



# HIGH MACH

Serving the World's Premier Flight Simulation Test Center



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## AEDC test team reacts to first orbital flight test of X-37

By Philip Lorenz III  
Technical Writer

The U.S. Air Force-Boeing X-37B orbital test vehicle (OTV) launched into space atop an Atlas V booster from Cape Canaveral, Fla., April 22.

The launch caught the attention of engineers, technicians and craftsmen at AEDC who supported the X-37 program over the years.

"It's great to see the data we provided from Tunnel 9 on the X-37 directly supporting the hypersonic flight test," said Joe Coblisch, projects group team leader at AEDC's Hypervelocity Wind Tunnel 9. "It's an exciting time in the field of hypersonics."

"In the flight regime of hypersonics, we test cutting-edge experimental configurations that do not always make it to flight," he continued. "Flying at hypersonic speeds can present extreme design challenges to system developers and developing cost-effective solutions in today's economic environment can be difficult on shrinking budgets."

Tunnel 9 supported the X-37 twice while it was a NASA program, first in 1999 and again in 2003.

"Both tests looked at high alpha – up to 60 degrees angle of attack – reentry aerodynamics,"

Coblisch said. "[This] required the Mach 14 capability at Tunnel 9, being it is the highest Mach number wind tunnel in the U.S. capable of collecting integrated force and moment data."

John Hopf, a senior project engineer at AEDC, is proud of the role he and his coworkers had in testing the X-37 in the von Kármán Gas Dynamics Facility Tunnels A, B and C in 2001 and 2004.

"I consider the X-37 jet interaction test my favorite test during my 24-year career at AEDC because it served as a valuable learning opportunity for me by offering numerous technical challenges," he said. "I relied heavily on the expertise of a very experienced and dedicated core test team at VKF to meet and exceed the customer's expectations by achieving the all of test objectives with a minimal number of delays or problems."

According to Air Force officials, the X-37B is similar to the space shuttle except it is about a fourth the size and unmanned.

The OTV, at 27.5 feet long with a 15-foot wingspan, will operate in low Earth orbit like the space shuttle and will "take a suite of next-generation technologies to orbit."

The X-37B will provide a flexible space test platform to

conduct various experiments and allow satellite sensors, subsystems, components and associated technology to be efficiently transported to and from the space environment where it will need to function.

A number of new technologies will also be tested on the X-37 itself.

"If these technologies on the vehicle prove to be as good as we estimate, it will make our access to space more responsive, perhaps cheaper, and push us in

See X-37, page 3



Project engineer Joe Norris puts the finishing touches on the X-37 model prior to testing at Mach 14 in Tunnel 9.



The X-37B Orbital Test Vehicle waits in the encapsulation cell of the Evolved Expendable Launch Vehicle April 5, at the Astrotech facility in Titusville, Fla. Half of the Atlas V five-meter fairing is visible in the background. (Courtesy photo)

## UTSI, AEDC collaboration leads to improved capability in space chamber

If it doesn't exist – build it.

Faculty, staff and students at the University of Tennessee Space Institute (UTSI) helped AEDC do exactly that by building a precise electric propulsion (EP) thrust stand.

According to Dr. Trevor Moeller, assistant professor at UTSI, EP is a form of an in-space rocket motor that is efficient but has very low thrust.

Conventional chemical fuels provide high thrust, but are limited by the amount of fuel carried to orbit. Even communications satellites, which are in geostationary orbits, carry hundreds to thousands of pounds of fuel.

EP provides an alternative that requires vastly smaller amounts of fuel because its power comes from the sun.

"A thruster that weighs 200 pounds might produce a half pound to a pound of thrust maximum," Dr. Moeller said. "That's why we need this precise balance mechanism – because of the low thrust levels you have to have a precise measurement."

Joel Davenport, manager of technical research support at UTSI, compared the thrusters to a common, everyday object.

"A house fly weighs 10 milligrams," he said. "We can resolve the thrust that a common house fly would create if it pushed on this mechanism."

According to Davenport, the thrust stand is a very precise, self calibrating balance system that utilizes a Laser Gap Displacement Transducer (LGDT) in its final measurement stage. In order to maintain this precision, a reference platform is automatically leveled to within 1/1000 of a degree of perfect level.

Even slight variations in temperature affect the measurements, so chilled water is constantly circulated through it to maintain a constant temperature.

The stand is remotely controlled, calibrated and monitored through an intuitive National Instruments LabView control and data acquisition system also developed at UTSI.

Because UTSI was heavily involved in the early stages of EP testing, they were the prime candidate to help build a vertical EP thrust stand that will be delivered later this year to the center's 12-foot vacuum chamber.

"They have expertise as well as contacts with others in the EP world, both NASA and within academia," Jim Burns, 718th Test Squadron lead for space chambers testing, said. "By working with UTSI

we are able to tap that range of expertise much more effectively than trying to duplicate it in house."

According to Burns, AEDC saw the need for EP thrusters and began development.

"In the early part of this decade, the nation was looking heavily at EP for all classes for spacecraft, both commercial, DoD and scientific," Burns explained. "One of the important and often forgotten lessons about test facilities is you have to plan and build a test facility before the need arises – working on the EP thrust stand is based on getting ahead of the curve and being ready when the customers need us."

Once the stand is installed, AEDC's goal is to build the customer base.

"We're just getting started," Burns said. "We need the thrust stand to have something to offer to our customers."



### Earth Day Celebrated

AEDC celebrated the 40th anniversary of Earth Day April 22. The fifth grade energy team from Robert E. Lee Elementary School entertained the attendees at the Earth Day Fair. Christina Norman, technical specialist in ATA Environmental Quality, coordinated the Earth Day Fair and related activities. For more photos, see page 7. (Photo by Rick Goodfriend)

### New expansion joint installed



Construction crews from Chicago Bridge & Iron Constructors Inc. install a 96-inch expansion joint in the new stainless steel duct connecting the new Desiccant Dryer Unit Facility and the ASTF high stage compressors. Eight new dryer units combined with two refrigeration systems will provide dry air to support turbine engine testing. The \$28.2M Turbine Engine Dry Air Capability (TEDAC) project is 75 percent complete with completion planned for August. (Photo by Jerre Martin)

## HIGH MACH

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An Air Force Materiel Command Test Center

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### Core Values

- Be accountable for our own actions
- Ensure the safety of individuals and equipment
- Demonstrate the highest integrity and ethical standards
- Communicate clearly and openly
- Deliver professional and technical excellence
- Nurture, enable and treat people fairly
- Align with customer goals and objectives
  - Use disciplined and innovative processes
  - Continually improve in all that we do



### Core Values

- Integrity first
- Service before self
- Excellence in all we do

# A Second "Call to Arms"

By Col. Michael Panarisi  
AEDC Commander

If you're ever going to sink your teeth into one of my messages, please make it this one.

What I'm about to share with you, and ask of you, is serious.

Across the USAF, our teammates are suffering. We don't fully understand why, but the outcomes are real.

We are losing members at an unprecedented rate, both military and DoD civilian. While we've tried to reverse the trend throughout the year, we aren't succeeding, so we're enlisting the entire government workforce to help figure this out.

We haven't set the exact date, but in the next couple weeks, we will "Stand Down" and collectively pursue answers.

Coincidentally, summer is upon us, and we know that statistically, we're facing additional losses, and our mission is to find ways to prevent any and all we can.

Across the USAF, suicide rates are at all time highs, as are accidental deaths from reckless behavior. I have the unfortunate task of reviewing the daily "Significant Events" memo, and it blows my mind.

Just about every day now I read about the loss of another teammate. Motorcycle accident. Auto accident. Boating accident. Gunshot wound.

And about once a week, a suicide. I've never seen anything like it in 25-plus years. We've got to find answers.

We are so blessed here. Our work force, though stressed, remains amazingly motivated, determined and devoted to both our mission and each other.

I see proud people, beaming at what they've accomplished, and eager to show what they can do. I see frustration too, and even occasional "disenfranchisement."

But I also see deliberate, focused efforts to correct environments that lead to these perceptions. We're not perfect, but frankly, I wouldn't want to be anywhere else.

I've always been exceedingly proud of what I have bragged about as a "brilliant work force."

Innovators, dreamers, "can-do-ers" and those that just plain old know how to get things done.

If anyone in the country can figure this out, it's us. So we're going to spend a day doing just that.

General Hoffman has asked us to answer some hard questions: How do



Panarisi

we prevent high-risk behavior while operating motor vehicles? How do we identify, reach out and intervene to prevent suicide? How can we be better Wingmen?

I'll add to the list ... What are we doing here that we can offer the rest of the USAF? What can we predict, and defend against this upcoming "101 critical days of summer?"

