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Wings and Blades of Hope

Capt. David Bedard
Alaska National Guard Public Affairs

In the case of the HH-60 Pave Hawk and HC-130J Combat King II combat search and rescue aircraft, the first “H” stands for “help.”

Both machines and crews, of the Alaska Air National Guard’s 210th and 212th rescue squadrons respectively, provide that help by training every day for their combat mission of going behind enemy lines and inserting pararescuemen (PJs) to rescue downed pilots and other isolated allied troops.

At home station, the crews partner with PJs of the 212th Rescue Squadron to provide civil search and rescue statewide.

It was only appropriate then that the 176th Wing Airmen of the three rescue squadrons went a little out of their way May 13 to fly low and slow over Eagle River, Palmer and Wasilla near JBER.

Later, aircraft from U.S. Air Force and Air National Guard units in Alaska honored frontline COVID-19 responders and essential workers with flights over 23 communities in the state May 15.

The Salute to Alaska flyovers, allowed as part of an approved training mission, are part of the Air Force Salutes initiative designed to show appreciation to the heroes around the world battling the pandemic, and to lift morale in communities across America.

Participating JBER aircraft during the week included the C-17 Globemaster III, F-22 Raptor, HC-130 and HH-60. Participating Eielson Air Force Base aircraft were the F-16 Fighting Falcon, F-35 Lightning II and KC-135 Stratotanker.

The flyovers were a collaborative salute to healthcare workers, first responders and other essential personnel to showcase solidarity with all of Alaska during the COVID-19 pandemic.



Alaska Air National Guard Loadmasters aboard a HC-130J Combat King II observe an HH-60 Pave Hawk as it prepares for an aerial refueling. The 176th Wing conducted the first of the flyovers for Alaska. The Salute to Alaska flyovers were an approved training mission and part of the Air Force Salutes initiative designed to show appreciation to the heroes around the world battling the pandemic, and to lift morale in communities across America. (U.S. Navy photo by Mass Communication Specialist 3rd Class Victoria Granado)

During the May 13 sortie, both aircraft went their separate ways to carry out unique training profiles before meeting again to accomplish the community flyover.

Alaska Air National Guard Lt. Col. Jeremy Groat, 210th RQS commander, said he wanted to expose Maj. Ryan Wiese to Alaska airspace.

An experienced command pilot who just came from the elite U.S. Air Force Weapons School at Nellis Air Force Base, Nevada, Groat said Wiese nonetheless needed to build familiarity with Alaska’s unique weather and terrain.

To accomplish their goal, Groat guided the Pave Hawk to the ascending and plunging Chugach Mountains, still covered in snow and ice from last winter. The cement-gray helicopter

appeared like a mosquito against the backdrop of a refrigerator as the crew expertly navigated the folds and contours of the terrain.

“We wanted to get Major Wiese out to the mountainous and snow-covered glacier fields east of JBER,” Groat said. “We completed glacier landings and complex hovers.”

Miles away, Capt. Christopher Brunner, 211th RQS rescue pilot, and his crew were focused on a completely different set of tasks.

Beginning over JBER’s Malemute Drop Zone, the HC-130’s loadmasters kicked out container delivery systems, which safely delivered supplies and equipment under the canopy of parachutes.

The pilots then pulled on the yoke, bringing the aircraft to 10,000 feet. In the whisper-thin air, PJs

stepped into the summery void, falling thousands of feet before pulling their parachute releases, precisely gliding to a simulated isolated survivor.

Finally, the two aircraft rendezvoused across the frigid, restless ocean water at Mount Susitna, where they would undertake a synchronized waltz at altitude when the HC-130’s refueling boom delivered fuel midair to the thirsty whirlybird.

The airborne duo speared east and north on their route to show the Alaska Air National Guard’s colors to communities slowly emerging from lockdown.

Though they soared above migrating geese and nesting eagles, they said they still felt a connection to the community.

“I saw some people waving; some people taking

pictures,” Brunner recalled. “I ended up getting some pictures sent to me directly saying how cool it was.”

“It was a good way to show the community as a whole that this is the piece we can do to show solidarity and our support of the community at large as well as first responders and hospital workers,” Groat said.

While they were tracking along the goodwill route, Brunner said he could hear approving chatter from pilots passing through the area.

“From the sky to the ground, it seemed like there were a lot of excited people,” he said. “I thought it was awesome. It’s good to go out there and show the military still has a presence in Alaska. We’re here to assist in any way we can, including defending our country.”

Air, Space and Missile Defense Space Camp awardees selected on Greely

Angela Glass
U.S. Army Garrison Alaska, Fort Greely Garrison Public Affairs

The Fort Greely and Delta Elementary Space Camp Scholarships were awarded to Rylee Miller and Aaron Marcotte at the garrison headquarters building May 20.

