

## AEDC conducts space environment test for U.S. Navy

By Deidre Ortiz  
ATA Public Affairs

The Space Threat Assessment Testbed (STAT) Test and Evaluation Team at AEDC recently completed its first space threat assessment test for the U.S. Navy.

Engineers from the Naval Surface Warfare Center (NSWC) Crane Division requested several candidate electronic components be exposed to low energy electrons they would experience on-orbit. The test was funded under a Naval Innovative Science and Engineering project that focuses on single electron effects in advanced electronics.

In true Space and Missile Combined Test Force (CTF) fashion, the STAT team performing this test was made up of AEDC civilians, military members and contractors, and augmented by NSWC personnel.

The test was a significant milestone for AEDC as it marked the start of external organizations using the STAT



See TEST, page 10 Members of AEDC's Space Threat Assessment Testbed (STAT) Test and Evaluation team install a microsatellite in the STAT chamber before conducting a test. (Photo by Jacqueline Cowan)

## AEDC participates in nationwide Fall Protection Focus

By Robert Tate  
AEDC Safety, Health and Environmental

Today AEDC joins the Occupational Safety and Health Administration (OSHA) and the U.S. Air Force in a two-week (May 4-15) nationwide "Fall Protection Focus" to raise awareness of fall hazards in our day-to-day lives.

Historically, fall-related injuries and deaths rank as a leading cause of workplace fatalities, second only

to highway crashes. This year is no exception.

The OSHA Fiscal Year 2015 Worker Fatalities Report documents 516 worker fatalities for the period Oct. 1, 2014, through March 3, 2015. Of these, 130 – or 25 percent – are the result of falls. Historically, AEDC has experienced 16 fatalities of which 4 – 25 percent – were the result of falls. As with other fall-related deaths, investigation into the cause found these deaths could have been prevented with the use of ap-

propriate fall protection.

AEDC uses a variety of fall restraint (FR) products to protect workers from falls from heights. These devices have evolved to include lanyards and self-retracting devices which can vary in lengths to restrain workers to prevent falls at various heights. The success of these FR devices requires users to pay close attention to fall clearance calculations to account for swing

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Joshua Hartman (left), an aeropropulsion test engineer with the AEDC Air Breathing Engine Test Branch, is presented the National Defense Industrial Association (NDIA) Air Force Civilian Tester of the Year award by Devin Cate, director of Test and Evaluation, U.S. Air Force. (Photo provided)

## Hartman awarded NDIA AF Civilian Tester of the Year

By Raquel March  
ATA Public Affairs

Joshua Hartman, an aeropropulsion test engineer with the AEDC Air Breathing Engine Test Branch, recently received the Air Force Civilian Tester of the Year award from the National Defense Industrial Association (NDIA). The award was presented at the 30<sup>th</sup> Annual National Test and Evaluation Conference.

The NDIA Tester of the Year Awards are presented to outstanding individuals in the field of test and evaluation for acknowledgment of their accomplishments as a civilian tester, military tester or a contractor tester. Each tester of the year was nominated by their organization and selected by the Office of the Secretary of Defense or one of the military service test and evaluation departments in light of their achievements.

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## AEDC personnel volunteer at 2015 Special Olympics



AEDC personnel volunteered their time to assist olympians at the 2015 Area 13 Special Olympics on April 21 at the Tullahoma High School Wilkins Stadium. See additional photos on pages 10-11. (Photos by Rick Goodfriend)

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## HIGH MACH

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- Be accountable for our own actions
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- Communicate clearly and openly
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- Nurture, enable and treat people fairly
- Align with customer goals and objectives
  - Use disciplined and innovative processes
- Continually improve in all that we do

# 'Share the Road' during Motorcycle Safety Month

## Pay attention to the road like your life depends on it

**By Jimmy Richardson**  
*ATA Test Operations Branch*

When I was working as an electronics maintenance technician at a Shelbyville plant working three to four day shifts each week, I had plenty of time to enjoy my family - three wonderful kids and a woman whom I had been married to since 1989.

I also had time to enjoy my other hobby building custom motorcycles for myself, family and friends. It was my passion and I enjoyed it very much for years.

I had been riding motorcycles since the age of five and had gotten very educated on how to properly and safely ride a motorcycle. I had become very efficient in repairing motorcycles and building them. It was something that I liked doing in my free time and it had become profitable for me as a hobby. Friends and family were bringing bikes to me to repair and I had purchased the necessary equipment to work properly and safely on bikes.

Thursday night, July 26, 2012, was like any July night; nice and warm that time of year. I had gotten off work at 5 p.m. and went straight home to have a fine meal that my wife had prepared for the kids and myself. After supper and dish washing, I came up with the idea of a treat for the whole family. I suggested we all go to Sonic for half-priced milkshakes after 8 p.m. It was agreed upon by everyone so we decided to make the trip to Lewisburg, Tenn. Sonic for evening shakes as a family.

Rather than everyone squeeze into my wife's vehicle for the ride, I decided to take one of my bikes and ride to Lewisburg myself that evening. All went well on the ride to Sonic except for the last half mile on Highway 64W in Farmington, Tenn.

A vehicle turning onto Highway 64 from Hunter Lane was heading to Shelbyville. The driver of the vehicle evidently didn't see me coming in the westbound lane. The driver pulled into the westbound lane instead of getting into the eastbound lane. The result of this error was a head on impact with my motorcycle at 55 to 60 mph. My motorcycle was broken in half.

The injuries I sustained included a crushed right eye socket, right teeth broken off and flesh from my knees up was torn open completely. My left



**Jimmy Richardson, an instrument technician with the ATA Test Operations Branch, remained in the hospital for more than three months after a life-threatening motorcycle accident on July 26, 2012. He is shown here a few days after the accident. (Photo provided)**

leg tibia and fibula were snapped and ejected out the back of my leg. My left chest muscle and skin was torn from my chest. I was also bleeding severely in my brain.