The day's activities will be a mix of group and unit activities.

We're counting on the small, discrete discussions to generate the real value.

Be honest, be frank and do not leave the discussion thinking "I should have mentioned ..."

And in the end, if you just don't think your voice was heard, get to me.

We're on a mission to change a culture. We won't see results overnight.

But we will find a way. I know we can.



Since You Asked...

"Since You Asked ..." is a question and answer-type segment where AEDC personnel - military, DoD civilians and ATA contractor and subcontractor employees - are asked random questions about every day topics. The opinions displayed do not necessarily reflect the views of the Air Force, DoD or ATA.

"Flash Gordon because he was adventure-focused in a futuristic setting and he used cool devices not yet invented."



Ashley Brown



Derick Daniel



Michael Glennon



Connie Northcutt

"Garfield because he was always getting into some kind of trouble."

"Wiley Coyote because of his safety record."

"Betty Boop because she was cute and very classy."

## Who was your favorite cartoon character as a child and why?

## Help is available for sexual assault victims

By Staff Sgt. Heather Stanton  
4th Fighter Wing Public Affairs

**Seymour Johnson AFB, N.C. (AFNS)** - Nearly 600 sexual assaults were reported throughout the Air Force in fiscal 2009.

According to Department of Defense officials, the majority of men and women who experience a sexual assault, 78 percent and 79 percent respectively, choose not to report the incident.

Victims don't report sexual assaults for various reasons.

They may blame themselves or think others blame them for what happened. They may fear their career will be jeopardized because of their involvement in an investigation or that others may question their lifestyle and choices.

The bravest thing a victim can do after a sexual assault is report it, and this is why I became a sexual assault prevention and response program victim advocate.

I wanted to do whatever I could to help victims through the recovery process and make reporting the incident as easy as possible for them.

A victim advocate is a fully trained volunteer who provides one-on-one direct support to a victim. They assist victims through the initial response, investigation, legal and recovery processes.

Although advocates don't provide clinical counseling or legal and investigative guidance, they do provide information on available options and resources enabling the victim to make an informed decision.

Three reporting options are available to victims of a sexual assault: unrestricted, restricted and independent.

With an unrestricted report, the victim receives medical treatment, to include a sexual assault forensic examination, counseling and advocacy support.

Through this option, the victim's chain of command is notified, along with law enforcement and legal officials. An investigation begins and could go to a trial if enough evidence is available.

A restricted report allows the victim access to all available support agencies, but an investigation isn't started.

Restricted reports are only reported to the SARC, a victim advocate or health care provider.

With this type of report, victims have the option to change from a restricted to an unrestricted report at a later time.

Independent reports are treated as unrestricted reports, but a person other than the victim initiates the report.

A large part of being a victim advocate is assisting with the recovery process. A survivor of rape, sexual abuse or assault will never fully forget what happened.

A key part of recovery is for the victim to accept what happened and realize they aren't the one to blame.

Recovery involves the victim taking back the part of their life the perpetrator took away.

The first step to recovery is getting help. Before disclosing a sexual assault to anyone, victims should contact the SARC to discuss available options. If a report is first made to someone other than the SARC, victim advocate or health care provider, that person must report the assault.

Immediately after an assault, victims should call the SARC for help. They shouldn't bathe, change clothes, brush their teeth or eat or drink anything.

Doing any of these could void forensic evidence. A victim shouldn't disturb or clean up the crime scene in case investigators need to collect evidence.

A sexual assault is a life-changing experience, but there are people available who care and are willing to help a victim get through this difficult time.

For more information on becoming a victim advocate, people can call your base SAPR office.

To report a sexual assault, call the SAPR hotline 24 hours a day at 800-342-9647.

## 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 three ways: via the AEDC intranet home page, Action Line boxes at the base cafeterias 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. Michael Panarisi**  
AEDC Commander

## 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, you cannot smoke 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. In case of inclement or cold weather, employees are encouraged to use their personal vehicles if a sheltered designated smoking area is not available nearby. 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 AEDC web portal at [https://lpapra.arnold.af.mil/PORTALimages/Smoking area map. pdf](https://lpapra.arnold.af.mil/PORTALimages/Smoking%20area%20map.pdf). 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.

Regarding use of smokeless tobacco, 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. Smokeless is strictly prohibited in conference room meetings and other areas, e.g. PMEL, where Air Force regulations specifically prohibit.

- Supervisors at every level will ensure this policy is followed. Disciplinary action is appropriate for repeated violations.
- Updates to this policy will be made in the future to further align with Air Force guidelines.
- This letter supersedes previous letter dated 28 October 2006, subject as above.

# Covington to speak at UTSI graduate reception

By Madge Gibson  
UTSI

UTSI will host a reception for its graduates in the main lobby of the Academic Building from 3-4:30 p.m. May 12.

Speakers for this event will include Dr. Robert N. Moore, executive director of UTSI, and Britt Covington, executive director of AEDC.

Covington received a Bachelor of Science degree in aerospace engineering from Auburn University in 1985 and a Master of Science degree in engineering management from Mercer University in Georgia in 1991. He began his civil service career as an aerospace structural engineer at Warner Robins Air Logistics Center, Robins AFB, Ga.

Covington has served in a variety of positions in Air Force Material Command

and the Air Force Safety Center, including chief engineer and engineering technical director for the Contractor Logistics Support Aircraft Program Office, Tinker AFB, Okla. He was also an Air Force aircraft mishap investigator and technical advisor to the Air Force Chief of Safety at Headquarters, Air Force Safety Center, Kirtland AFB, N.M.

Additionally, he has served as the Deputy Director for the 77th Aeronautical



Covington

Systems Group. Prior to his current position, Covington served as the technical director for the 76th Maintenance Wing, Tinker AFB, Okla., and was responsible for the technical leadership at Oklahoma City-Air Logistics Center.

Dr. Robert N. "Buddy" Moore came to the University of Tennessee in 1981 when he joined the Knoxville faculty as assistant professor of microbiology. During his years at Knoxville, he was named head of the department of microbiology and associate dean for research and graduate programs for the college of Veterinary Medicine.

Dr. Moore led the research and graduate programs at the college and also directed the Center of Excellence in Livestock Diseases and Human Health. He directed the Comparative and Experi-

mental Medicine (CEM) graduate program, a joint program of the college and the UT Health Science Center's Graduate School of Medicine.

Dr. Moore joined UTSI in January 2010.

He was staff fellow at the National Institutes of Health (NIH), one of the world's foremost research centers before coming to the University of Tennessee. He is also an associate editor of the "Journal of Immunology" and editor of "Infection and Immunity."

Dr. Moore received Bachelor of Science and Master of Science degrees from Clemson University and his doctorate from the University of Texas at Austin.

The public is invited and persons wishing to attend this event should make reservations by contacting Charlene Hane, registrar, at 931-393-7228.

## Ramesh Gulati, AEDC best practices result in reliability book

By Shawn Jacobs  
Aerospace Testing Alliance

Ramesh Gulati, asset management and reliability planning manager with ATA, has been called an "ambassador" for AEDC.

That's because everywhere he goes – both inside and outside the company – he tries to create a "reliability culture" and spread the word about how AEDC is building and designing reliability into all of its systems.

Gulati conducts Reliability-Centered Maintenance courses at AEDC and has authored a book, with contributions by Ricky Smith, "Maintenance and Reliability Best Practices," published last year.

**HM:** Is "Maintenance and Reliability Best Practices" your first book?

**Gulati:** Yes, that was my first book. I've been teaching, preaching, practicing these best practices, and publishers were coming after me. As a part of certification here at AEDC, we have more than 130 people certified in maintenance reliability. There are many books, and this was my attempt to have in one place all the good practices. It is a documentation of some good practices that need to be implemented, and we have done many of them at AEDC.

**HM:** Who's the target audience for your book?

**Gulati:** It's mostly aimed at maintenance and reliability practitioners, designers and project managers, in fact, anybody who works with assets as an operator, maintainer or in any other capacity. I'm also working with educational institutions, so it could be adopted to classroom settings, too.

**HM:** You bring years of actual "shop floor" and management experience from different industries to the table. Is that where these best practices come from or is it more philosophical or educational?

**Gulati:** It's both, but mostly it's from my experience from day one on the shop floor. I started my career at a foundry and I was mad and upset at how the systems were designed. Over the years, I changed industries and gained experience about the right things to do.

**HM:** Terrence O'Hanlon wrote in the forward that at AEDC maintenance seems to be viewed as an "important enabler of the mission" instead of as a necessary evil or cost center. Is this the kind of culture you are trying to instill at AEDC and recommend through your book that other industries adopt?