The Air, Space and Missile Defense Association offers 16 scholarships for selected children to attend a weeklong Space Camp at Redstone Arsenal June 28 through July 3.

Marcotte and Miller were selected from a pool of highly qualified applicants and their selection confirms their overall efforts, grades and interest in space and science.

The Air, Space and Missile Defense Association was formed in 1995 in Huntsville, Alabama, as a non-profit, non-political educational and scientific organization.



U.S. Army Garrison Alaska, Fort Greely Commander, Lt. Col. Joel Johnson (far left), and Command Sgt. Maj. James Breakfield (far right) award the 2020 Air, Space and Missile Defense Space Camp Scholarships May 20 to Rylee Miller (center left), and Aaron Marcotte (center right). Both students are in the fifth grade at Delta Elementary School. The Air, Space and Missile Defense Association offers 16 scholarships for selected children to attend a weeklong Space Camp at Redstone Arsenal June 28 through July 3. (Angela Glass, U.S. Army Garrison Alaska, Fort Greely Garrison Public Affairs)

WEEKEND WEATHER

Friday



Mostly cloudy. High: 71F.

Saturday



Partly sunny. High: 73F.

Sunday



Rain showers likely. High: 71F.

IN BRIEF

Congratulations to the 2020 high school graduates of the Fort Wainwright community! Here’s a special salute to you for all your hard work in these trying times. Best wishes as you move into the next phase of your lives.

Read more on page 3.

Nutrition Corner: Coconut oil myth buster

Coconut oil is a healthy food and can help with weight loss – Myth.

A recent survey from the New York Times demonstrated that 72 percent of the public considers coconut oil healthy. Perhaps this is because virgin coconut oil is high in lauric acid, a medium-chain fatty acid that can raise good (HDL-Cholesterol) but also bad cholesterol levels (LDL-Cholesterol).

Coconut oil is made up of 82 percent saturated fat, which is about 11 grams of saturated fat per tablespoon, and raises LDL-cholesterol just as much as the commonly known culprits such as butter and beef fat. Coconut oil, like all saturated fats, should be limited in a healthy diet. Fortunately, many other healthy oil alternatives will

help lower LDL levels and increase HDL levels.

Canola oil contains monounsaturated and polyunsaturated fats and has a light flavor, which makes it good for baking, and sautéing. Olive oil is high in monounsaturated fatty acids, which can help reduce the risk of heart disease, and can be used in place of butter. Extra virgin olive oil has a fruitier flavor and stronger aroma than pure or virgin olive oil. Do not be fooled by the label “light,” which means it has a lighter flavor; the calorie content is the same. Grapeseed oil has polyunsaturated fatty acids and can lower total cholesterol and LDL-cholesterol. It can be used for sautéing and in dressings and dips. Overall, it is important to in-

clude fats in your diet that are heart healthy and limit the ones high in saturated and trans fat. Aim for oils such as canola oil, olive oil, flaxseed oil and grapeseed oil. Foods such as nuts/seeds/nut butters, avocados and fatty fish such as salmon also contain the heart healthy oils that will help reduce the risk of heart disease. Avoid the saturated fats found in butter, high fat dairy foods, fatty meat cuts, and coconut oil and trans fats found in many margarines and pre-packaged baked goods.

Featured Recipe: Microwaved “Fried Rice”

Ingredients:

- ½ cup rice
- 1 cup chicken broth

- 1 tablespoon soy sauce
- 2 teaspoon sesame oil
- ½ cup frozen peas and carrots
- 2 eggs
- Salt to taste
- Fresh scallion, to garnish
- In a bowl, combine the rice, water, soy sauce, sesame oil and bacon. Stir, then microwave, covered, for about six to eight minutes until the rice is fully cooked.
- Mix the frozen peas and carrots into the rice
- In a microwaveable bowl or mug, beat the eggs with the salt.
- Microwave the eggs and the rice again for one to two minutes, until the eggs are fully cooked.
- Break the eggs into small bits and mix in with the rice.
- Garnish with scallions.