I lay on the hood of the vehicle for several minutes. The driver assumed I had hit them in their lane by mistake and tried to drive off under the impression I was just hanging onto the vehicle. Once the driver realized that my motorcycle was stuck in the SUV's front end, the brakes were applied and I was thrown backwards onto the highway.

About this time, traffic started to back up and the driver hadn't called the police or medical services. A bystander stuck in traffic came to see what happened. He watched as the driver of another vehicle knelt beside me and began to pray for me. This individual joined in the roadside prayer of an unknown man whom they were sure was about to meet Jesus Christ.

The bystander called emergency services and gave them an assessment of my injuries and my condition. When the emergency services responded, I was flown to Huntsville Hospital for reassembly. My legs were sewn up to stop excessive bleeding and my family and friends were instructed that I would not live through the night.

After I survived that night and into Friday, everyone was told I would not make it through the weekend. I would most likely pass away by Sunday evening so they should make funeral arrangements. I made it through the weekend and the prognosis was changed to may not die but would most definitely remain in a vegetated state the remainder of my life. They

said I would never walk or speak again and that my family and friends should remember the good times they had with me up until that moment.

Doctors performed surgery on my traumatic brain injury to stop the bleeding. Two doctors

worked 12 hours to stop the bleeding in several locations within my skull. They also repaired my crushed right eye socket and removed about a third of the right side of my skull to allow pressure to be displaced without applying significant pressure to my

brain. I had a stroke during the operation on my brain to stop the bleeding.

I was in a coma until the decision was made to transfer me to Vanderbilt Hospital in Nashville for therapy. I woke from

See **ROAD**, page 9



**A motorcycle accident on July 26, 2012 left Jimmy Richardson, an instrument technician with the ATA Test Operations Branch, with severe injuries and years of physical therapy. His motorcycle is shown broken in half by the accident as well as a before-photo in this photo compilation. (Photo provided)**

## Smoking Policy

1. The following revised AEDC smoking policy is effective immediately. Smoking is permitted solely in designated areas identified by a plastic "smoke genie." This receptacle is for the sole purpose of cigarette butt disposal. If there is no receptacle, smoking is not permitted in that area. It is the responsibility of all smokers to clean up the area surrounding the receptacles for any cigarette butts on the ground. Smoking in government-owned vehicles is strictly prohibited. Personnel are allowed to smoke in their personal vehicles at any time. Smoking areas will be held to the absolute minimum and will be located in low traffic, low visibility areas away from points of building ingress/egress and air intakes. A map of all authorized smoking areas is available on the Team AEDC SharePoint site. Smoking near a facility in an area not designated on the map is prohibited and any smoking receptacles located in areas not shown on the map will be removed. All "smoking permitted" and "no smoking" signs will be removed unless specifically required by OSHA.

The fact a person smokes has no bearing on the number of breaks they may take. Breaks should be taken in accordance with the company/agency personnel policies that apply to all employees.

Smoking, including the use of electronic cigarettes and smokeless tobacco, is prohibited in any area, at times when official business is being conducted with government clients, test customers, outside visitors and dignitaries, and where official business is being conducted including conference rooms, auditorium settings, business meetings, or in any other area where Air Force regulations specifically prohibit use. Containers of tobacco waste product, including sealed containers, must not be left unattended or disposed of in trash receptacles. Users of smokeless tobacco must flush tobacco waste down the toilet. Due to the nature, appearance, and safety concerns of electronic cigarettes (also known as "e-cigs"), the use of said products will abide by the same rules for tobacco products stated above and governed by AFI 40-102, *Tobacco Use in the Air Force*.

2. Supervisors at every level will ensure this policy is followed. Disciplinary action is appropriate for repeated violations.

3. Updates to this policy will be made in the future to further align with Air Force guidelines.

4. This policy remains effective until rescinded. (This policy is dated December 20, 2013)

## Action Line

### Team AEDC

I believe in free and open communications with our Team AEDC employees, and that's why we have the Action Line available. People can use the Action Line to clear up rumors, ask questions, suggest ideas on improvements, enter complaints or get other issues off their chests. They can access the Action Line in one of two ways: via the AEDC intranet home page, and by calling 454-6000.

Although the Action Line is always available, the best and fastest way to get things resolved is by using your chain of command or by contacting the organization directly involved. I encourage everyone to go that route first, then if the situation isn't made right, give us a chance.

**Col. Raymond Toth**  
AEDC Commander

# AEDC personnel recognize Workers' Memorial Day

By Scott Nikodym  
AEDC Safety, Health  
and Environmental

"Remember the dead –  
Fight for the living."

That's the slogan for Worker's Memorial Day, which is observed annually on April 28 by the United States and many countries internationally. This day was established to honor workers who have died on the job, to acknowledge the suffering experienced by families and communities, and to commit to the fight for safe and healthful workplaces for all workers.

In 2013, 4,585 workers died on the job across the United States and more than 3 million sustained non-fatal injuries or illnesses according to the U.S. Bureau of Labor Statistics. These are faceless numbers that most people don't relate to unless they, a family member, close friend or coworker was among those who were killed or injured.