**Gulati:** Yes. Terry O'Hanlon has seen how we have evolved from reactive to proactive in 15 years. We believe in sharing our good practices with others; that's how we learn.

**HM:** Can you define this concept of best practices?

What do you mean when you say that?

**Gulati:** Anything that produces better results than what you have been doing is a best practice. Caution: you have to tailor any practice you bring. Most people fail to do that, and that's why they are not successful. As you implement a best practice, tailor it to your needs and your environment then it will be good.

**HM:** You say that implementation is not as simple as just putting something into effect. Why is that?

**Gulati:** There are data available that more than 50 percent of RCM (reliability centered maintenance) projects don't get implemented. They stay on the shelf. It's a lot of work to implement changes, and it takes a lot of patience and management support. And that's why I say it's not that easy to do these best practices. There are a lot of challenges, and that's where tailoring comes in the picture. Anything you want to do as a best practice is a change. We don't like change.

**HM:** It's important to get the workforce to "buy into" this concept to give them a good understanding of maintenance and reliability principles isn't it?

**Gulati:** Yes. You know I started teaching 10 or 12 years ago doing two- to four-hour long classes; now I have almost two days of class. I used to twist many arms to get them in my class. Now the culture is changing, and people are coming and ready to go to the next class.

**HM:** There is also a connection between maintenance, reliability and safety. Should management and workers alike have an interest in this?

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### X-37 from page 1

the vector toward being able to react to warfighter needs more quickly," said Gary Payton, the Air Force deputy undersecretary for space programs.

"This launch helps ensure that our warfighters will be provided the capabilities they need in the future," said Col. Andre Lovett, the 45th Space Wing vice commander and launch decision authority for the mission. "The 45th space Wing (members are) proud to launch this historic mission and continue our commitment to assuring access to the high frontier."

The mission marked a number of important firsts.

"As the first U.S. unmanned re-entering space vehicle, the first of its kind,

it has been remarkable easy to work with," said Lt. Col. Erik Bowman, the 45th Launch Support Squadron commander. "Processing and preparations went extremely smooth, and there were absolutely no delays in the vehicle processing. Overall there was great cooperation between the Air Force (officials) and industry teams of Boeing, (United Launch Alliance) and Astrotech, where we process the spacecraft, to make sure everything went smoothly.

The mission as also the first launch of an Atlas V with the 501 configuration, requiring no solid rocket motors, and the first launch in five years to involved a 5-meter class fairing, Colonel Bowman



A United Launch Alliance Atlas V rocket with the X-37B Orbital Test Vehicle launches April 22 from Cape Canaveral, Fla.

said. "This vehicle is light enough to launch without the solid rocket motors even with the larger fairing, making this a rather unique configuration."

### JSF engineer to speak at AIAA meeting Wednesday

The Tennessee Section of the American Institute of Aeronautics and Astronautics (AIAA) will host a luncheon meeting at the Arnold Lakeside Center Wednesday.

The speaker, Dr. Paul Bevilaqua of Lockheed Martin, will present "In-

venting the Joint Strike Fighter."

Dr. Bevilaqua invented the lift fan propulsion system that makes the stealthy, supersonic vertical takeoff and landing (VTOL) version of that aircraft possible.

An Italian buffet will

begin at 11 a.m. (\$7.95 ALC members, \$8.95 non-members, payable at the door).

The presentation will begin at 11:30 a.m.

Please RSVP to Dr. Joe Wehrmeyer (454-4345, [joseph.wehrmeyer@arnold.af.mil](mailto:joseph.wehrmeyer@arnold.af.mil)) by May 10.

### Best Paper Award



Fred Disenzo (left), Rockwell Automation and current Machinery Failure Prevention Technology (MFPT) chairman, presents Dr. Joseph Sheeley (right) a plaque for Best Technical Paper at the 2010 MFPT Conference in Huntsville, Ala. The paper, which was co-authored by Dr. Sheeley and Cory Duggin, is titled "A survey of rotating machinery conditioned indicators." Dr. Sheeley was also part of another group of authors who were recognized by the AIAA Ground Test Technical Committee with a Best Technical Paper award. The technical paper titled "Testing of a model based predictive control system in a transonic aerodynamic test facility" was submitted at the 2010 Aerospace Sciences meeting. The paper's authors are ATA employees Mike Hamby, Brett Boylston, Steven Salita, Mike Thelen and Dr. Sheeley. (Photo Provided)

Do your part – Please recycle this paper after reading!

## In Person: Tom Irvine

By Phillip Lorenz III  
ATA Public Affairs

During the recent Aeronautics Test Facilities Users Meeting at AEDC, the deputy associate administrator for the aeronautics research missions directorate at NASA headquarters took some time to share his vision for the agency's future.

Tom Irvine, who has been involved with AEDC-related programs for years, said, "NASA's first priority is to fly remaining shuttle flights safely. However, programmatically or strategically, our top priority is to close out the Constellation program."

Irvine said part of getting closure on that program "is to foster this commercial low-Earth orbit launch capability, and not only for cargo, but human-rated [payloads] as well."

"There are a number of companies who are either doing development work now or looking at that seriously, from the small startups like Space Exploration, the Elon Musk owned company, to ULA, United Launch Associates, the Boeing-Lockheed cooperative arrangement that came out of the Evolved Expendable Launch Vehicle (EELV) program," Irvine said.

"Orbital is involved and there are a couple of others," he added. "So, one component of that is to develop, do research and develop technologies that will get us beyond low-Earth orbit and allow us to return to the Moon, to asteroids, eventually to Mars, and to what are called LaGrange Points."

"This is the area where the gravity is equal between the Earth and Moon or the Earth and the Sun, where NASA hopes to park the James Webb Space Telescope."

Irvine said a lot of work is underway or planned to pave the way for future missions to meet President Obama's space program objectives, including capabilities to take humans to an asteroid and eventually to Mars.

In a speech on April 15 at NASA's Kennedy Space Center in Florida, President Obama said his administration did not advocate doing away with all the research and development from Constellation.

Noting the success of the agency's development of the Orion crew capsule, the president called on NASA to develop a version of the spacecraft that could be launched without a crew to the International Space Station. The spacecraft would be based at the ISS as an emergency craft for astronauts living on the orbiting laboratory.

Irvine, referring to NASA's mission as out-



**Tom Irvine, the deputy associate administrator for the Aeronautics Research Missions directorate at NASA headquarters, speaks about the future of the space program before the Aeronautics Test Facilities Users Meeting at AEDC began.** (Photo by Andrea Stephens)

lined by the president, said, "We're developing heavy lift launch and propulsion technologies, crew capabilities, the human systems, and then also systems which would allow you to actually go to these places and stay for extended periods of time," he said. "Our hope is that to tie back then to AEDC or NASA test facilities to develop and test these technologies and systems."

These [future test projects] may not be on the same scale as Constellation, but they'll be on technologies or a component, subsystem and even system technologies rather than a specific vehicle development.

He said there may be a decline in the amount of work that has been done recently.

"We think that work will pick back up as we really start to invest heavily in R&D (research and development)," he said.

Irvine said there are proponents, particularly within the companies that were working on CEV and Orion capsule, Boeing and Lockheed, who are advocating leveraging the advances in technology and the test data gleaned from those programs for future projects.

"Some of them are saying, 'Hey let's not lose what we've done, if our ultimate goal is to develop technologies that will allow us to go beyond low-Earth orbit. Let's sustain or let's learn from and keep some of the technologies that we developed under Constellation.'"

Irvine also spoke about future partnerships to achieve shared and diverging objectives and goals.

"We are seriously considering international partnerships in the development of these technologies, but those talks are very much in the formative stage," he said. "We are looking at partnering arrangements and asking will those be with the Russians, the European Space Agency or will they be with the what's called JAXA, the Japanese Aerospace Exploration Agency – probably all the above and maybe even more."

"I know the current administrator, Charlie Bolden, is very interested in looking at countries that are developing aerospace capabilities, like the BRIC – Brazil, Russia, India and China. Obviously there are a lot of political and national security concerns that I am not even aware of, that we've got to work through as well."

## In Person: Derrick Hinton

Derrick Hinton, principal staff assistant and adviser to the director of Test Resource Management Center (TRMC) visited AEDC as part of a NASA-DoD Aeronautics Facilities Users Meeting.

This meeting is a result of the NASA and DoD National Partnership for Aeronautical Testing (NPAT) council that was established in 2007. The purpose of the NPAT is "to expand cooperation between the two agencies and to facilitate the agencies' establishment of an integrated national strategy for the management of their respective aeronautical facilities."

"This is the fourth users' group meeting where they [NPAT] bring in the individuals from NASA and DoD that manage and operate the facilities and then bring in the customer and industry side which also has facilities as well and that are primary users of those facilities," Hinton said. "So you get the government side and the user side together and you have cross talk. This is to make sure we understand the requirements and make sure they understand the capabilities and it's a good forum for us to try to work together corporately to make sure we are meeting the test needs."