History Snapshot: May is Historic Preservation Month – Chow Line at Ladd Field, May 9, 1945



During World War II Lend-Lease operations at Ladd Field, Soviet personnel were provided with much the same facilities and services as their American counterparts. They received ample hangar space, utilizing the entire western half of Hangar 1 while the Cold Weather Test Detachment used the eastern side. They were allotted warehouse space in one of the many Butler buildings located adjacent to Hangar 1 where they stored equipment such as Herman-Nelson heaters used to heat aircraft engines, battery carts and cletracs used for towing aircraft. In the control tower one of the two controller positions was designated for the Soviets, though the actual operation was done by a Russian-speaking American on their behalf. And the Soviet aviators were always given takeoff priority. The one place where Soviet personnel were not given equal treatment was in the officer's mess. As Cold Weather Test Detachment pilot Randy Acord recalled, “We took the first time that was more convenient to us and then the Russians would have to fit into that. Now that was the only place we ever had an override on the Russians!” (File photo Cultural Resources Program)

MEDDAC Minute

Important Phone Numbers

Emergency: 911
24 Hour Nurse Advice Line: 1-800-874-2273 Opt. 1
Appointment Line: 361-4000
Behavioral Health: 361-6059
Benefits Advisor: 361-5656
Immunizations: 361-5456
Information Desk: 361-5172
Patient Advocate: 361-5291
Pharmacy Refills: 361-5803
Tricare On-Line: www.tricareonline.com
Health Net: www.tricare-west.com, 1-844-8676-9378

Patient Advocate

The Medical Department Activity – Alaska Patient Advocate acts on behalf of all patients and the commander to resolve problems and implement necessary corrections. Beneficiaries needing assistance, or who have questions about the care received at MEDDAC-AK, can contact our Patient Advocate at 361-5291.

Never Forget

Never forget another appointment!!! TRICARE makes it easy for you to receive a reminder for upcoming appointments. By inputting your cell number in your TRICARE profile, you will receive text reminders 48 hours and two hours prior to your appointment.

Tobacco Free Campus

As a reminder, MEDDAC-AK facilities are now tobacco free. This includes Bassett Army Community Hospital, Preventive Medicine, Behavioral Health, DENTAC/ASAP, Veterinary Clinic and Kamish. Tobacco products include cigarettes, cigars, pipes, electronic nicotine delivery devices (e.g. e-cigarettes, e-pipes, e-cigars, etc.) stem pipes, water pipes, hookahs and smoke free products that are chewed, dipped or sniffed.

Talk With A Registered Nurse

Think you should go the emergency room but aren't sure? Wondering if you need an appointment? A registered nurse is standing by 24 hours a day, seven days a week to help. Call the Nurse Advice Line for your immediate health care needs. The nurse can even book you an appointment if necessary. Call 1-800-TRICARE (874-2273).

Help Us Help You

Your feedback helps us to improve services. The Joint Outpatient Evaluation System is randomly mailed to beneficiaries, and emailed to active duty, after appointments. Your response assists MEDDAC-AK leadership to improve your overall experience. Look for your envelope in the mail!

America's only missile defense brigade 'deployed in place'

Staff Sgt. Zachary Sheely
100th Missile Defense Brigade

As the stranglehold of the COVID-19 pandemic tightened its grip on America, closing schools, businesses and government institutions, the focus for the Soldiers at the 100th Missile Defense Brigade (Ground-based Midcourse Defense) became singular – maintain the

mission, no matter what.

That mission is the federally mandated defense of the United States homeland from intercontinental ballistic missile attack. A limited number of U.S. Army Soldiers in Alaska, California and Colorado operate a sophisticated fire control system that can, on-order, launch

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Class of 2020 Spotlight

Congratulations to the 2020 high school graduates of the Fort Wainwright community! Here's a special salute to you for all your hard work in these trying times. Best wishes as you move into the next phase of your lives.

Name: Darien Woulard

High school: West Valley High School

Activities: Football

What's next: Will take some time off before deciding next steps and visit with family in Florida

Advice for freshmen: "Be yourself, and don't let anyone pressure you to be something you're not."



Woulard

Name: Ali Mustapha

High school: Ben Eielson Junior-Senior High School

Activities: Basketball

What's next: Plans to attend University of Alaska Fairbanks in the fall and then transfer to Florida A&M University

Advice for freshmen: "Stay on top of the work, this time goes by fast."



Mustapha

Name: Ashley Plys

High school: Lathrop High School

Activities: Tennis,

editor of the yearbook, National Honor Society

What's next: Will be attending University of Alaska Fairbanks and majoring in accounting

Advice for freshmen: "For incoming freshmen, I would advise them to take their time to work hard and enjoy high school."

Name: Rebecca Ann O'Dell

High school: Lathrop High School

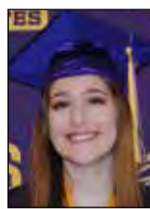
Activities: Treble Choir, Catholic Mass Choir, USO volunteer

What's next: Will be working part-time while attending Tompkins Cortland Community College

Advice for freshmen: "Try your best and start thinking about what comes after high school now because four years goes by fast. And don't forget to have fun!"