We all come to work with the expectation that we will return home safely at the end of each day just as we always have, yet it's a somber fact that since 1958, the nation's annual fatality statistics have included a total of 16 members of the AEDC community. Four were due to falls from heights; four due to structural collapse during construction; four due to solid rocket propellant explosion; two due to inert gas asphyxiation; and two due to

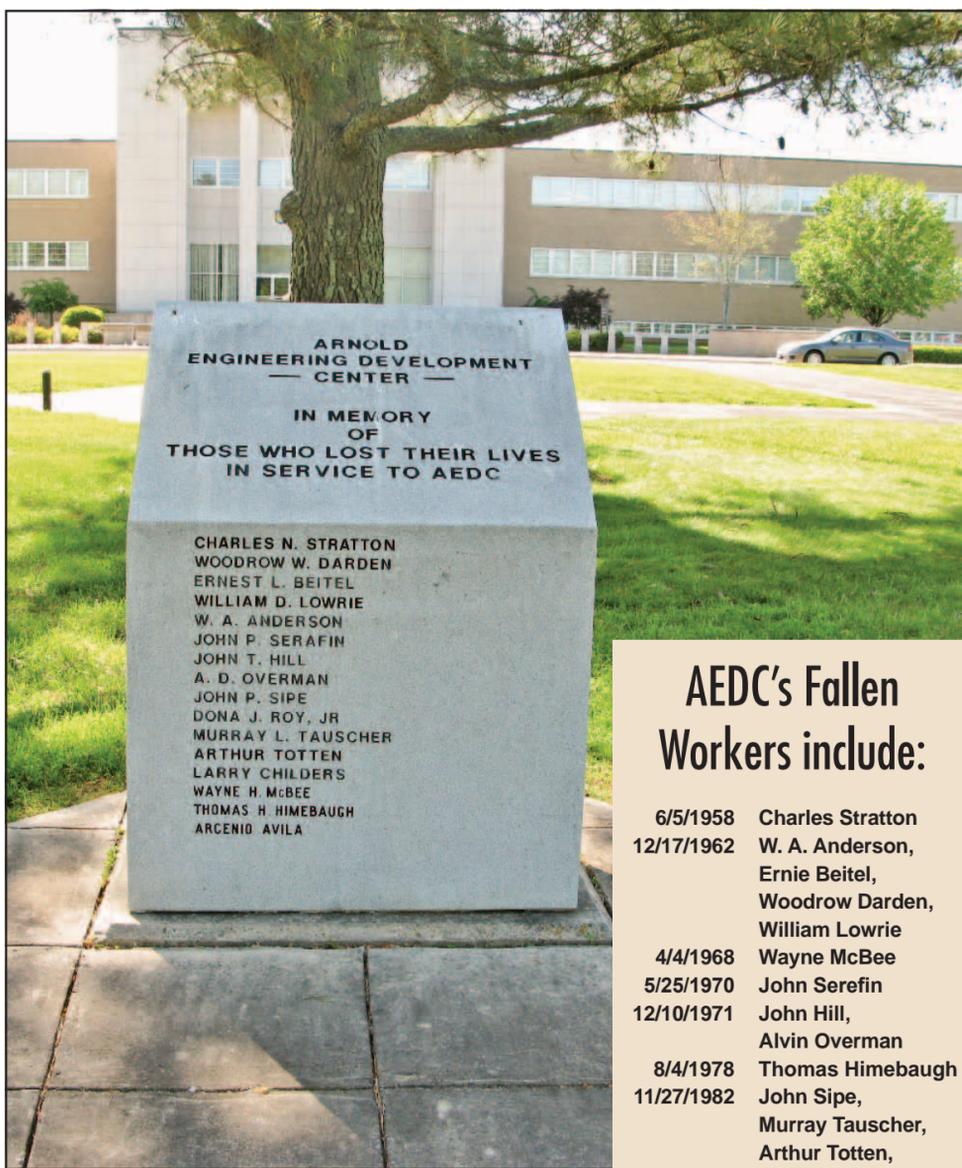
blunt force trauma from failed equipment.

Rather than being faceless statistics, these individuals were known to members of the AEDC community and are identified on a memorial monument located in front of the Administrative and Engineering Building (A&E building).

While a great deal of time and money has been spent working to eliminate or control serious hazards at AEDC, the potentials for unanticipated equipment failures, adverse environmental conditions, and human errors or omissions continue to pose risks to personnel. The best defenses against these residual risks are knowledge and awareness of the potential hazards; compliance with requirements and procedures; and each individual's willingness to take actions to protect themselves and others when potentially serious hazards arise.

Please take a moment to remember both the people who have lost their lives at AEDC and the family members whose lives were forever changed as a result.

While there is nothing we can do to undo past fatalities at AEDC, we all share the responsibility for preventing the next one from occurring. Please make a personal commitment to taking actions in each task that you perform to help prevent the occurrence of future fatalities and serious injuries at AEDC.



The AEDC Memorial Monument shown here in front of the Administration and Engineering (A&E) building lists AEDC personnel who lost their lives at the Complex in service to the nation. (Photo by Scott Nikodym)

## AEDC's Fallen Workers include:

- 6/5/1958 Charles Stratton
- 12/17/1962 W. A. Anderson, Ernie Beitel, Woodrow Darden, William Lowrie
- 4/4/1968 Wayne McBee
- 5/25/1970 John Serafin
- 12/10/1971 John Hill, Alvin Overman
- 8/4/1978 Thomas Himebaugh
- 11/27/1982 John Sipe, Murray Tauscher, Arthur Totten, Dona Roy
- 10/31/1984 Larry Childers
- 4/23/2001 Arcenio Avila

## To say or not to say

By ATA Industrial Security

We are in a world increasingly dependent on information. Bits of information (emails, discussions, etc.) can be pieced together to form a "big picture" identifying plans, activities, or intentions of an organization or activity.

How much detail should we provide in a conversation or email? If intercepted or received by an individual in error, are we providing details regarding plans or activities of Arnold Air Force Base or our test customers?

How about meetings - are they being conducted in an appropriate



location? What are you discussing? Who are the attendees, and are they authorized - do they have need-to-know?

These are examples of questions we should ask ourselves before discussing sensitive topics in various locations, in meetings, with unauthorized individuals present, or before hitting the send button.