Hinton feels the TRMC's relationship with AEDC is more of a partnership.

"AEDC has provided us, I think, real sound support in many different areas," he said. "They understand what is required and they understand what it takes to put solutions in place and get them out in a



**Derrick Hinton, principal staff assistant and adviser to the director of Test Resource Management Center (TRMC) visited AEDC as part of a NASA-DoD Aeronautics Facilities Users Meeting.** (Photo by Andrea Stephens)

timely manner so you can have the instrumentation in place, when needed and get decision quality data. That is what this partnership has allowed us to do." As the principal deputy for the Defense TRMC within the Office of the Under Secretary of Defense (OUSD) for Acquisition, Technology and Logistics (AT&L), Hinton assists in all matters pertaining to assessment of and strategic planning for the Major Range and Test Facility Base, which AEDC is one of 24 activities.

"All the large test facilities fall under the policy that we are responsible for and my director [Dr. John Foulkes] has oversight of those major ranges and test facilities to make sure we have the right infrastructure in place," he said. "That is the natural relationship, but it goes beyond that."

"We have programs within our organization where we sponsor the development of instrumentation and AEDC has a lot of expertise and we leverage

them heavily. It's a natural relationship that's proven very fruitful so far and I expect it to continue."

In addition to his duties, Hinton serves as deputy director for the Joint Investment Programs and Policy Division and is responsible for management of the Central Test and Evaluation Investment Program (CTEIP). Funding under this program is AEDC's development and work on the Space Threat Assessment Testbed (STAT).

"When you develop a satellite, you need to know how it's going to perform in its operational environment which is outer space," he explained. "How do you create that environment in a ground test facility so that you understand those natural phenomena that occur? How do you know when it's a natural threat that's occurring or whether it's a man-made threat so you can put in countermeasures to defeat them? This is why you need STAT."

See Hinton, page 8

**Do your  
part.  
Recycle  
this paper  
after  
reading.**



## Rescue center members assist with saving lives in flood

By Capt. Jared Scott  
601st Air and Space Operations Public Affairs

Tyndall AFB, Fla. (AFNS) - After flash flooding Saturday, Air Force Rescue Coordination Center officials at Tyndall worked with the Navy, Coast Guard and local authorities to search for people trapped in buildings at a Navy installation in Millington, Tenn.

A levee breach on a nearby river caused flooding of up to five feet in some areas of the housing facilities of Naval Support Activity Mid-South.

"The on-scene Navy commander controlled search and rescue operations of the installation, but requested additional air assets to assist in the search," said Lt. Col. Charles Tomko, the AFRCC commander.

After the initial call from Tennessee Emergency Management Agency officials, AFRCC members contacted Mississippi Civil Air Patrol officials, the official auxiliary to the Air Force, to conduct air patrols to assist in search efforts of the housing area of the Naval Support Activity.

"Along with Navy and Coast Guard assets that were already involved in the search, the AFRCC provided CAP aircraft to aid ground and water search crews in finding stranded people," Colonel Tomko said.

"We received the call around 4 p.m. (May 1) and launched as soon as the weather allowed us to search for people stranded in the military housing area," said Lt. Col. Carlton Sumner, the CAP incident



**A levee breach of a nearby river flooded much of Naval Support Activity-South Saturday in Millington, Tenn. Search and rescue operations saved approximately 330 Navy personnel and their family members. Coast Guard, Navy, Civil Air Patrol, local authorities and the Air Force Rescue Coordination Center all participated in rescue operations.** (Civil Air Patrol photo)

commander. "We flew from approximately 6 p.m. until we ran out of daylight. We flew an additional sortie on (May 2) to make sure we didn't miss anyone."

With the combined efforts of Navy, Coast Guard, local, CAP and AFRCC officials, 330 Navy people were rescued from the flooded Naval Support Activity housing facilities.

As the United States' inland search and rescue mission coordinator, AFRCC members are responsible for coordinating federal search and rescue activities in the 48 contiguous United States.

The rescue coordination center directly ties into both the Federal Aviation Administration's alerting system and the U.S. Mission Control Center.

In addition to Search and Rescue Satellite Aided Tracking information, the AFRCC computer system contains resource files that list federal and state organizations which can conduct or assist in

search and rescue efforts throughout North America.

The Civil Air Patrol is a nonprofit organization with 59,000 members nationwide. CAP, in its auxiliary role, performs 90 percent of continental U.S. inland search and rescue missions, and was credited by the AFRCC with saving 72 lives in fiscal year 2009.

CAP volunteers also perform homeland security, disaster relief and counter-drug missions at the request of federal, state and local agencies.

CAP members performed missions for 68 years.

"This levee breach in Tennessee is a prime example of how things can change in (an) instant," said Maj. Gen. Garry C. Dean, the Air Forces Northern commander. "In this case, the immediate response of these trained professionals ensured that all Navy personnel and dependents were accounted for. This is a great testament to the job that all the men and women involved in this joint search and rescue mission."

## Alpine pararescuemen train in the Alps for mountain rescues

By Tech. Sgt. Nathan Gallahan  
48th Fighter Wng PA

RAF Lakenheath, England (AFNS) - Some people learn within the confines of a climate-controlled classroom; others learn sitting on top of glaciers more than 13,000 feet above the surface of the earth.

Pararescuemen from the 56th Rescue Squadron here prepared for mountain operations, possibly in Afghanistan, by training within one of the world's most famous mountain ranges, the Alps, from March 27 through April 12.

During the first week, the team of 10 pararescuemen set up a base camp out of a cabin on the outskirts of Chamonix, France. Each day, they left camp and hiked into the mountains while learning how to pick the best routes of travel and spotting potential danger areas. They also trained on various rescue techniques, such as how to pull people from crevasses and how to save someone if they've been buried in an avalanche.

"We were enveloped in the training every day," said Senior Airman Nathan Simonson, a pararescueman with the 56th RQS. "I compare it to learning Spanish in a classroom versus learning and living it in Costa Rica."

They would wake up in the morning, start trekking into the mountains around 6 a.m. and stay out all day and into the night.

"There wasn't one point throughout the



**Senior Airman Nathan Simonson skis below the Matterhorn peak, which is within the Alps reaching 14,689 feet. Airman Simonson, along with six of his fellow pararescuemen and a guide, followed the Haute Route from Chamonix, France to Zermatt, Switzerland, while practicing their mountain rescue techniques.** (Courtesy photo)

training that didn't help us tremendously," said Staff Sgt. Issaiah McPheron, a pararescueman.

The Airmen said the training was essential in today's fight because mountain operations occur in Afghanistan.

The Alps provide the Airmen an environment similar to what is seen in that country. While the highest peak in the Alps "only" reaches 15,774 feet (Mount Blanc), the Hindu Kush range in Afghanistan reaches 24,580 feet (Noshaq).

"We have (pararescuemen) here who have had to save people from very dangerous and adverse mountain conditions in Afghanistan," Sergeant McPheron said. "History has taught us we need these skills and need to be trained for these conditions. We're supposed to go where other people won't go to save lives."

After the initial week of training, three of the pararescuemen had to fly home either for professional

training or for personal reasons. The remaining seven readied themselves for the next stage of their training, taking the knowledge they learned with them as they skied through the Alps along the Haute Route.

They required a guide to accurately follow the route and avoid danger areas such as frozen lakes, avalanche areas and hidden crevasses. So with 45-pound ruck sacks on their backs, the seven skied their way through 106 miles of mountains in six days. Their trek started in Chamonix, France, took them through Italy and ended in Zermatt, Switzerland.

Each night they stopped at a cabin, which were strategically constructed along the route to give mountaineers a place of rest. It was at one of these huts that the pararescuemen left their student role and fell back into the medical profession.

See Rescue, page 3

# AEDC Celebrates Earth Day

AEDC celebrated Earth Day April 22 with an Earth Day Fair in front of the Main Auditorium.

AEDC employees visited with various vendors, registered for door prizes and consumed popcorn and soft drinks all in commemoration of the 40th anniversary of Earth Day.

Vendors from the surrounding area provided useful information about recycling, biodegradable products, ornithology and other areas. The fifth grade energy team from Robert E. Lee Elementary School in Tullahoma performed energy skits. The team also had a booth and collected energy questionnaires as part of their project.

Approximately 60 fifth grade students from East Lincoln Elementary School in Tullahoma participated in an environmental awareness project by decorating canvas grocery bags with environmental messages. The bags were judged and returned to the students for their parents' use in place of plastic bags.