Plys



O'Dell

Name: Kolten William Hall

High school: Lathrop High School

Activities: Lathrop baseball team and American Legion summer baseball

What's next: Plans to



Hall

join the Air Force

Advice for freshmen: "It goes fast, enjoy it!"

Name: Ethan Keim

High school: West Valley High School

Activities: Swimming, poetry club, yearbook

What's next: Plans to attend a heating, ventilation, and air conditioning or electrician trade school

Advice for freshmen: "Just have fun. Make friends with those who are going to build you up, and count every day as a blessing."



Keim

Name: Camellia Cresse Valencia

High school: Lathrop High School

Activities: Cross-country skiing, cross-country running, academic decathlon

What's next: Will attend Baylor University

Advice for freshmen: "Don't be afraid to join clubs or sports that you haven't done before. As long as you try your best, you'll have fun and make tons of friends."



Valencia

Name: Katelyn Weiss

High school: North Pole High School

Activities: Dive team, track and field, band and

musicals

What's next: Will attend Montana State University and major in conservation biology and ecology

Advice for freshmen: "Get involved in many activities at school. It's a great way to make friends, especially if you are new."

Name: Estelle J. Halbrooks

High school: Hutchison High School

Activities: Varsity swimming, UA Scholar, National Honor Society

What's next: Will attend Denver University with a focus on attending law school after

Advice for freshmen: "Enjoy high school and stay focused."

Name: Jace Henry

High school: Lathrop High School

Activities: Football and track

What's next: Will attend Dartmouth College and play Division 1 football

Advice for freshmen: "Don't be afraid to go out of your comfort zone, to have new experiences or to talk to that person that is not in your



Weiss



Henry



Weiss

typical friend group."

Name: Colton Wesley Taylor

High school: Lathrop High School

Activities: Football and wrestling

What's next: Already enlisted in the Army, ships out later this summer

Advice for freshmen: "Keep your head up, and walk with a purpose."



Taylor

Name: Andres R. Cruz

High school: Ben Eielson Junior-Senior High School

Activities: National Honor Society, National Society of High School Scholars

What's next: Will attend North Dakota State University

Advice for freshmen: "Do everything ahead of time and you'll never have to worry."



Cruz

Name: William Hutson

High school: Lathrop High School

Activities: Cross country, track, National Japanese Honor Society

What's next: Will attend Miami University in Oxford, Ohio

Advice for freshmen: "Don't be dumb."



Hutson

After a lifetime of service, retirement can wait

Robert Whetstone

Many famous Americans have answered the call to duty in times when the Nation needed them most. Former NFL running back Robert Patrick "Rocky" Bleier was drafted and volunteered for duty in Vietnam. Late Hollywood actor Charles Durning received three Purple Hearts for his actions in World War II. Mixed martial arts fighter Liz Carmouche served three tours in Iraq as a helicopter electrician.

And today, we have U.S. Army Col. April Critelli.

Critelli is one of the thousands of men and women who have served in peacetime and combat, to retire in quiet anonymity, a hero. And when the nation called for healthcare professionals to help fight the COVID-19 pandemic, Critelli came out of retirement and was the first retired reserve volunteer recall officer to be placed on active duty orders and assigned to duty.

"For as long as I can remember I wanted to serve in the military," said Critelli, a physician assistant at Brooke Army Medical Center, Fort Sam Houston, Texas. "1982 wasn't a popular time to join, especially for women, but I just knew that I wanted to serve my country."

Critelli is a graduate of State University of New York at Buffalo, about 20 miles south of her hometown of Niagara Falls. She was initially commissioned into the Chemical Corps and later received her Master of Physician Assistant Degree from George Washington University,



U.S. Army Col. April Critelli, physician's assistant, screens a patient for COVID-19 at the McWethy Troop Medical Clinic, Fort Sam Houston, Texas, May 13, 2019. Critelli is the first medical Soldier to return to active duty from retirement during the COVID-19 crisis. (Photo by Jason Edwards)

then reassessed into the Army Medical Specialist Corps.

She spent 36 years in the U.S. Army, with time on active duty, in the National Guard and Reserve. She retired in 2018, only to realize she had to jump back into the fray when the novel coronavirus pandemic saw military healthcare personnel deploying to places like her home state to help fight the virus. "When the recall was announced, it (returning to duty) just seemed like the right thing to do," she explained.

Like many organizations, the Army is built on values. Loyalty, duty, respect, selfless service, honor, integrity and personal courage can be seen as the ingredients that shape the very core of individual Soldiers. So much so, that in the case of Critelli, even retirement didn't shake that foundation.