## AFRL Materials and Manufacturing group gets a look at AEDC test facilities



Members of the Air Force Research Laboratory Materials and Manufacturing Directorate (AFRL/RX) at Wright Patterson AFB recently visited AEDC to tour the test facilities and get an understanding of their capabilities. Here is the group inside of Jet Engine Test Cell J-1 listening as Gene Klingensmith, AEDC project manager, and Mike Dent, AEDC deputy director of the Aeropropulsion Test Branch, (both in center back) speak about the test cell. (Photo by Rick Goodfriend)

### FOCUS from page 1

falls and contact with lower-level obstructions.

Another recent product in use at AEDC is the trauma relief strap. After a fall occurs, the body quickly feels the effect of the full-body harness webbing, mainly in the legs and torso due to compression on the femoral artery. Trauma relief straps allow a fall victim to deploy a small device that provides a place to stand to relieve the pressure on the leg and leg straps thus improving blood circulation and preventing serious and fatal injuries.

While these products aim to make workers safer, misuse is still a problem. A main area of concern is completion of the required pre-use and annual inspections performed by a competent person. Using life safety equipment without inspecting it can spell disaster during a fall. During pre-use inspection, each piece of fall protection/restraint (FR) equipment is checked to ensure it meets specifications.

At AEDC, it is then assigned

a unique FR number which the inspector uses to enter appropriate information into a database before assigning it to a specific custodian for use in the field. This makes it easier for the inspector to find the equipment for the annual inspection once the equipment is being used.

Improper fit of equipment is another danger. An example would be the loose fit of a full-body FR harness to the worker. A loose fitting harness causes more trauma to the body during fall arrest than a properly adjusted harness. AEDC provides classroom and computer-based training reinforced by recurring toolbox meeting emphasis to ensure workers have proper training on how to use equipment for particular applications, understand fall clearance distances and understand proper anchor points.

One of the most overlooked aspects of using fall protection systems is developing a rescue plan. Employees at AEDC are fortunate to have excellent

emergency responder capability via the AEDC Fire Department. But, a rescue plan that depends on a fallen worker being able to reach a mobile phone and call 911 is not a very good plan. A medical emergency, trauma during the fall, or simply a circumstance where a worker couldn't reach the phone renders this plan ineffective. For this reason, a rescue plan should be in place before working at heights. Failure to have a good plan might delay rescuing a fallen worker in time to prevent serious injury or death.

There are many facets of maintaining an effective Fall Protection program, and according to the number of fatalities related to falls that occur each year, many companies are falling short of ensuring their companies maintain a commitment to their employees' safety. AEDC is committed to ensuring adequate equipment and training to ensure the upmost safety of our employees.



Keith Sweeny (left), ATA Flight Systems Plant Assets Branch storekeeper, assists Jack Murdock, ATA Test Support Branch ironworker, in locating fall restraint devices for their annual inspection. (AEDC photo)

# Defending the nation's ICBM force

By Airman 1st Class  
Dillon Johnston

341st Missile Wing Public  
Affairs

**MALMSTROM AIR FORCE BASE, Mont. (AFNS)** – Before the sun has had a chance to peek up above the horizon, a two-person team opens the front door and steps out of a missile alert facility (MAF) into the chilly blackness. Their flashlights click on and they set off on a perimeter check. With one on the outside of the fence surrounding the MAF and the other right next to them on the inside, they begin a meticulous check of the MAF's exterior.

Once they are satisfied with the security of the facility, they head back inside for shift change and breakfast. Then, their next responsibility begins -- waiting. Not just idly sitting by, but being on constant alert and ready to respond to any number of threats that may affect the MAF they are deployed to, or any of the 10 launch facilities they are responsible for.

It is this grand responsibility which makes the security forces members in the missile field such a vital asset. Being the closest to the sites they are responsible for, they would be the first to respond to any incidents, essentially placing the security of the most powerful weapons in the world in their hands, and they handle this with collected professionalism.

"We aren't in Iraq or Afghanistan, but our mission is probably just as important," said Senior Airman Jared Kreiger, a 341st Missile Security Forces Squadron flight security controller. "If we make one mistake, because of the power of these weapons, it could change the world."



Members of the 341st Missile Security Forces Squadron perform a perimeter sweep March 16, at a missile alert facility near Malmstrom Air Force Base, Mont. Security forces members regularly check the perimeter for any signs of a breach, as well as cleanliness. (U.S. Air Force photo/Airman 1st Class Dillon Johnston)

Having a mission which reaches global audiences puts a big spotlight on everyone involved, and perfection is demanded of the defenders, which they take to heart and strive for when guarding the MAFs and launch facilities.

"We really can't afford to slip up," Kreiger said. "As we've seen in recent media, people are watching - people are paying attention to what we are doing out here. It doesn't feel like that when all you see is fields and cows, but when I read about the last (base inspection), I read about it in the BBC."

In order to keep up a standard of excellence in the squadron, Kreiger tries to instill the importance of

the mission into newer missile field defenders.

"One of my greatest accomplishments is training all the new people to do this job," Kreiger said. "Helping them realize that what we do is important, and hopefully they'll pass that along as this mission continues."

One of those new security forces members is Airman 1st Class Russia Zamarripa, a 341st MSFS security response team member. Taken under the wing of the more seasoned security forces members, she has learned a lot about the mission in her short time here.

"One of my favorite parts of being in the field is just getting to learn every-

thing," Zamarripa said. "I didn't even know that there were missiles in Montana. Just knowing that there are nuclear weapons here and that we are securing them is pretty cool."

Being new to not only the missile field, but security forces as a whole, Zamarripa has had to adjust to the unusual schedule of a defender.