AEDC's Environmental Quality



Corporate Express/Staples



The Robert E. Lee fifth grade energy team



American Paper and Twine



Tims Ford Environmental Education Association



Janpak



The Robert E. Lee fifth grade energy team

Photos by Rick Goodfriend

**Book from page 3**

A reliable plant is a safe plant. A safe plant is a reliable plant. As the safety goes up, the injury rates goes down; the reliability goes up, or vice-versa.

**HM:** By the very nature of the concept, some of this book gets fairly technical, but you've made it as readable as you could.

**Gulati:** Yes. I tried not to use technical jargon. I tried to make it simple so anybody can understand it.

**HM:** You've got a chapter about work force management and the generation gap. Why is that important?

**Gulati:** When we were developing the CMRP (Certified Maintenance and Reliability Professional) exam, we found that we had to deal with people.

Right now our work force is varied and there are a lot of different gen-

erations and different ethnic backgrounds. We have to work with them, so I thought it was appropriate to talk about these things.

**HM:** You have another book that has just been published, don't you?

**Gulati:** This new book is called "The Professional's Guide to Maintenance and Reliability Terminology."

The concept of these books took four to six

years. My coauthors, Jerry Kahn, Robert Baldwin and I were working on the best practices committee of SMRP, and we were struggling to find the standard definitions of our maintenance and reliability terms.

That's where the concept started. So we documented about 3,000 items in it. It has all the definitions, abbreviations and acronyms we use a lot, and it will be a good reference

for anybody coming into the field.

"Maintenance and Reliability Best Practices," published by Industrial Press, is available at major book stores, including Amazon, Barnes and Noble and MRO-Zone.

"The Professional's Guide to Maintenance and Reliability Terminology" is published by Reliability Web.Com and is available through MRO-Zone.

**Hinton from page 4**

STAT is an effort that Hinton's organization identified as a capability gap in a strategic planning meeting in conjunction with the other military services.

"We knew we needed a STAT and AEDC has some natural capabilities in place like the Characterization of Combined Orbital Surface Effect [CCOSE] capability that was established with the subject matter expertise already here," he explained.

AEDC's work on the Total Airborne Plume Simulator (TAPS) is also being funded by Hinton's organization.

"For our aircraft systems certainly in theater where you are dealing in a hostile environment on a day-to-day basis, one of the biggest threats to our aircraft is shoulder-fired missiles," he said. "We have to put countermeasures in place and it has been a priority of the department to put those missile warning systems in place so that we can protect our fixed-wing aircraft and helicopters. Testing those systems to make sure they function as they should is very important."

He continued, "The TAPS capability is an ability for us to make that missile warning system believe that a missile is actually being fired at it. The burner portion is the most critical part of that system because it gives the correct signature and it gives it that right spatial requirement to allow it to believe that you're actually closing in on it. If we didn't have that component we wouldn't be able to build and test those kinds of systems."

Hinton began his career serving in the United States Marine Corps Reserve from 1985-1991, joining the DoD civilian work force in 1989 as a test engineer responsible for munitions Test and Evaluation with the 46<sup>th</sup> Test Wing Eglin AFB, Fla. In 1996, Hinton joined the AT&L team, then transitioning to the Office of the Director, Operational Test and Evaluation in 2001 and finally joining the TRMC in 2005.

He holds a bachelor of science in industrial engineering from the University of Alabama and masters of public administration and an acquisition core level III certification in Test and Evaluation from the Defense Acquisition University.

**Rescue from page 5**

"At one of the cabins we came across a gentleman who had an ear squeeze," Airman Simonson said. "He basically couldn't clear his ears, so we administered aid to the man and we were able to help."

Their assistance didn't stop at the cabin, all along the trail the pararescuemen came across people who needed assistance. The pararescuemen helped about five other people who were having problems with their knees, hips and lower back.

Once they concluded their route and arrived in Zermatt, Switzerland, the pararescuemen still weren't finished. Although they had already been up and down mountains for two weeks, they decided to celebrate not by relaxing by a warm fire and sipping hot chocolate, but by climbing Breithorn, one of 82 Alpine peaks which reach higher than 13,123 feet.

# ATA

## Overall Team Member of the Quarter

The Overall ATA Team Member of the Quarter is Paul Bowen. Bowen, an engineer/scientist with Dynetics, Inc., was recognized by the Advanced Missile Signature Center (AMSC) for being key to the successful technical execution of five high priority signature modeling projects. The projects were sponsored by both the Department of Defense (DoD) Central Test and Evaluation Investment Program (CTEIP) and the Defense Intelligence Agency Missile and Space Intelligence Center (DIA-MSIC). Bowen performed essential analysis and processing of literally hundreds of data sets of measured radiometric plume signatures, and associated environmental data, that are fundamental to producing the DIA-MSIC validated digital hyperspectral Enhanced Missile Signature (E-MSIG) models.



**Bowen**

## Overall Craft Member of the Quarter

The Overall Craft Member of the Quarter is Willie Hill. Hill, an electrician journeyman, was recognized for being a highly motivated electrician with a can-do attitude who takes pride in his work and has earned the respect of craftsmen and engineers basewide. Hill has worked at AEDC for 37 years, the last several of those at PWT. In that time, he has gained extensive knowledge and experience in all aspects of wind tunnel operation, including test build-up, test cart and model support system maintenance, operation and troubleshooting as well as data, control and fiber optic systems. Hill does not limit himself to his specific areas of responsibility, but continually offers assistance to plant, instrumentation and project personnel with issues whenever needed.



**Hill**



**Phillip Krepp  
Team Member  
Investments**

Krepp, engineer, was recognized for being a critical player and the design engineering "go to" for the Pressure and Hazardous Materials System (PHMS) project.



**Gayle Wasson  
Team Member  
Information Technology  
& Systems**

Wasson, administrative professional, was recognized for being a vital part of IT45 End User Hardware Support services and her work on the personnel relocation with property equipment.



**Kaleigh Hatfield  
Team Member  
Facilities Operations & Maintenance**

Hatfield, industrial engineer, was recognized for conducting productivity audits, developing asset management strategies and helping chart the improvement and data analysis efforts in FA.



**Jim Devine  
Team Member  
Facilities Operations & Maintenance**

Devine, electrical system engineer, was recognized for doing an outstanding job supporting craftsmen in both preventive and corrective maintenance work.



**Anita Hinshaw  
Team Member  
Resource Provisioning**

Hinshaw, technical specialist, was recognized for training Investments employees in the most effective way of conducting internal audits and helping them work through the audit process.



**Laurie Winton  
Team Member  
Performance  
Management**

Winton, administrative professional, was recognized for her work as the administrator of the University Program including revamping and updating the program's Web site.



**Philip Lorenz III  
Team Member  
Support Services**

Lorenz, administrative professional, was recognized for his outstanding technical writing about test facilities and capabilities, as well as specific test programs at AEDC, Tunnel 9 and NFAC.



**Derick Daniel  
Team Member  
Integrated Test & Evaluation**

Daniel, engineer, was recognized for his completion of updates to the F119 Advanced Turbine Engine data reduction code resulting in improved data throughput.



**Doug Powell  
Craft Team Member  
Resource Provisioning**

Powell, storekeeper-receiving, was recognized for being the model for what all storekeepers should strive to be and being the go-to person to explain the receiving process.



**Roger Taylor  
Craft Team Member  
Facilities Operations & Maintenance**

Taylor, electrical technician journeyman, was recognized for initiating several outstanding systems improvements including improved clearing of water detectors in PES.



**Anthony Barnett  
Craft Team Member  
Facilities Operations & Maintenance**

Barnett, electrical technician journeyman, was recognized for almost single-handedly bringing AEDC's relay testing into the 21st century, converting many manual relay tests.



**Troy Davis  
Craft Team Member  
Integrated Test & Evaluation**

Davis, working foreman, was recognized for showing his outstanding machinist abilities by fabricating and fitting all of the model samples for the THADD project.



**Morgan Underwood  
Customer Service-Internal  
Information Technology & Systems**

Underwood was recognized for delivering information assurance for operational IT systems used throughout AEDC, as validated through an external, hypercritical security inspection.



**Greg Wilson  
Customer Service-Internal  
Performance  
Management**

Wilson was recognized for outstanding customer service in the invention and development of a user-friendly Project Estimate Upload Tool.



**Rod Hoefler  
Customer Service-External  
Integrated Test & Evaluation**

Hoefler was recognized for excellence in the provision of standard and test peculiar store separation data analysis software for competing missile tests and F/A-18E/F XV test.



**Joe Migliaccio  
Customer Service-  
External  
Integrated Test & Evaluation**

Migliaccio was recognized for outstanding customer service in J-6 rocket test operations for the Rocket System Launch Program Stage III gas generator and stage life demonstration tests.