"As military healthcare professionals, it is part of our DNA to do all we can to help preserve life," said Army Brig. Gen. Wendy Harter, BAMC commanding general. "What Col. Critelli did in terms of coming out of retire-

ment to help in any way she could during this deadly pandemic, is the epitome of our Army values and our medical profession, particularly when it comes to selfless service. She is an example of what makes people our nation's most valuable asset."

For two years after the tragedy of 9/11, there was a noticeable jump in calls to recruiters and enlistments. To some analysts, it was an indicator that more young Americans felt the need to defend the country against a new kind of threat. Today, the threat requires an existing weapon with specialty training: A weapon that doesn't have a shelf life.

Critelli was sitting at home watching the global response to the pandemic, wanting to contribute. She looked at contractor positions and temporary jobs with the Veterans Administration. That's when Human Resources Command sent out an email requesting for healthcare volunteers. After discussing the possibility of a return to military service with her husband and adult children, she replied to

HRC.

"I immediately drafted my email response because it just seemed right and I felt proud to be able to serve my country again," she said. "About a week later, I received a call from HRC asking if I was willing to return to active duty and without hesitation I said yes."

No stranger to military moves, Critelli was physically and mentally prepared to take on the task of relocating to BAMC. Once she received orders from HRC, things got moving quickly. She started in-processing virtually. "I was able to complete a lot of paperwork through email prior to reporting," Critelli explained. "I was then told to self-isolate for 14 days, during which time I found suitable housing. I found everyone I encountered to be very professional and welcoming."

While at BAMC, Critelli will use her physician assistant skills, working in the Department of Family and Community Medicine. "This week I began screening patients at the McWethy Troop Medical Clinic for COVID-19, and I will fill any other provider gaps as needed," said Critelli.

"It's an honor to have Col. Critelli here to provide additional support during this global pandemic," said

Col. Timothy Switaj, Chief, Department of Family and Community Medicine. "I applaud her willingness to voluntarily return to active duty and help under these difficult times. Her background and experience will contribute greatly to the DFCM mission, enhancing our ability to care for our beneficiaries during this crisis."

The Army has a Soldier For Life program and part of the mission statement says "reinforce the Soldier For Life mindset throughout the entirety of the Soldier Life Cycle. "When you join the Army you join a family," said BAMC Command Sgt. Maj. Thomas Oates. "When you join Army Medicine from the military, you accept the invitation to become a member of an extended family that places people first. Col. Critelli received a call that her extended family needed her, and being the Soldier for life, she came back with open arms and sleeves rolled up ready to do her job. Col. Critelli may have retired, but her willingness to don the uniform for her Family, for her Army, for our country, proves beyond doubt that she is a Soldier for life."

"I have always liked the slogan SFL because there are so many ways to continue serving our forces even after

traditional retirement," added Critelli. "I never thought of it as returning to active duty, but it absolutely fits."

The COVID-19 pandemic has ushered in public support for medical professionals on the front lines as seen in marketing ads, news stories and social media, recognizing them as heroes. For Soldiers like Critelli, the accolades are appreciated but they see much more work to be done.

"I, like many of our service men and women do not want to be singled out," she said. "We do what we do for service and love of our country." Critelli said this unusual, invisible enemy can strike and hurt the most vulnerable. Medical professionals are not the only ones at risk she added. First responders and personnel providing essential services selflessly put themselves at risk. "I thank them and call them heroes."

"Like their civilian counterparts, Army healthcare providers are heroes at the tip of the spear, bravely fighting an unseen enemy," said U.S. Army Chief of Staff Gen. James McConville. "When the Nation confronts a challenge, our Soldiers move to the sound of the guns. That's what our retired healthcare specialists like Col. Critelli are volunteering to do."

AutoBears Assemble: Letting the signal flow

2nd Lt. Francesca Cervone
Charlie "Lightning" Company

Despite COVID-19, Charlie Company still maintains their mission readiness throughout their daily tasks. The Secure Mobile Anti-Jam Reliable Tactical Terminal is a vital piece of equipment for not only the signal company but also the brigade because it allows for units to connect with one another, as well as determine enemy threats within the environment. On May 12, 2020, Spc. Tufford led Soldiers through the yearly endorsement of our SMART-T.

Being a multichannel transmission systems operator-maintainer, Tufford's specialty lies within signal equipment like this. Char-

lie Company Soldiers were sure to take advantage of his knowledge to learn all that they could in order to be able to be self-sufficient. Tufford walked Soldiers through not only the SMART-T system set-up but also endorsement process.

He stated "this is an important process because without the endorsement, the satellite would not be able to validate the actual SMART-T."

Pfc. Bannister, another Soldier who worked the SMART-T endorsement with Tufford, talked about the importance of getting regular hands-on training.

