Once their diets are stabilized during the first four days, exercise is increased to burn 1,000 calories for the designated groups for each of the remaining seven days. On Days 1, 5 and 9, each time the volunteers start a new activity they are hooked up to a machine that measures exhaled gases to determine calories expended. Precision is so high that it makes a large number of volunteers unnecessary, according to Grediagin.

Exercise is performed on equipment including a treadmill, stationary bike and an arm ergometer to simulate energy expenditure of weight resistance. Other measurements are taken while bouncing on an exercise ball, playing video games and even sleeping.

Body fat is measured twice during the study. The biological samples team in a separate room collects blood samples two times over four days to assess physiological response to exercise. Research volunteers collect their own waste products for analysis and wear a patch daily to collect sweat to measure lost nitrogen.

Their opportunity to leave the installation is to travel to Tufts University in Boston for tracer studies used to determine the rates of protein breakdown and synthesis.

“(Tracer studies) explain the end result of nitrogen balance. It answers a basic science question,” Grediagin said.

Study sessions are scheduled monthly with two to four volunteers until 28 research volunteers in total are tested. If enough research volunteers are recruited, Grediagin said the study could end as soon as this December.

—Curt Biberdorf, *Natick Soldier Systems Center*

People in the News

Institute's officers honored

Lt. Col. Jeffrey J. Adamovicz received the Bronze Star Medal and Lt. Col. Jon B. "Ben" Woods received the Defense Meritorious Service Medal for their service to the Defense Threat Reduction Agency and the Iraqi Surveillance Group in Baghdad. Both participated in about 40 armed missions to find evidence of weapons of mass destruction, associated activities and personnel.



Adamovicz

Adamovicz, who until recently was chief of U.S. Army Medical Research Institute of Infectious Diseases' Bacteriology Division, served as chief microbiologist for the task force. Woods, an Air Force physician with USAMRIID's Operational Medicine Division, served as the medical expert for the group. The two spent nearly five months in Baghdad, between April and July 2003.

"When we got there, the Iraqi Surveillance Group was taking over from another unit," Adamovicz recalled, "and no one was talking to the Iraqi scientists yet. We saw a need to do that."

He and Woods visited various places that potentially had "dual use," meaning that they were involved in legitimate activity, such as vaccine research, but could also be implicated in offensive biological warfare research. These included commercial laboratories, munitions factories and drug companies.

They also interviewed people who had been associated with Iraq's offensive biological warfare research program in the past. Most of the Iraqi senior scientists were educated in the United States and Great Britain, so they spoke fluent English.



Woods

Adamovicz said the team found useful information that contributed to the understanding of the past Iraqi biological warfare program, as well as some new information that he and Woods could not discuss for security reasons.

"It was very clear that there had been an effort to destroy records, facilities and equipment," Adamovicz said. He cited as one example a team that found unauthorized aerial manned vehicles. By the time it was reported, someone on the Iraqi side had gone in and taken the vehicles before the Americans could confiscate them.

Woods said he was touched by the plight of the Iraqi people, recalling a series of events that took place on the same day. While visiting the Central Public Health Laboratories in Baghdad, he and Adamovicz got a call that someone was having a heart attack outside, near where the team's vehicles were parked.

"We looked out and saw a guy clutching his chest and sitting on the curb," Woods said. "At the same time, a dump truck pulled up, blocking the alley, and the two guys in it got out and walked away. We thought it was an ambush."

Through a translator, they learned that the man was a cardiac patient and had nitroglycerin tablets with him. Woods told him to take his nitroglycerin, and found someone with a wheelchair to take the man to his cardiologist, whose office was nearby.

Just after that incident, Woods said, someone on the street told him a nearby family wanted him to look at their baby. The couple approached him, the woman in traditional dress "with a bulge in the front of her robe," he recalled. "It was the second time that day I thought we might get blown up."

See "Officers," page 13

People in the News

Dog show 'mom' having time of her life

Pat Kidwiler, a budget analyst in the Deputy Chief of Staff for Resource Management, U.S. Army Medical Research and Materiel Command, is living the life of a dog show mom.

For the past seven years, Kidwiler has cast aside her former hobbies of craft shows, sewing and photography to let her dogs compete in agility trials sponsored by national dog clubs.

"I try to give them a show, then a weekend or two at home to be normal dogs," she said. "I don't want to wear them out. I want them to be as happy every time they step on the start line as they were the first time they went out to compete."

Agility training is basically an obstacle course where dogs wind around weave poles, sail over jumps, traverse tunnels and chutes and scale and descend six-foot-tall "A" frames.

Kidwiler started with brother and sister Lhasa Apsos and now has three Shetland sheepdogs that range in talent from seasoned competitor to puppy, but Kidwiler has all the patience in the world for them.