Brieding was recognized for excellence demonstrated on the F136 program in providing a remote-monitoring capability to ensure secure execution of testing.



**Tamelena Brieding  
Customer Service-  
External  
Support Services**



### Vision

"ATA will be a trusted partner in delivering best value warfighter support and assert stewardship to AEDC"

### Core Values

- Be accountable for our own actions
- Ensure the safety of individuals and equipment
- Demonstrate the highest integrity and ethical standards
  - Communicate clearly and openly
  - Deliver professional and technical excellence
- Nurture, enable and treat people fairly
- Align with customer goals and objectives
  - Use disciplined and innovative processes
- Continually improve in all that we do



# Government



**1st Lt. Rachael Clark**  
Company Grade Officer

Lieutenant Clark, investments project manager, was recognized for her attention to detail and her role as action officer of the Facility User's meeting.



**Airman 1st Class Eric Ball**  
Airman

Airman Ball, financial services technician, was recognized for being proficient at solving travel and pay issues.



**Master Sgt. Patrick Lazarus**  
Senior Non-Commissioned Officer-in-Charge

Sergeant Lazarus, quality assurance chief inspector, was recognized for initiating test facility major functional area audits which increased the inspection pass rate by 30 percent.



**Tech. Sgt. Marvin Gardner**  
Non-Commissioned Officer-in-Charge

Sergeant Gardner, weapons safety manager, was recognized for his performance during deployment to Anderson AFB, Guam, in support of Operation Enduring Freedom.



**1st Lt. Rachael Clark**  
Honor Guard Member

Lieutenant Clark was recognized for her performance, positive attitude and professional appearance during Honor Guard events.



**Richard Fraley**  
Civilian of the Quarter  
Administrative

Fraley, information technology specialist, was recognized for providing outstanding support as action officer for the HQ Air Staff Critical Asset Risk Assessment team visit.



**Randall Quinn**  
Civilian of the Quarter  
Scientists/Engineer

Quinn, aerospace engineer, was recognized for performing superbly as the lead, Rocket Propulsion Flight for the Space and Missile mission area.



**Sara Rozell**  
Civilian of the Quarter  
Clerical/Technical Support

Rozell, student trainee, was recognized for her self-motivation and demonstrated exemplary performance as a student trainee in the Financial Analysis Division.



**Vicki Bell**  
NAF  
Category I

Bell, custodial worker, was recognized for being integral in the 2010 Air Force Inns Accreditation, which recognized the Housekeeping Team as providing some of the cleanest rooms they've ever seen.



**Phillis Brown**  
NAF  
Category II

Brown, recreation aid at the golf course, was recognized for delivering excellent customer service at all times.

**To advertise in the *High Mach*, call  
*The Tullahoma News* at 455-4545**



UTSI students, Nadim Zgheib, left, and Michel Akiki, right, placed second and third respectively at the 2010 Southeastern Regional Student Conference of AIAA. The students' studies were supervised by UTSI professor Dr. Joseph Majdalani, middle. (Photo provided)

## UTSI students win at AIAA conference

Two students from the UTSI attending the 2010 Southeastern Regional Student Conference of the American Institute of Aeronautics and Astronautics (AIAA) were awarded second and third place in the Masters Division.

Nadim Zgheib won second place with his paper titled "Asymptotic Solutions for Longitudinal Waves in Solid Rocket Motors" and Michel Akiki won third place with his paper titled "Compressible Integral Formulation of the Two-Dimensional Porous Channel Flow."

The studies focused on the analytical and numerical modeling of either wave propagation or compressible mean flow description in simulated solid rocket motors. The two studies were carried out under the supervision of UTSI professor Dr. Joseph Majdalani who appears as second author on both papers.

The awards were presented to the students by Col. Keith J. Kosan, Commander, 46th Operations Group,

Eglin AFB, Fla.

The conference, held in Destin, Fla., included more than 300 delegates from 14 universities from the southeastern region. The student branches from Auburn and Tuskegee universities co-hosted the event.

UTSI Executive Director Dr. Robert "Buddy" Moore said, "We are very proud of Nadim and Michel, and their successes further confirm the quality of our graduate students, faculty and programs at UTSI."

Zgheib and Akiki are both from Kesrouan, Lebanon, and both graduated from Notre Dame University in 2007 shortly before joining UTSI.

In 2009, they received master's degrees in aerospace engineering. Akiki is working toward his doctorate degree in mechanical engineering at UTSI. Zgheib has received a graduate school fellowship to pursue his doctorate in mechanical engineering at the University of Florida in Gainesville.

# Milestones

### 35 Years

Michael Biankowski, ATA

### 30 Years

Patricia Winters, ATA  
Robert Gray, ATA  
Robert Moore, ATA  
Stephen Reynolds, ATA  
James Ordway, ATA  
Joseph Gallagher, ATA

### 25 Years

Mark Felts, ATA  
Vert Hartman, ATA  
Freida Clouse, ATA

### 20 Years

Dennis Holmes, ATA  
Carey Rose, ATA  
Roy Campbell, ATA

### 10 Years

Michael Lazalier, ATA  
Bart Jones, ATA

### 5 Years

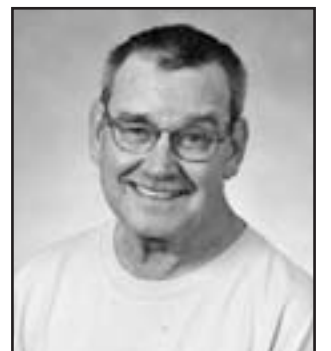
Mike Champion, ATA  
Thomas Campbell, ATA  
Stacy Parker, ATA  
Charles Ray, ATA  
Vincent Lawrence, ATA  
Bronwen Griffith, ATA  
Joel Nalin, ATA  
James Daniel, ATA  
Kenneth Vassar, ATA  
Randy Vinke, ATA  
John Allan, ATA  
Gary Hammock II, ATA  
Donna Spry, ATA  
Nicolas Reed, ATA  
Ezra Owens, ATA  
Charles Brannan, ATA  
Jeremy Morris, ATA  
Jean Mihigo, ATA  
Carl Hill, ATA  
Charles Trussell, ATA  
Tony Buchanan, ATA

### Inbound Military

Judy Mohler, AF  
Linda Gladwell, AF  
Christopher Fanning, AF

### Retirements

LtCol Vernon Scribner,  
25 years



**Biankowski**

### Promotions

James Allen, ATA  
Deborah Cantrell, ATA  
Chris Carr, ATA  
Wesley Cothran, ATA  
Kimberly Crabtree, ATA  
Valerie Davenport, ATA  
James Dotson, ATA  
Robert Forde, ATA  
Marcus Golden, ATA  
Robert Hardin, ATA  
Barry Henderson, ATA  
Scott Howard, ATA  
Jonathan Jones, ATA  
Thomas King II, ATA  
Brian Knack, ATA  
Swapna Konduru, ATA  
Daniel Lewis, ATA  
Jonathan Lister, ATA  
Julius Lockett III, ATA  
Philip Lorenz III, ATA  
Michael Lynch, ATA  
Joshua McNatt, ATA  
Melissa Minter, ATA  
Karen Morris, ATA  
Ezra Owens, ATA  
Adam Plondke, ATA  
Ronnie Porter, ATA  
Linda Robertson, ATA  
Brent Rodgers, ATA  
Joshua Scott, ATA  
Michael Sherman, ATA  
Danny Strickland Jr., ATA  
Todd VanPelt, ATA  
Jon Wallace, ATA  
Kent Wilcher, ATA

### New Hires

Stephen Arnold, ATA  
Gary Fulmer, ATA  
Johnny Hicks, ATA  
Charles Lee Jr., ATA  
Kenneth Staten, ATA  
Kelvin Sweeton, ATA  
Terry Tate, ATA  
Joseph Todd, ATA

## Thomas Jefferson essay contest winners named



High school students Sarah Hall (second from left) and LeAnne Kuhns (second from right) shared the first prize honor in the Thomas Jefferson essay contest sponsored by UTSI. From left to right are Cindy Calloway, Franklin County High School English teacher; Hall; Dr. Richard Samuelson, lecturer; Kuhns; and Theresa Patton, social studies chair, Lincoln County High School.

As part of the Thomas Jefferson Day at UTSI, students from surrounding high schools participated in an essay contest in conjunction with the 14th annual lecture series. The topic of the essay contest was "Jefferson's Relationship with John and Abigail Adams."

There were joint first place winners, Sarah Hall and LeAnne Kuhns, each receiving a \$300 award. Hall, a junior at Franklin County High School, is the daughter of Mickey and Melissa Hall of Estill Springs. Kuhns, a junior at Lincoln County High School, is the daughter of Brenda Kuhns of Fayetteville.