"If you do not use the equipment enough, you will forget a lot," Bannister said. "It is nice to do these refreshers to know



Spc. Tufford preps the Secure Mobile Anti-Jam Reliable Tactical Terminal for its yearly endorsement. (Courtesy photo)



Spcs. DeLaRosa and Nunez raise the Secure Mobile Anti-Jam Reliable Tactical Terminal satellite. (Courtesy photo)

that myself and the other Soldiers in the company are all capable of self-sustaining, especially if the most knowledgeable person is

not around."

While signal equipment can prove to be difficult to operate at times, Charlie

Company works every day to ensure that our soldiers can perform and execute the mission at hand!

Arctic Light Elementary teachers wish students a good summer



Janet Farris, the U.S. Army Garrison Alaska, Fort Wainwright school liaison officer, along with Thad Keener, the Arctic Light Elementary School principal, and the school's teachers wish their students a good summer as they pass by from vehicles in front of the school May 19. With COVID-19 closing school doors before the official end of the school year, the faculty practiced social distancing as they cheered on the passing students. (Photo by Daniel Nelson, U.S. Army Garrison Alaska, Fort Wainwright Public Affairs)

Clever new robot rover design conquers sand traps

U.S. Army CCDC Army Research Laboratory Public Affairs

Built with wheeled appendages that can be lifted, a new robot developed with U.S. Army funding has complex locomotion techniques robust enough to allow it to climb sand covered hills and avoid getting stuck. The robot has NASA interested for potential surveying of a planet or the Moon.

Using a move that researchers at Georgia Institute of Technology dubbed rear rotator pedaling, the robot, known as the Mini Rover, climbs a slope by using a design that combines paddling, walking and wheel spinning motions. The rover's behaviors were modeled using a branch of physics known as terradynamics.

The journal Science Robotics published the research as a cover article. The Army Research Office, an element of the U.S. Army Combat Capabilities Development Command's Army Research Laboratory and NASA, through the National Robotics Initiative, funded the research.

"This basic research is revealing exciting new approaches for locomotion in complex terrain," said Dr. Samuel Stanton, a program manager at ARO. "This could lead to platforms capable of

intelligently transitioning between wheeled and legged modes of movement to maintain high operational tempo."

According to the scientists, when loose materials like sand flow, that can create problems for robots moving across it.

"This rover has enough degrees of freedom that it can get out of jams pretty effectively," said Dan Goldman, the Dunn Family Professor in the School of Physics at the Georgia Institute of Technology. "By avalanching materials from the front wheels, it creates a localized fluid hill for the back wheels that is not as steep as the real slope. The rover is always self-generating and self-organizing a good hill for itself."

A robot built by NASA's Johnson Space Center pioneered the ability to spin its wheels, sweep the surface with those wheels and lift each of its wheeled appendages where necessary, creating a broad range of potential motions. Using in-house 3-D printers, the Georgia Tech researchers collaborated with the Johnson Space Center to re-create those capabilities in a scaled-down vehicle with four wheeled appendages driven by 12 different motors.

"The rover was developed with

See ROBOT on page 7

MISSILE: Deployed in place

Continued from page 2

ground-based interceptor missiles to destroy incoming warheads in outer space. This is a task that cannot be done from home, as missile defense crews operate together within the walls of secured facilities.

Since the onset of the pandemic, the 100th Missile Defense Brigade has implemented measures to ensure the continued execution of its mission, including sequestering crew members from their homes and families.

"I deployed to Afghanistan with an infantry platoon, so I know what it's like to be truly deployed to a mountainous combat outpost in a war zone," said Staff Sgt. Hayden Murray, a 100th Missile Defense Brigade readiness operations officer. "This is different, but not completely. We are 'deployed in place,' and our job is the defense of the homeland. At any time, we could go into a war posture and we must be able to engage threats 24/7/365."

The brigade has operated on that 24/7/365 basis since 2004, its war posture predicated on the steadily increasing nuclear missile capabilities of near-peer nations and rogue states. Two redundant crews – one at Schriever Air Force Base, Colorado, that is responsible for the oversight of crisis procedures, and another at Fort Greely, Alaska, that handles the tactical, "right-now" portion of the fight – work in concert under the command and control of U.S. Northern Command.

They are the human interface to an otherwise highly automated system. Any degradation to crew readiness could leave America vulnerable to a nuclear detonation on U.S. soil.

Realizing the pandemic had the potential to interrupt its strategic mission, the staff at both the brigade headquarters in Colorado Springs and the 49th Missile Defense Battalion at Fort Greely began planning to provide viable courses of action to protect the health of the force and preserve the mission.