"They are my kids," she said. "Not



Kidwiler and Boomer the Lhasa Apso

in my wildest dreams did I ever think I'd be doing this. It's something I totally enjoy."

Though she works full time, Kidwiler said her mother—her "silent support system"—helps her with the dogs. Early, on she would go to all the shows but had to curtail her trips because of health problems.

"I always call her after some runs to let her know how we are doing, and the first thing she asks me is if the dog's okay," Kidwiler said. "I affectionately call her 'Grammy daycare' because she spends time with dogs during the day and takes care of the ones at home when I'm at a show."

"Officers," continued

That is, until he saw "a little purple hand" emerge from the woman's robe. The couple shared an X-ray with Woods; the infant, it turned out, had a congenital heart defect and needed surgery.

"This baby was going to die without surgery," Woods said. "But the hospitals in Iraq were in such bad shape that the baby would have had to be taken to another country. What was tragic was that they had (Iraqi) surgeons who were capable—but they didn't have the resources to do it. Fortunately, other civil support teams were over there trying to fix the infrastructure problems."

For Adamovicz, who retired Sept. 1, the highlight of the mission was not the medal he received, but the "interesting" dialogue he established with Iraqi scientists.

"Most were unwitting participants and just wanted to get back to science or teaching," he said. "I wish we could have done more to help them. That part was rewarding."

Added Woods, "I'm glad I went ... it was one of those experiences that when you start looking back at your life, this one definitely stands out."

— Caree Vander-Linden
U.S. Army Medical Research Institute of
Infectious Diseases

Medical logisticians welcome, retire commanders

Col. William Fry took charge of the U.S. Army Medical Materiel Agency from Col. Michael Daley June 18.

More than 150 military, civilians, friends and family packed the risers and special seating for the ceremony. Attending the ceremony was Brig. Gen. Sheila Baxter, chief of the Medical Service Corps, and former U.S. Army Medical Research and Materiel Command chief of staff.

Near the close of the ceremony, Maj. Gen. Lester Martinez-Lopez, commanding general of USAMRMC, presented the Legion of Merit to Daley who retired after 29 years of service. Daley and his family are moving to Atlanta, where he begins a second career with the Centers for Disease Control and Prevention.

Martinez-Lopez saluted the accomplishments of USAMMA under the two-year leadership of Daley when thousands of troops were deployed in support of Operations Iraqi Freedom and Enduring Freedom. The agency ensures medical supplies and equipment get to the warfighter, hospitals and other medical centers.

“The Army, Air Force, Navy and Marines got what they needed,” Martinez-Lopez said. “It



Col. William Fry, left, accepts USAMMA's colors and command from Maj. Gen. Lester Martinez-Lopez during the change of command ceremony June 18.

takes an incredible team and the commander makes it happen. Many soldiers are alive today because of what you do.”

He said the journey continues under the leadership of Fry. “We will move forward and make things even better,” Martinez-Lopez said.

Fry, a 24-year veteran, said, “I have been given the honor to command one of the jewels of the Army Medical Department, one of our true national treasures.”

Fry said the Army is in transformation and “USAMMA will continue to be in the forefront of the transformation as our revolution in logistics is extended to all of our sister units worldwide.”

—Ann Duble, Fort Detrick
Public Affairs

People in the News

New information commander

Lt. Col. Ulmont C. Nanton took the reins of the U.S. Army Medical Information Technology Center at a change of command ceremony July 7 at Fort Sam Houston. Maj. Gen. Lester Martinez-Lopez, commanding general of the U.S. Army Medical Research and



Lt. Col. Ulmont C. Nanton took command of the U.S. Army Medical Information Technology Center July 7.

Materialiel Command and Fort Detrick, officiated over the ceremony. He welcomed and congratulated Nanton as the new commander and recognized Lt. Col. Jose L. Lopez for his successful tenure at the center. Lopez left San Antonio for Washington, where he will be an Army War College fellow to the Department of Health and Human Services. Nanton's most recent assignment was also as an Army War College fellow to the Department of Health and Human Services.

New USAMMCE commander

Col. Thomas A. Brown is the 17th colonel to command the U.S. Army Medical Materiel Center, Europe. The ceremony took place July 16 with the Commanding General, U.S. Army Medical Research and Materiel Command, Maj. Gen. Lester Martinez-Lopez officiating as the reviewing officer.



Brown replaces Col. Jettaka Signaigo who is being reassigned to the Combined Arms Support Command, Fort Lee, Va.