"I'm still learning," she said. "Just staying up during a night shift (is a challenge)."

A more universal challenge she encounters, however, is simply having to get along and work cohesively with a group of individuals.

"Having to work with a big flight, there are different personalities," she explained. "(I get through any difficulties) by staying positive and not letting things get to (me), and doing what (I'm) told mostly.

"But I'm really happy with this, it's not a bad job at all," she added.

Although it can sometimes be a source of stress, Kreiger said he believes the Airmen at the MAF are a resource to be used for the positive effects of comradery.

"We're almost like families out here," he said. "It's kind of cliché to say, but it's true. I don't really know too many people outside the people I post with. We live with them - we live here just as much as we live at home, so we definitely take care of each other."

Having a stable support structure in the missile field is especially important when living a life split between home and work.

"I know for the folks that are married, especially the ones that have children, it can be tough," Kreiger said. "And that's why we have

to look out for each other. We're so close, so we're always there for each other."

This family-like support extends not only to the security forces personnel, but to everyone working at the MAF.

"You have to have a good working relationship with the missileers," Kreiger said. "Not just comradery, but good professional relationships with the others posted out here, whether it's the facility managers, the chefs or the missileers."

"We're all doing the same mission," he added.

Through comradery, knowledge in the mission and steadfast dedication, the security forces members from Malmstrom keep the ICBMs, which provide nuclear deterrence to the U.S., safe and on alert 24/7.

**HARTMAN from page 1**

Hartman, who works with advanced military fighter engines, expressed gratitude for the recognition.

"I am very grateful to be recognized at this level," Hartman said. "Everything that we do in test is very much a team effort. AEDC performs work that is not only exciting but crucial to the warfighter and I am happy to be a small part of that. Every day I get to come through the gate and work with some of the best and brightest professionals in the industry. I look forward to continuing my career at the world's premier test complex."

Hartman has four years of service with AEDC and is a resident of Tullahoma.

# AFMC promotes Strengthening Workplace Relationships campaign

By Air Force Materiel Command Wellness Support Center

**WRIGHT-PATERSON AIR FORCE BASE, Ohio** – During the months of April and May, Air Force Materiel Command will promote its Strengthening Workplace Relationships campaign.

Building and maintaining good work relationships is the key to a positive work environment. Many full-time employees spend more of their waking hours with fellow staff than they do with their families or personal friends. Co-workers rely on each other to contribute support, expertise and other resources to fulfill the AFMC mission. Benefits of establishing positive workplace relationships include enhanced teamwork, improved employee morale, increased productivity and higher employee retention rates.

To encourage positive workplace relationships:

- Be friendly and approachable to co-workers.

- Communicate effectively – The best way to connect with co-workers and reduce potential conflict at work is through open and honest communication. Your co-workers are not mind readers, so it is important to understand the need for two-way communication.

- Take responsibility – If you fail to meet deadlines and commit-

ments, you affect the work of other employees. If you can't complete a task on time, make sure you keep everyone involved in the loop.

- Respect people's time – Be mindful of a colleague's workload when you stop by to chat. During scheduled meetings, don't make others wait for you.

- Clarify roles – Knowing everyone's role and being familiar with the responsibility of those roles creates efficiency and flexibility. Review responsibilities when action planning.

- Be professional – Rise above office gossip. It can erode your credibility and trust.

- Participate in social events – These are great opportunities to mingle with everyone at your workplace regardless of their position. The healthy connections formed during these events will make it easier to interact at work.

Good workplace relationships and a positive work environment are important to fulfill the AFMC mission. The key to avoiding a stiff and unfriendly work environment is to treat others as you wish to be treated.

Resources on strengthening workplace relationships are available. Civilian employees can contact the Employee Assistance Program for free, confidential counseling services and in-person presenta-

tions at (800) 222-0364, or by visiting the EAP website at [FOH4YOU.com](http://FOH4YOU.com). Active duty military can contact Military One-Source at (800) 342-9647, or by visiting [militaryonesource.com](http://militaryonesource.com).

For additional information on base resources for strengthening workplace relationships, visit [AFMCwellness.com](http://AFMCwellness.com) or contact your local Civilian Health Promotion Services team.



## Professor Joseph Schetz conducts three-day short course



**Dr. Joseph Schetz (center)**, an endowed chair professor from the Department of Aerospace and Ocean Engineering at Virginia Tech, visited the University of Tennessee Space Institute (UTSI) to give a three-day short course on High Speed Boundary Layers from April 15-17. He covered all aspects of boundary layer theory from the low-speed laminar flow regime up through hypersonic turbulent flows. In addition to boundary layer theory, Schetz drew from his extensive experimental and computational background to offer an applied perspective on the implementation of test techniques and computational tools to the study of fluid boundary layers. The course was attended by more than 70 individuals from AEDC, UTSI, and UTC. Pictured with Schetz is Dr. Craig Morris (left) with ATA and Dr. John Schmisser with UTSI. (UTSI Photo)

## This day in espionage history

By AEDC Industrial Security

May 4, 1989 – Craig Dee Kunkle changes his plea to guilty, sentenced to 12 years

May 5, 1989 – Ronald Craig Wolf arrested for selling classified info to an undercover FBI officer posing as a Soviet

**Ronald Craig Wolf**

- ❖ May 5, 1989, arrested for attempting to sell classified documents to an undercover FBI agent
- ❖ Motivated by money and revenge for his treatment by the U.S. government
- ❖ Attempted to pass Top Secret documents concerning signals intelligence
- ❖ Feb. 28, 2990, Wolf pleaded guilty, sentenced to 10 years in prison

May 7, 1997 – Robert Chaegun Kim pleaded guilty to one count of conspiracy to commit espionage

May 11, 2002 – Robert Philip Hanssen sentenced to life in prison

May 14, 1984 – James Durward Harper received a life sentence for six counts of espionage