"Throughout the planning process, we worked in close coordination with our mission partners at Fort Greely garrison, the Missile Defense Agency and our higher headquarters in the Alaska Army National Guard and the 100th Missile Defense Brigade to understand and leverage resources," said Capt. Luis Lugonazario, the chief of operations for the 49th Missile Defense Battalion. "That process produced an early operations order to be executed on a phased approach as we were meeting



Members of a 100th Missile Defense Brigade crew exit the secure area at Schriever Air Force Base following their shift on April 30, 2020. Since the onset of the pandemic, the 100th Brigade has implemented measures to ensure the continued execution of its mission including sequestering crew members away from their homes and families. (Photo by Staff Sgt. Zachary Sheely, 100th Missile Defense Brigade)

the preset triggers."

One of the main challenges facing Col. Christopher Williams, 100th Missile Defense Brigade commander, was balancing the continuation of the mission with the local situation at each of the sites under his authority.

"The Soldiers at Fort Greely already live in relative isolation," said Williams, noting the remoteness of Fort Greely in the Alaska interior. "Their situation is different from ours in Colorado or at Vandenberg Air Force Base in California."

However, in early April, a Department of the Army Civilian at Fort Greely tested positive for COVID-19, setting the crew sequestration plan in motion there.

"Crews on shift were sequestered to the barracks for the duration of their 14-day deployment cycles with no access to the commissary, post exchange, gym or other common access areas," said Lugonazario. "Crew members are allowed no physical contact or gatherings with anyone outside of their current crew to minimize exposure and to guarantee a 'clean' crew is performing the mission at all times."

Shortly thereafter, the brigade crews in Colorado Springs began a rotation of sequestration, starting with Murray's crew and others.

"We can only go from work to our rooms, so it's

strange being in the town we live in, staying in lodging, and knowing that my wife and kids are down the road but I can't go see them," said Murray. "The crew jokes that we spend more time together than with our families, and now that is actually true."

The missile defense crews are configured in five- to six-Soldier teams, with each member serving in a position of varying roles and responsibilities. Once 100th Missile Defense Brigade Soldiers – whether active component or National Guard – clock in for duty, they immediately transition to Title 10 and operate under federal authority.

Williams said that unlike with other military missions, a request for additional forces to augment organic troops is impossible due to the training each Soldier must undertake to become a certified operator.

"We can't just plug and play another Soldier into the ground-based midcourse defense mission," said Williams, estimating that it takes each Soldier three to six months of intensive training to become proficient on the system.

Williams said the brigade regularly faces variables that can diminish the readiness of a crew member or an entire crew, including car accidents, the seasonal flu or family emergencies, but those situations do not often impact other crews. He acknowl-

edged that this situation does have the potential to overlap from one crew to another, which is why protecting crew members is so vital.

Maj. Christopher Stutz, a 100th Missile Defense Brigade crew director, said the brigade has also increased the emphasis on sanitizing shared work consoles, even though the crew changeovers are not happening face to face, as is typical.

"There has been a definite focus on keeping our billeting and workspaces in top shape," said Stutz. "We share the operational node with other crews, so cleanliness has always been a top priority. Our chief concern is the mission, and we must stay healthy to accomplish it."

In addition to isolating crews, the 100th Missile Defense Brigade has been training additional Soldiers who normally serve in staff roles to certify as operators, increasing flexibility in crew configurations.

Williams said missile defenders are a high priority for the Department of Defense's COVID-19 testing program to quickly identify any Soldiers who are sick and replace them; the brigade now has a robust assemblage of potential replacements.

"We are more ready now than we have been in the last 16 years," said Williams. "We have been able to turn nearly 100 percent of our efforts

to our operational mission, and our bench of additional operators is deeper than ever before. The job our missile defense operations and evaluations team has done to prepare and train backup crew members is nothing short of exemplary. We're ready to replace entire crews with certified operators from within the brigade if needed."

Still, Williams said his top priority is to protect Soldiers' health and mitigate the spread of the coronavirus. Thus, he said the 100th Missile Defense Brigade will continue these heightened measures for as long as necessary.

Staff Sgt. Joseph Harris, a readiness operations officer in Colorado Springs, said he feels privileged to serve in the 100th Missile Defense Brigade during this time of uncertainty.

"It's an honor to be part of something that means so much more than oneself," Harris said. "It's also tough to watch the citizens of this country lose their livelihoods and know that some of those citizens will have an extremely difficult time getting back on track. To the families who have lost loved ones, we are praying for you. We understand that this is a strange and absolutely difficult time, but we will get through this, and we will come out stronger on the other side."

TAKE TIME TO LEARN BEFORE YOU BURN

Did you know that in a typical Alaska Fire season approximately 500 wildfires burn an estimated 650,000 acres of our state. More than 80% of these fires are human-caused resulting from careless or negligent use of fire.