Additionally, \$500 was awarded to each school for academic program development. Cindy Calloway, an English teacher at Franklin County High School, and Theresa Patton, social studies chair at Lincoln County High School, accepted the awards on behalf of their respective schools.

Dr. Richard A. Samuelson, the guest speaker at the Thomas Jefferson Lecture, spoke on "Thomas Jefferson, John Adams and the American Future."

He is assistant professor of history at California State University, San Bernardino, and is currently the Garwood Visiting Fellow in the James Madison Program at Princeton University. Dr. Samuelson has held fellowships at numerous colleges and universities throughout the world.



### Arnold Golf Course 454-7076

**Mulligan's Grill is open seven days a week from 7 a.m. to 2 p.m.** Try the "Good Morning Breakfast" special Monday through Friday. This includes two eggs, choice of bacon or sausage, hash browns and one biscuit and gravy for \$4.50. Breakfast is served until 10:30 a.m. Lunch specials for May are: **Monday:** reuben sandwich; **Tuesday:** cranberry walnut chicken salad croissant; **Wednesday:** turkey club panini; **Thursday:** grilled chicken wrap; **Friday:** club sandwich. All specials are served with fries and fountain drink for \$6. Try the soup of the day with a sandwich. Mulligan's Grill meals are a great value and include unlimited drink refills. Call ahead for advance or to go orders at 454-7076. Remember to show your Members First Plus membership card for a ten percent discount on purchases of \$4 or more.

**Unlimited golf** every Tuesday and Thursday for \$10 per person. Normal cart fees apply.

Check out the **Pro Shop Memorial Day merchandise specials.** New merchandise has arrived to include Ping men's and women's shirts for \$29.95, men's and women's rain suits for \$89.95 and new Tres Bien windshirts with zip-off sleeves for \$29.95.

**Range Rat Program** kicks off June 1 and goes through July 31. During this time, the first 25 customers making a minimum \$25.50 e-key purchase of range balls will receive a Range Rat T-shirt and their name entered into the grand prize drawings. Anyone who finds a green money ball in your range basket instantly wins two free range tokens for 24 balls each and your name is entered into the grand prize drawings. Compete in the skills test competitions and win cash prizes. Putting Contest – June 4, 12:30 p.m.; Chipping Contest – June 25, 12:30 p.m.; Closest to Pin – July 2, 12:30 p.m.; Bunker Shot – July 9, 12:30 p.m.; Long Drive Contest – July 23, 12:30 p.m.; Big Break Contest – July 30, 12:30 p.m. Customers who purchase a range key, money ball winners and winners in the skills challenges are eligible for the grand prize drawings: 7th place - \$25 gift certificate; 6th place \$25 gift certificate; 5th place \$50 gift certificate; 4th place \$50 gift certificate; 3rd place \$75 gift certificate; 2nd place \$125 gift certificate and Grand Prize \$250 gift certificate.

### Arnold Lakeside Center 454-3350

**Arnold Lakeside Center now serves Beans Creek wines by the glass or by the bottle. Come see the new selection.**

Air Force Services is conducting the **Annual Club Membership Scholarship Program.** Current Members First Plus individuals and their family members who have been accepted by or enrolled in an accredited college or university for entry during the fall of 2010 term as a part time or full-time student are eligible to apply for scholarships. Grandchildren are eligible

if they are a dependent of the club member. Student enrollment status may involve either undergraduate or graduate curricula. Applicant must provide a copy of their college or university acceptance letter. Twenty-five, \$1,000 scholarships will be awarded. To enter, write and submit a 500 words or less essay on the following topic: "What does it mean to be a part of the Air Force Family." Essays exceeding 500 words (excluding title) will be disqualified. Essays must be typed in MS Word 12-point Arial or Times New Roman font, single-spaced, with double-spacing between paragraphs, 1-inch top and bottom margins and 1.25 inch left and right margins. The application package must include CD containing essay with participant's name, date and word count, entry form (included in the brochure or online at [www.afclubs.net](http://www.afclubs.net)) and current college or university acceptance letter or official transcripts. Essays not meeting the above parameters will be disqualified. Submit entries to 704th Services Marketing, 100 Kindel Drive, Suite C303, Arnold AFB, TN 37389-3321 by July 1. Final scholarship awards for school year 2010-11 will be announced by Sept. 17. All nominees will be advised of scholarship selection or non-selection. Only one essay per eligible person.

**Wednesday Lunch** is available for dine in or carry out from 11 a.m. to 1 p.m. Call ahead to 454-5555 to place orders. No delivery available. For better service, you may call on any day and preorder. In addition to the Hap's Pizza menu, chef salad is available for \$4.50 which comes with ham, turkey, cheese and boiled eggs. Add grilled or fried chicken for \$2 more. Call to see what the Surprise Wednesday Special will be. The special could include items such as homemade chicken salad or lasagna.

**Spring Chess Club** continues through May 27 for all ages (under age 13 will need parent present). Play format is open to all skill levels and is not structured. Players are required to observe all rules of sportsman-like conduct during play and towards all players regardless of skill level. Play will be in The Landing from 5:30-8:30 p.m. Express and Pizza menus will be available until 8 p.m.

**Movie nights** are every Thursday with a new movie start time of 6 p.m. with dinner available from the Express or Pizza menus from 5-9 p.m. The schedule for May is: **May 13** – "Percy Jackson and the Olympians: The Lightning Thief," rated PG starring Logan Leman and Brandon Jackson. Percy Jackson is having problems in high school when the gods of Mount Olympus seem to have walked out of the pages of his Greek mythology tests and into his life. **May 20** – "Valentine's Day," rated PG-13 starring Julia Roberts and Bradley Cooper. Intertwining couples and singles in Los Angeles break-up and make-up based on the pressures and expectations of Valentine's Day. **May 27** – "Invictus," rated PG-13 starring Matt Damon and Morgan Free-

man. The inspiring true story of how Nelson Mandela joined forces with the captain of South Africa's rugby team to help unite their country.

**Friday night dining room specials available from 5-9 p.m.** **May 7:** prime rib for two \$33 members, \$34 nonmembers. First Friday Jam night returns 6-10 p.m. **May 14:** chicken marsala, \$9.95 for members, \$10.95 for nonmembers. **May 21:** London broil or stuffed chicken breast \$11.95 members, \$12.95 nonmembers. **May 28:** steak and shrimp (7 oz. ribeye with four jumbo breaded shrimp) \$17.95 members, \$18.95 nonmembers. Please call for reservations to ensure special is available. All specials and times are subject to change without notice. Please call ahead to ensure availability and openings.

**Saturday availability and specials:** **May 8:** express and pizza menu to go only. Call 454-5555. **May 15:** stuffed pork loin \$10.95 members, \$11.95 nonmembers. **May 22:** express and pizza menus to go only. Call 454-5555. **May 29:** pizza and spaghetti \$9.95 members, \$10.95 nonmembers. The dining room is open on Saturdays from 5-9 p.m. unless otherwise specified. Please call for reservations to ensure these specials are available. All specials and times are subject to change without notice. Please call ahead to ensure availability and openings.

The next session of **dance classes** will begin June 2. The session includes seven weeks of instruction on Wednesday nights cumulating with a dinner dance event July 21. Instruction is scheduled 6:30-7:30 p.m. with supervised practice 7:30-8:30 p.m. Cost for the all inclusive class (seven weeks of instruction and dinner dance event) is \$58 per person for members and \$60 for nonmembers. Full payment is required in advance to participate in the class and refunds or prorated fees are not applicable for missed classes. The class is taught by Denny Lennon and/or Amanda Robinson with Chattanooga Dance Sport. Call to sign up for classes and remember to wear comfortable clothing and shoes. The next session will begin August 11.

### Family Member/Youth Programs (FamY) 454-3277

**Youth Bake Sale** at the Commissary parking lot May 7-8 from 9 a.m.-1 p.m. Donations of baked goods can be dropped off at the Youth Center the week of May 3-6 between 10 a.m. – 4:30 p.m. or the day of the event. This is a fundraiser to help offset costs of new supplies, books, games, field trips and T-shirts for the Youth Program.

**Youth Movie Night** set for May 7 from 6-9 p.m. Ages 9 and up are invited to the Open Rec Center to watch a movie. There will be free popcorn and pizza by the slice for \$1. Juice and water will also be provided free of charge.

Join the Youth Center for **4-H Club meeting** May 20 from 5-6 p.m. 4-H Club is designed for youth in the fourth grade through 18 years of age.