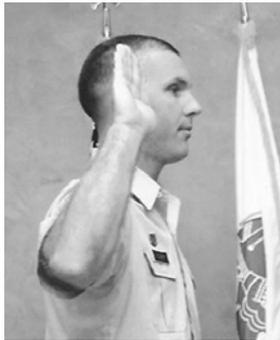
Col. Thomas A. Brown is the 17th colonel to command the U.S. Army Medical Materiel Center, Europe.

Brown takes command at a time when USAMMCE is experiencing its highest workload since Operations Desert Shield and Storm. USAMMCE serves as the Single Integrated Medical Logistics Manager for the U.S. European and U.S. Central Commands, and supports other national forces operating in these theaters, as well as, the Department of State embassies located in Europe, Africa and Asia.

It's staffed with more than 360 personnel, to include U.S. civilians and military from the Army, Navy and Air Force, and local national personnel from Germany and France.

Gold bars for two WRAIR soldiers

Staff Sgt. Kelby Mowery of the Walter Reed Army Institute of Research traded his stripes for lieutenant bars Aug. 31.



Mowery

The commission is “an opportunity to use my education and experiences to serve the Army and my fellow soldiers in a greater capacity, and chance to accept a challenge and meet it and excel,” he said. “Junior soldiers need to remember that these opportunities are available and

they just need to ask the right questions to the right people to get a direction to run in. Then go for it.”

Mowery will become an environmental science officer, putting to use the Bachelor of Science degree in environmental resource management he earned from Penn State and his May 2004 master’s degree in environmental management from the University of Maryland.

“It took a lot of hard work, a lot of late nights, and some delays due to Army schools, but it was worth it,” said the Shippensburg, Pa., native. “I have been trying this for some time, it has just taken me a long time to actually get the motivation together to assemble all of the requirements, finish the master’s and submit the paperwork to be competitive in the selection board.”

Spc. Travis Robbins of the Walter Reed Army Institute of Research also traded in his rank for lieutenant’s bars Aug. 30.

A teacher for four years before joining the Army in August 2001, Robbins will begin the Army’s physical therapy program at

Baylor University and the Army Medical Department Center and School in November.

“I originally enlisted in the Army to finish classes toward the Army’s physician assistant program, but when a coworker told me about the physical therapy program I knew that would be the better fit,” the native Michigander said. “I started my undergraduate course in sports medicine so I have always loved the athletic training and physical therapy fields.”

He called his commissioning “the opportunity of a lifetime.”

“I have the chance to train in a profession that prides itself in patient care and rehabilitation and also serve my country,” Robbins said. “The Army has given me the chance to earn this degree and still take care of my family, what more could a person ask?”



Robbins

Induction ceremony

The following soldiers were honored in a Noncommissioned Officer Induction Ceremony June 24 at Fort Detrick, Md.:

- ▶ Sgt. Melissa Cabrera, U.S. Army Medical Research and Materiel Command
- ▶ Sgt. Jeffery Smith, USAMRMC,
- ▶ Sgt. Natalie Whelan, USAMRMC
- ▶ Sgt. Adam Contreras, USAMRMC

People in the News

Poster winners

Several employees at U.S. Army Medical Research Institute of Infectious Diseases were selected for their winning poster displays of their research at the 2004 Spring Research Festival at Fort Detrick May 12 and 13. Other winners were from laboratories from the National Cancer Institute. USAMRIID winners were:

- ▶ Dr. Christopher Cote, Bacteriology Division
- ▶ Ebony Benjamin, Aerobiology Division
- ▶ Jeffrey Enama, Bacteriology Division
- ▶ Spc. Elizabeth Bode, Diagnostics Division
- ▶ Sylvia Trevino, Bacteriology Division



Deutsch

Smooth transition

Col. Mary Deutsch, chief of staff for U.S. Army Medical Research and Materiel Command, was selected to assume command of U.S. Army Garrison, Fort Detrick in June 2005. Deutsch is married to Lt. Col. Tony Ladouceur, commander of the 1st Army Medical Department Recruiting Detachment at Fort George G. Meade, Md. The couple have a daughter, Lauren Nicole, 7.



Ramos

Graduates

Two Soldiers from the U.S. Army Research Institute of Environmental Medicine, Spc. Hipolito Ramos and Sgt. Diane Pietila, attended the Army's Primary Leadership and Development Course at Fort Drum, N.Y., from July 19 to Aug. 17.

Pietila won the "Iron Man" Award for earning the highest score on the Army physical fitness test for her class. She competed against 70 other soldiers and earned an overall score of 344 on the extended scale for the APFT.