May 19, 2008 – Almaliki Nour sentenced to 10 years and one month, stripped of citizenship

**Almaliki Nour**

- ❖ 1998, used a false identity on forms applying for U.S. citizenship
- ❖ 2003, used same alias to get a position as an Arabic translator for the L-3 Titan Corporation
- ❖ At Titan, granted Secret and Top Secret clearances
- ❖ Took several classified documents from the U.S. Army regarding coordinates of insurgents' locations which the Army was targeting and plans for protecting Sunnis on their pilgrimage to Mecca
- ❖ December 2005, pleaded guilty to using a false identity to acquire U.S. citizenship
- ❖ Feb. 14, 2004, pleaded guilty to being in unauthorized possession of classified documents

May 23, 1985 – Thomas Patrick Cavanagh sentenced to two concurrent life terms in prison

# Astronaut and UT alumnus Barry Wilmore to speak at Space Institute

By University of Tennessee Space Institute

TULLAHOMA - Tennessee native and University of Tennessee graduate, NASA Astronaut Barry "Butch" Wilmore spent more than five months aboard the International Space Station (ISS). He served as Commander for part of that mission.

Wilmore will give a presentation entitled, "Life aboard the International Space Station" on May 18 at 10 a.m. in the auditorium of the Tennessee Space Institute. The event is free and open to the public. Doors will open at 9 a.m. Seating is limited and available on a first come first serve basis.

Wilmore will share his experiences about working and living in space. He has logged more than 178 days in space during two missions, the first of which was on Space Shuttle mission STS-129 in 2009.

During his recent 167 day mission aboard the International Space Station, Wilmore completed three spacewalks, became the first person to use a 3-D printer



NASA Astronaut Barry "Butch" Wilmore (Photo provided)

aboard the station and assembled the very first tool, a socket wrench, constructed entirely in space.

He has been an astronaut for the past 15 years, piloted the Space Shuttle, and commanded ISS's 42<sup>nd</sup> Expedition. Prior to joining NASA,

he spent several years as a test pilot in the Navy where he logged more than 6,800 flight hours and 663 carrier landings.

For more information and to reserve your seat, call 393.7402 or email [wilmore@utsi.edu](mailto:wilmore@utsi.edu) by May 6 or visit <http://www.utsi.edu/astronaut>.

# Lab developing biosensing capabilities

By Michele Eaton  
88th Air Base Wing  
Public Affairs

**WRIGHT-PATTERSON AIR FORCE BASE, Ohio (AFNS)** – Air Force researchers are discovering just how useful natural materials may be in developing biosensing capabilities for Air Force mission needs.

The Air Force Research Laboratory's Materials and Manufacturing Directorate (AFRL/RX) at Wright-Patterson Air Force Base, is conducting ground-breaking research in how the molecular structures that make up some of nature's most interesting materials interact with nonbiological materials to create effective, low-cost and easily manufactured sensing platforms.

According to AFRL/RX research team lead, Dr. Rajesh Naik, biological materials – like proteins – are unique in their ability to transform themselves and interact with nonbiological agents to create capabilities that meet military biosensing needs, like monitoring Airman performance, such as fatigue, cardiac function, stress and other biological markers in real-time, in a variety of mission settings.

Peptides, a shorter version of a protein, are highly selective and stable. They can be combined with sensitive nanomaterials like graphene or gold to develop versatile sensing platforms

capable of achieving ultra-sensitive, molecular detection of certain biological or chemical signatures in the body.

"The fundamental question for us is: What are the materials concepts that will help us develop robust, low-cost, easily manufactured biosensing devices that the Air Force can use in the field?" Naik said.

The biosensing needs of the Air Force are straightforward – commanders want information to tell them the immediate physical status of an Airman. Some of the body's chemical changes are minuscule, but even the smallest differences can provide insight about an individual's physical state and serve as early indicators of an Airman's performance during a mission.

"Just like in clinical diseases, a lot of information resides at the molecular level," Naik said. "In some instances, appearance of recognizable signs and symptoms of a disease is a bit late. You could have caught that condition by examining certain low-level biochemical signals."

Bio-sensing platforms have to be sensitive enough to detect low-level signals, yet robust enough to withstand extreme temperatures and altitude. They need to be comfortable, lightweight and long lasting enough to survive an Airman's

mission, and inexpensive enough to manufacture easily and within acceptable costs.

It's a tall order, and to meet it AFRL/RX has partnered with the 711th Human Performance Wing, as well as experts from several industry and academic institutions, including Washington University in St. Louis, and MC10, a company that provides wearable, flexible electronic sensing expertise.

The team is developing non-invasive platforms that include a comfortable, long-lasting patch made from biocompatible materials that can be printed with electronic sensors and worn on the body for several days at a time.

Also being developed are sensors made of lightweight, inexpensive filter paper that optically detect minuscule changes in the body's chemistry and a platform that uses graphene's unique electronic capabilities to develop biosensing capabilities that are selective for "state-of-the-body" markers they detect.

To make it all work in a way that can be translated onto the mission field, the team is also working to perfect a portable hub for displaying changes in a variety of bio-markers. It would need to be inexpensively made, easily transported and able to be used with a mobile platform, like a smart phone.

Certain natural materials offer AFRL researchers and collaborators the potential to control the chemistry needed for bio-sensing. When researchers can control the chemistry, the potential for selective, ultra-sensitive sensors expands significantly. When it can be developed into a wearable or disposable inexpensive device that Airmen can take with them into the field, it becomes a game changer.

What's next? MC10, in partnership with AFRL, is currently developing a Perspiration & Temperature Cockpit Conformal Health monitor (PATCH), a wearable system for real-time characterization of sweating, temperature and activity, according to the MC10 senior program manager, Dr. Brian Murphy.