## 704th Services Division hours of operation:

**Arnold Lakeside Center** – Special function luncheons available. Call 454-3350 for arrangements. Catering/Management offices Tuesday-Friday 10 a.m.-3 p.m.; Lunch: limited menu Wednesdays 11 a.m.-1 p.m., call 454-5555 to place orders! Dinner Arnold Express Menu or Hap's Pizza only Thursday 5-9 p.m., dinner or Arnold Express Menus and Hap's Pizza Friday and Saturday 5-9 p.m.; Main Bar: Thursday 4:30-8:30 p.m., Friday and Saturday 4:30-9 p.m.; Social Hour Friday 4-6 p.m. Movie Night: Thursday 6 p.m.

**Family Member/Youth Programs** – New hours as of May 1: Tuesday-Friday 10 a.m.-6 p.m., Saturday 12-5 p.m.; First Friday Movie Night 5-8 p.m.; Camp Adventure runs June 1-Aug. 6 from 7:30 a.m.-4:30 p.m. Monday-Friday. During Camp Adventure Open Rec is open Monday-Friday 4:30-6 p.m. only.

**Outdoor Rec / Arts & Crafts** – New hours as of May 1: Main Office, Check In, Marina and Auto Shop Tuesday-Sunday 8 a.m.-6 p.m.; FamCamp Store Tuesday-Friday 3-5 p.m., Saturday and Sunday 8-11 a.m., 2-5 p.m.; Lifeguards begin Memorial Day weekend GLC beach daily 10 a.m.-6 p.m., ALC beach Saturday and Sunday 10 a.m.-6 p.m.

**Fitness Center** – Monday-Friday 5 a.m.-9 p.m.; Saturday 8 a.m.-4 p.m.; Sunday 12-5 p.m. Open 8 a.m.-4 p.m. Memorial Day. No classes will be held.

**Arnold Golf Course** – Pro Shop and Driving Range daily 8 a.m.-5 p.m.. Mulligan's Grill: daily 7 a.m.-2 p.m.

**Recycling** – Monday-Friday 7 a.m.-4 p.m.

**Wingo Inn** – Monday through Friday 7 a.m.-6 p.m., Saturday and Sunday 8 a.m.-4 p.m.

**Barber Shop: by appointment** – Monday, Wednesday & Friday 8 a.m.-2 p.m.; Thursday 8 a.m.-noon

**4-H, Operation: Military Kid (OMK) and Joint Family Support Assistance Program (JFSAP) One Week Residence Camp** to be held in Crossville at the Clyde York 4-H Center May 31-June 4. Youth, grades 6-8 as of Jan. 1, are invited to apply and must be a legal dependent of an armed services member (any branch) in the deployment cycle (includes those who are currently deploying, have been deployed or who will be deployed in the near future). The camp includes activities such as swimming, crafts, ropes course and woodworking and participants will have a chance to meet other youth from across Tennessee. Cost is \$20 per camper and covers the cost of camp, T-shirt and various incidentals. Transportation will be provided from the Coffee County 4-H Extension Office. Applications are available at the Youth Center and must be returned along with registration fee (made payable to TN National Guard Family Program). Camp will fill up quickly so register early. Applicants are accepted on a first come, first served basis.

**Camp Adventure returns June 1 through Aug. 6.** Camp Adventure is a day camp for children who have completed kindergarten through age 12. The camp is sponsored by 704th Services and run by skilled professionals through the University of Northern Iowa. Activities are held Monday through Friday at the Youth Center (building 3055, previously known as Community Activities Center) from 7:30 a.m. to 4:30 p.m. Children may attend any or all weeks but attendance information

should be completed at time of registration. Each week is set to a theme and activities are planned to coincide with that theme including field trips to local attractions. Morning and afternoon snacks and beverages will be provided. Parents must supply their child with a daily sack lunch to include beverage (no carbonated beverage of any kind). Ensure that lunches are clearly marked with child's name. Cold items can be accommodated in the central refrigerator; however, meals will not be able to be heated. Outdoor and swimming activities are planned throughout the week (weather permitting). Each child should bring daily to camp an extra pair of clothing, swimsuit, towel and sunscreen, if needed. Closed toe shoes must be worn at all time during camp. Fill out the Camp Adventure Application and return it, along with the other required documentation and weekly fees, to the Youth Center no later than two weeks prior to start date. For questions or more information call 454-3277.

The weekly themes are listed below:

**Week 1: June 1-4**  
**Zooprise Party Parade**  
**Week 2: June 7-11**  
**Viking Sails & Dragon Tales**  
**Week 3: June 14-18**  
**Space Raiders & Cosmic Invaders**  
**Week 4: June 21-25**  
**Rangers, Robots & Toy-box Treasures**  
**Week 5: June 28- July 2**  
**"Fin"tastic Ocean Jam-boree**  
**Week 6: July 6-9**  
**Leaping Through the Looking Glass**  
**Week 7: July 12-16**  
**Wild Things & Warm**

### Fuzzies

**Week 8: July 19-23**  
**Super Sports Spectacular**  
**Week 9: July 26-30**  
**Amazon Jungle Rumble**  
**Week 10: August 2-6**  
**An Invitation to a World Celebration**

### Fitness Center 454-6440

**Open League and Women's League Softball** is now underway. Women's League plays on Mondays and Wednesdays. Open League plays Tuesdays and Thursdays. Three games are played each night beginning at 5 p.m.

**Armed Forces Run** to begin 7:30 a.m. May 12. This will be a 3.5 mile run with an official start time and running clock. It is two laps around the Fitness Center trail. The first 30 to sign up will receive T-shirts and the fastest overall time will receive a prize.

**Bike to Lunch** May 19 beginning at 11 a.m. Meet at the Fitness Center then ride to Arnold Lakeside Center for lunch. Choose from Hap's Pizza menu, chef salad (\$4.50), chef salad with chicken (\$6.50) or the special of the day. Order and pay as you go. Once lunch is finished, the ride will continue back to the Fitness Center. Incentives will be given to the first 20 to commit and sign up.

**Random Fitness Initiative** continues. Twice a month the Fitness Center staff will roam the base during lunch and award people for showing self initiative for working out on base at a location other than the Fitness Center. Those selected will receive a prize.

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**Ping Pong Ladder Tournament coming June 7.** Singles and Doubles matches are scheduled by players Monday through Friday. Sign up for this event by June 1. Prizes will be given to the top three winners.

**The Fitness Center will be open 8 a.m. – 4 p.m. for Memorial Day. No classes will be held.**

**Outdoor Rec (ODR)  
454-6084**

**Beach Volleyball Tournament** is coming May 29 to the GLC beach. Start off your summer with some fun outdoor volleyball. Competition gets underway at 10 a.m. and lunch will include hot dogs, chips, sodas and water. Teams of four consisting of ages 12 and older must enter by May 20. Entry fee is \$25 per team. Late registration fee of \$10 will be applied after May 20. There must be eight teams signed up and limited to no more than 32. The tournament will be single elimination. Each team will play a two game match against another team as a warm up before they being the tournament. The winning team will receive a trophy.

Would you be interested in a **“Good Time in Gatlinburg” June trip package?** The trip would possibly involve white water rafting on the Pigeon River, a zip line tour of the Smokies and a dinner show at the Dixie Stampede. The following package options are being offered. **Package 1:** one night, two days (June 5-6) with zip line and Dixie Stampede for \$245. Depart from ODR at 5 a.m. June 5, ride the zip line at 1 p.m. EST then Dixie Stampede dinner and show at 8:30 p.m. EST. Return to ODR approximately 4 p.m. June 6. Another alternate to this package is departing at

noon June 4 with Dixie Stampede at 8:30 p.m. EST then zip line at 1 p.m. EST June 5 and return to ODR approximately 8:30 p.m. **Package 2:** one night two days (June 5-6) with white water rafting and Dixie Stampede for \$215. Depart from ODR 5 a.m. June 5, rafting at noon EST then Dixie Stampede at 8:30 p.m. EST. Return to ODR approximately 4 p.m. June 6. An alternate to this package is depart at noon June 4 with Dixie Stampede at 8:30 p.m. EST. Raft at 11

a.m. EST June 5 and return to ODR approximately 5:30 p.m. **Package 3:** one night, two days (June 5-6) with rafting, Dixie Stampede and zip line for \$280. Depart from ODR at 5 a.m. June 5 then raft at noon EST and Dixie Stampede at 8:30 p.m. EST. Zip line at 11 a.m. EST then return to ODR approximately 5:30 p.m. All packages are set activities and there is no omitting of unwanted activities. If you are interested in any of these options, call 454-6084.

**Brave Defenders training**

**A security forces Airman fires blanks from an M249 machine gun during the weapons familiarization portion of Brave Defenders training at Eglin AFB, Fla.** (Photo by Airman 1st Class Anthony Jennings)



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