Pietila

— *Terry Rice,*
USARIEM

Promotions

To Colonel

▶ Coleen Martinez, U.S. Army Medical Materiel Development Activity

▶ George Korch, U.S. Army Medical Research and Materiel Command

To Lieutenant Colonel

▶ Bret Purcell, U.S. Army Medical Research Institute of Infectious Diseases

To Sergeant 1st Class

▶ Paul Flemings, USAMRIID

To Staff Sergeant

▶ William Robinson II, USAMRIID

To Sergeant

▶ Eurance Burnett, USAMRIID

▶ Michael Delgado, USAMRIID

▶ Tonya Mullin, USAMRIID

▶ Nestor Nana, U.S. Army Research Institute of Environmental Medicine

▶ Richard Washington, USAMRIID

▶ Peter Nahme, USARIEM

▶ Laura Wilton, USAMRIID



Guszczka

New detachment commander

Capt. George K. Guszczka became the U.S. Army Research Institute of Environmental Medicine detachment commander Aug. 20 under a clear blue sky and a shining sun.

BMIST again recognized

The inventor of the Battlefield Medical Information System-Tactical, Tommy Joe Morris, was one of five finalists for the 2004 Frank Brown Berry Prize in Federal Healthcare. The prize is co-sponsored by U.S. Medicine and the Delta Dental Plan of California. Morris, the chief information technology officer for the Telemedicine and Advanced Technology Research Center at Fort Detrick, Md., created the program that's run on a personal digital assistant and assists deployed medical personnel with diagnosis and treatment. It can be used to record patient clinical encounters and transmit those records to a central repository, officials said. The system holds servicemembers' medical records including immunizations, dental and vision records as well as known drug allergies. BMIS-T is programmed with healthcare reference manuals and can provide medical personnel with suggested diagnosis and treatment plans.

Federal women's award

The U.S. Army Medical Research Institute of Chemical Defense won the Federal Agency Award at the Federally Employed Women's 35th Annual National Training Program, which was held in Nashville. Col. Gennady Platoff, USAMRICD's commander, accepted the award during a ceremony

at the conference July 23. In addition, USAMRICD's Melissa Jamison was this year's recipient of FEW's Collegiate Scholarship. Jamison, a budget technician in the institute's Resources Management Branch, is pursuing her associate's degree in business. Pictured are Jamison, Platoff and Billie Jo Benjamin, the institute's FEW representative.



Jamison, Platoff and Benjamin

Military medical ethics book

The latest series in textbooks of Military Medicine Series offers the first-ever book on Military Medical Ethics released by the Borden Institute. The two-volume set is written for both military and civilian audiences. The book includes chapters from both military and civilian authors, many who are world-renowned and provide a full and often critical exploration of the topic.

The Borden Institute offers the textbook volumes in hardback as well as on its Web site and on CD-ROM. For more information on the Borden Institute and how to order the books in the Textbooks of Military Medicine series, visit the organization online at www.bordeninstitute.army.mil.

People in the News



Sawka

Researchers in the news

Dr. Mike Sawka of the U.S. Army Medical Research Institute of Environmental Medicine was quoted in the August issue of *Martha Stewart Living*. Sawka's advice was sought because of his participation in a study with the Institute of Medicine on guidelines on how much water a person should drink each day.



Evans

Maj. Rachel Evans, also of USARIEM, was quoted in an article on skeleton health that appeared in the *Wall Street Journal* and the *San Francisco Chronicle*. Evans is director of the Army's Bone Research Program and addressed the need to find the balance between the just enough exercise and too

much to find where bone strengthening ends and where weakening begins.

Honors at luncheon

At the Aberdeen Proving Ground Federal Women's Program Equality Day luncheon and awards ceremony in August, U.S. Army Medical Research Institute of Chemical Defense's Staff Sgt. Jennifer Dovorak was recognized for her nomination for outstanding woman of the year and Staff Sgt. Christopher Maturey was recognized for his nomination as supervisor/manager of the year. The U.S. Army Medical Research Institute of Chemical Defense was also nominated as an activity most supportive of FWP goals.



Re-enlistment trio

Capt. Daniel P. Leary, U.S. Army Medical Research Institute of Infectious Diseases company commander, administers the oath of re-enlistment to, left to right, Spc. Teresa Ellis, Spc. Ebony Johnson and Sgt. Tonya Mullin July 26.

Ellis re-enlisted to reclassify as a 91X, a mental health specialist. Twenty-two-years old, Ellis aspires to go "Green to Gold" and become an officer before reaching 27. She is currently a 91G—patient administration specialist—and has been in the Army for four years. Ellis reports to 91X training in January 2005.

Johnson leaves for Fort Sam Houston in San Antonio, where she will work at the U.S. Army Institute of Surgical Research. "I plan on retiring from the Army," said Johnson, who also plans to go "Green to Gold" and become an officer.

Mullin will stay at Fort Detrick where she will continue to work as a training noncommissioned officer at the USAMRIID medical company. Additionally, she plans to take the school option at a local school, Frederick Community College.