MC10 is developing an evidence-based understanding of pilot response to physiologic and cognitive "overload" to characterize pilot (physical and cognitive) performance, and monitor and optimize physical and cognitive states and pilot performance during prolonged operations in extreme conditions. The PATCH can be integrated into a helmet, under-arm and/or other body regions and will monitor sweating rates, sweat conductivity, skin temperature and physical activity, as a function of time.

AFRL/RX is also partnering with the Washington University in St. Louis to develop a paper-based sensing device. According to Dr. Srikanth Singamaneni, a professor at the Washington University at St. Louis School of Engineering and Applied Science and researcher in nanomaterials for biology and medicine, the collaboration is the perfect pairing of expertise in nano-material-sensing elements and bio-recognition elements to create a low-cost point-of-need device.



# For AEDC riders, motorcycles, motor scooters, mopeds PPE requirements include:



Requirements for wear of personal protective equipment (PPE), moped requirements, and two-wheeled vehicle safety requirements apply to military personnel on and off the installation. Nonappropriated Funds (NAF) and Department of the Air Force (DAF) civilians must comply with the above requirements when operating any vehicles on base and when in an official duty status off base. Dependents and contractors must comply with the above when operating any vehicles on base.

• **Only operators**

may ride mopeds – no passengers.

• **Headlights** (when equipped). All motorcycles, mopeds, motor scooters, three wheeled vehicles and ATVs will have headlights turned on at all times when operating on a DOD installation on or off-road, except where prohibited during military mission or by state, local or host nation law.

• **Rear View Mirrors.** Motorcycles will have both left and right rear view mirrors mounted on the handlebar or fairing.

• **Head Protection.** A helmet, certified to meet current Federal Motor Vehicle Safety Standard No. 218 (DOT) or Snell Standard M2005 or higher,

shall be worn and properly fastened under the chin for the operator and passenger.

• **Eye Protection.** Goggles, wrap around glasses, or a full-face shield designed to meet or exceed American National Standards Institute (ANSI) Standard Z87.1, or UNECE 22.05 or BS6658 in effect when manufactured, will be properly worn by the operator and passenger. A windshield does not constitute proper eye protection.

• **Protective Clothing.** Wearing of long sleeved shirt or jacket, long trousers and full-fingered gloves or mittens is required for operator and passenger. Gloves or mittens will be made from

leather or other abrasion-resistant material. Wearing of a motorcycle jacket and pants constructed of abrasion resistant materials such as leather, Kevlar® or Cordura® containing impact absorbing padding is strongly encouraged. Riders should select PPE that incorporates fluorescent colors and retro-reflective material.

• **Garment Visibility.** Motorcycle riders and passengers must wear brightly colored or reflective outer upper garment when the motorcycle is in operation.

• **Foot Protection.** Sturdy, hard-soled shoes, over the ankle footwear that affords protection for the feet and ankles.

**BEWARE**  
of CREATIVE  
DATA THEFT  
METHODS



# Milestones



Mark Chappell



Jeannie Bowden  
35 years, Security Manager/Facility Security Officer  
ATA Mission Support Department

*What is your most memorable AEDC moment during your years of service?*

“Working in the AEDC test areas was such a great experience that I truly enjoyed. When I was given the opportunity to manage the security operation in 1998, I developed an even greater appreciation for the wonderful people at AEDC. I am so proud to be part of a mission that makes the U.S. Air Force and Department of Defense the best in the world. I believe in what is accomplished by AEDC people every day. When the workforce earned a superior rating during the 2012 AF annual security inspection, and that same year, the AEDC Information Protection Team won the 2012 HQ AFMC IP Team of the Year Award, I was so proud to have been part of that – together, those were the highlights of my 35 years of service at AEDC. What really makes security meaningful at AEDC is the people who understand that what we do matters, that we make a difference – people who will do all they can to keep things secure “on their watch.””

## 35 YEARS

Jeannie Bowden, ATA  
Mark Chappell, ATA  
Norman Parsons, ATA

## 30 YEARS

Alecia Davis, ATA  
Mickey Gipson, ATA  
Mike Hamby, ATA  
Cheryl Posey, ATA  
Doyle Shettleworth, ATA

## 25 YEARS

Walter Cook, ATA  
Jorge Moreno, ATA  
Michael Williams, ATA

## 20 YEARS

William Burnette Jr., ATA  
Angelia Garrard, ATA  
Sheree Hidalgo, AF  
Shannon Medley, ATA  
Larry Underwood, ATA

## 15 YEARS

Laura Bobo, ATA  
James Cashion, ATA  
Edward Sexton, ATA

## 10 YEARS

Robert Bradford, ATA  
Wendy Carr, ATA  
Alvin Cleek, ATA  
Keena Cornelius, ATA  
Michael Dingwall, ATA  
Joshua Johns, AF  
Scott Mullins, ATA  
Sharon Vance, ATA

## 5 YEARS

Joan Burlew, NAF  
Phillis Brown, NAF  
Randy Goodwin, ATA  
Nikolas Marshall, ATA

## RETIREMENTS

Hugh Massengill Jr., ATA

## NEW HIRES

Casey Anderson, NAF  
Whitney Blevins, AF  
Dustin Boss, AF  
Kirk Butler, AF  
Paul Cox, ATA  
Nicholas Edwards, AF  
Stephanie Hill, NAF  
Aimee Honeycutt, AF  
Emily Howell, NAF  
Mary Jeffery, NAF  
Eugene Mittuch, AF  
Troy Morrison, ATA  
Sydney Pearson, NAF  
Robert Porter, ATA  
Tracy Staines, AF  
Andrew Stallings, NAF  
Michael Walker, ATA  
Deanna Wright, AF

## PROMOTIONS

Calvin Eads, ATA

## ROAD from page 2

my coma on Sept. 8, 2012, with no idea what was going on or what had happened.