Reducing the number of human-caused fires in Alaska will provide a safer environment for the public and firefighters while also assisting in reducing the loss of structures, property damage and fire suppression costs.

For the first time in 50 years, the state of Alaska and the Division of Forestry have revised the wildland fires statutes and regulations, in an effort to combat human caused fires.

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Army Rolls Out New App to Improve PCS Move Experience in COVID-19 Era

Army G-4

The Army released April 22 “Army PCS Move” – a mobile knowledge-based app designed to enhance the relocation experience for Soldiers, Families and Department of the Army Civilians.

Those preparing for a permanent change-of-station move now have access to an organized central hub of information on entitlements, types of moves, how to plan/schedule a move, claims and important moving information related to COVID-19. The app

also helps educate users regarding allowances and responsibilities in the event a claim for loss and/or damage needs to be filed.

Major General Michel Russell, Director of Operations for HQDA, G-4 said, “By using the app you will become very familiar with the PCS process, your entitlements, and resources available to improve your household goods experience.”

The idea of the app began as part of the Chief of Staff of the Army’s people first philosophy and the Army’s pursuit of innova-

tive initiatives to ensure Soldiers and their Families have predictable, flexible and adaptable quality of life programs.

Army G-4 and CASCOM worked to develop the app prior to the COVID-19 pandemic with input from nearly 100 Soldiers, spouses and Civilians. The Army incorporated several of their recommendations that provide an improved user experience such as a checklist to keep track of the steps to take for a successful move. The checklist covers everything to do – from the time orders are received

The Army PCS Moves App is now available at the Google and Apple apps stores. (Courtesy photo)

to after a move is complete. Highlights of the app include: deadline reminders, a weight allowance calculator, instructional videos, and important documents and forms.

The primary goal of the Army PCS Move app is to educate and make information widely available to positively impact Soldiers, Families and Civilians. A PCS move can be stressful; however, it doesn’t have to be if properly prepared.



ROBOT: Clever design

Continued from page 5

a modular mechatronic architecture, commercially available components, and a minimal number of parts,” said Siddharth Shrivastava, an undergraduate student in Georgia Tech’s George W. Woodruff School of Mechanical Engineering. “This enabled our team to use our robot as a robust laboratory tool and focus our efforts on exploring creative and interesting experiments without worrying about damaging the rover, service downtime or hitting performance limitations.”

The rover’s broad range of movements gave the research team an opportunity to test many variations that were studied using granular drag force measurements and modified Resistive Force Theory. The team began with the gaits

explored by the NASA RP15 robot, and experimented with locomotion schemes that could not have been tested on a full-size rover.

The researchers also tested their experimental gaits on slopes designed to simulate planetary and lunar hills using a fluidized bed system known as SCATTER, or Systematic Creation of Arbitrary Terrain and Testing of Exploratory Robots, that could be tilted to evaluate the role of controlling the granular substrate.

In the experiments, the new gait allowed the rover to climb a steep slope with the front wheels stirring up the granular material – poppy seeds for the lab testing – and pushing them back toward the rear wheels. The rear wheels wiggled from side-to-side,



Built with multifunctional appendages able to spin wheels that can also be wiggled and lifted, a new robot developed at Georgia Tech with U.S. Army funding has complex locomotion techniques robust enough to allow it to climb sand covered hills to avoid getting stuck. (Photo by Christopher Moore, Georgia Tech)

lifting and spinning to create a motion that resembles paddling in water. The material pushed to the back wheels effectively changed the slope the rear wheels had to climb, allowing the

rover to make steady progress up a hill that might have stopped a simple wheeled robot.

“In our previous studies of pure legged robots, modeled on animals, we had kind of figured out that

the secret was to not make a mess,” Goldman said. “If you end up making too much of a mess with most robots, you end up just paddling and digging into the granular material. If you want fast locomotion, we found that you should try to keep the material as solid as possible by tweaking the parameters of motion.”

But simple motions

had proved problematic for Mars rovers, which famously got stuck in granular materials. Goldman says this gait discovery might be able to help future rovers avoid that fate.

“This combination of lifting and wheeling and paddling, if used properly, provides the ability to maintain some forward progress even if it is slow,” Goldman said. “Through our laboratory experiments, we have shown principles that could lead to improved robustness in planetary exploration – and even in challenging surfaces on our own planet.”

The researchers hope next to scale up the unusual gaits to larger robots, and to explore the idea of studying robots and their localized environments together.

Though the Mini Rover was designed to study lunar and planetary exploration, the lessons learned could also be applicable to terrestrial locomotion – an area of interest to the Army.