I soon realized the extent of my injuries and rapid weight loss. Before the accident, I was healthy and fit for a 46-year-old male. My hobbies also included Mixed Martial Arts fighting in Alabama, Kentucky and Tennessee. I went from a healthy 190-pound male to a 132-pound male. I had worked hard to keep my physique in shape for my age.

My memory loss was the worst part of the traumatic brain injury. I had complete memory loss due to the frontal lobe injury. I lost my sense of taste and smell as well and I was told that this would never repair itself and I would have to adjust my life to living without these two senses.

Well I thank God that he made the choice to let me continue to live on this earth when doctors gave up on me recovering at all. My wife and I were divorced after I was released from the hospital. This type of accident was said to put an emotional strain on any relationship. And divorce was usually the outcome.

I’ve never met or talked with the lady who was driving the other vehicle. I know only that the mistake she made that night has cost me dearly and changed my life forever. I wish her no ill will and do not hold any type of grudge against her. I do wish she had paid attention to the traffic that night and made the correct decision on which lane to enter as she was pulling onto the highway.

If there’s anything I could say to anyone about this accident, its simple; never give up on living life. Never stop trying to overcome any adversity you have in life. I had an entire town praying for me just to survive the accident. I truly feel God heard this plea from everyone and stepped in to save my life. It



After surviving a motorcycle accident on July 26, 2012, Jimmy Richardson, an instrument technician with the ATA Test Operations Branch, is doing well and he continues physical therapy to maintain his strength. His doctor plans to remove metal supports from his leg bone in the coming months. (Photo by Raquel March)

wasn’t my military career that gave me the strength to keep trying. It was my relationship with Christ, knowing that my story was already written. I was just living it like it was meant to be.

If anyone you know has this type of injury, the only words I can give are stay confident in a complete recovery.

Before my accident I was a 190-pound bike building, cage fighting, family man. At the low point of my life I was a 132-pound man, getting a divorce and changing my way of life. I still kept my faith that God knew what I needed and let it happen as he saw fit. I’m proud to say that as of now I’m a 185-pound man who has given up on cage fighting for sure but I still love the feeling of building things. So I’ve started building old cars. I have three so far that I drive daily.

I miss the feeling of riding motorcycles and the freedom it offers. I plan to continue my physical fitness routine till I feel

comfortable with my progress. I hope to see everyone at the fitness center so that we can all make time to remain healthy.

Also pay attention while driving. Use your mirrors constantly, not your phone. Pay attention to the road like your life depends on it. Use and teach the occupants in the vehicle to be on the lookout for things that may be happening around you.

The more eyes there are in the vehicle, the more attention that should be paid to surroundings. There’s only one driver but several people in the car makes the driver more alert.

It only takes 30 seconds to pull over and answer your phone. Try not to be a 3,000-pound missile on the road.

(Jimmy Richardson is an instrument technician in the ATA Test Operations Branch and a resident of Tullahoma. He worked at AEDC from 2008-2010 and after a layoff returned to work for ATA in 2014.)

**MY STRENGTH IS FOR DEFENDING**

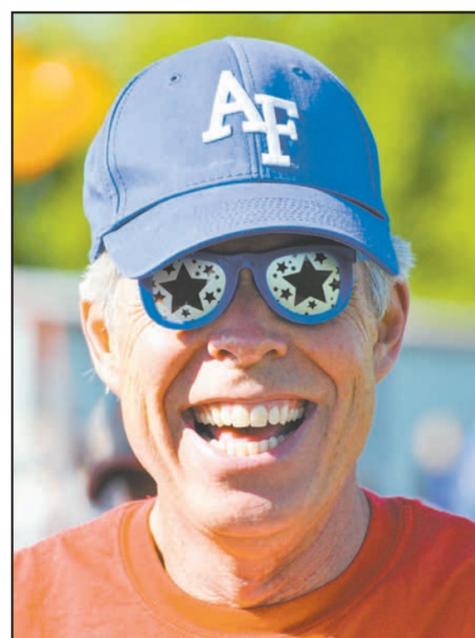
**AEDC Victim Advocates Hotline:**

**(931) 581-7494**

Preventing Sexual Assault is part of our duty

Visit: [MyDuty.mil](http://MyDuty.mil)

# 2015 Area 13 Special Olympics



(Photos by Rick Goodfriend)

## TEST from page 1

team to perform space test and evaluation in a ground-based combined environments facility.

STAT testing, like this test for the Navy, involves recreating space environments from low earth or-

bit to geo-synchronous orbit in order to expose systems-under-test to natural and induced conditions.

Since the test team can simultaneously combine these effects on components, subsystems and even full-up satellites, it provides unique knowledge leading to the technology maturation, acquisition development and risk reduction, operational tactics, techniques and procedures for operators of such space-based systems.

Prior to the STAT capability, the team conducted similar testing in the Characterization of Combined Orbital Surface Effects (CCOSE) facility. However, testing in CCOSE was on a much smaller scale, 2-by-2 inches as compared to the STAT chamber's 30-by-30 inch test section.

Examples of testing the team has conducted include subjecting solar cells, electronics and thermal control coatings to the conditions found in space. In addition to real-time orbital simulation, the team can accelerate long-term exposure and effects that the space environment has on hardware.

The STAT chamber is 7 feet by 10 feet in diameter and can provide uniform exposure from various space environmental sources. The chamber's design allows the team to access either the sources or the systems-under-test while maintaining test conditions in the remainder of the chamber interior.

The STAT chamber is capable of testing anything from large-scale satellite components to small-scale satellites.

# 2015 Area 13 Special Olympics



