ALASKA POST

FREE

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The Interior Military News Connection

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Innovative underwater camera system provides unique view of Alaska's murky depths

Courtesy Story

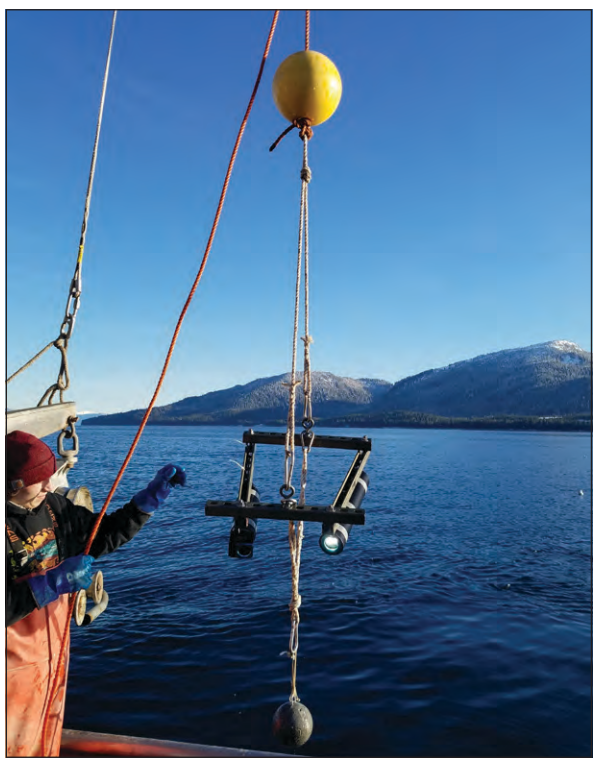
Accurately capturing and recording an underwater ecosystem is a difficult task and one made more difficult when it involves the deep, cold and dark waters of Alaska. This is the challenge presented to the U.S. Army Corps of Engineers - Alaska District and Matt Ferguson, a biologist with the Environmental Resources Section in the Civil Works Branch.

The proposed project is located in the small fishing community of Petersburg in Southeast Alaska and involves dredging for navigational improvements in Frederick Sound, where depths can drop to 500 feet within a half mile off the coast. Efficient operation of the south harbor has been negatively affected by navigation issues for commercial fishing vessels during low tides.

This problem involves the rise of land that was previously covered by glaciers, otherwise known as isostatic rebound. After the weight of receding glaciers is removed, the now uncovered ground slowly rises faster than sea levels resulting in shallower depths.

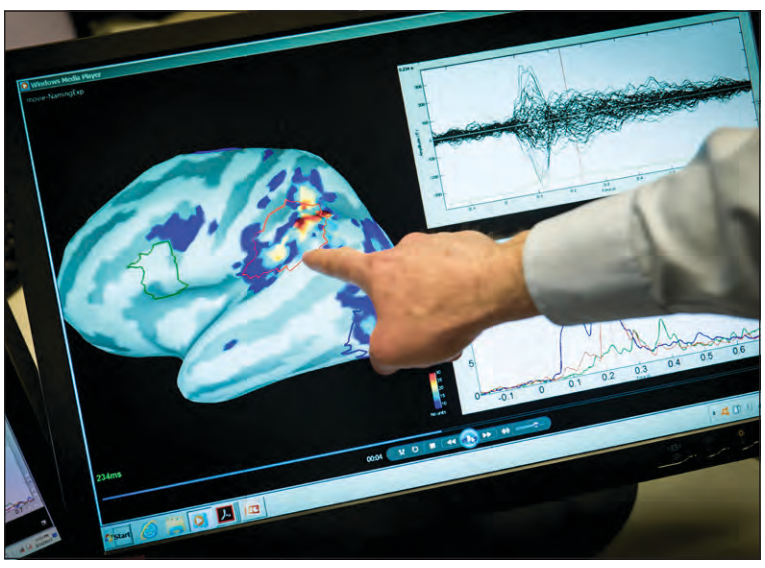
The dredge material from the project must be disposed in a place that is cost beneficial with minimized environmental impacts and sound engineering practices. Historically, a disposal area was used off the northern end of Mitkof Island that fell within inland waters and the Corps' jurisdiction. The boundaries changed in 2005, however, and the nearest inland waters of Thomas Bay are too distant to be economically feasible. Ocean dumping of the dredge material is the best remaining option.

See CAMERA on page 6



A deckhand helps lower a special underwater camera system overboard a vessel at a potential dredging disposal area in Frederick Sound near Petersburg, Alaska. Matt Ferguson, a biologist with the U.S. Army Corps of Engineers - Alaska District, developed the system in order to help evaluate possible environmental impacts from a proposed project that would discharge dredge materials at the location. (Courtesy photo)

Army diagnosing brain injuries through partnerships



Magnetoencephalography Laboratory scientist, Mihai Popescu points out areas of magnetic activity in a brain on a display at the National Intrepid Center of Excellence at Walter Reed National Military Medical Center in Bethesda, Maryland, March 16, 2017. (Photo by Joseph Eddins)

Erin Bolling
Army Medicine

A split second – that's all the time it takes for a brain injury to occur resulting from an accident, often changing lives forever. A percentage of these incidents may be avoided with preventative measures; however, once sustained, brain injuries can range anywhere from mild to severe.

Our nation's service members face an increased risk for brain injuries due to the nature of their training and combat environments. To address this concern, the U.S. Army Medical Research and Materiel Command maintains various teams of subject matter experts and funds extramural investigators devoted to finding preventative, diagnostic and treatment methods for the wide spectrum of brain injuries.

See TBI on page 7

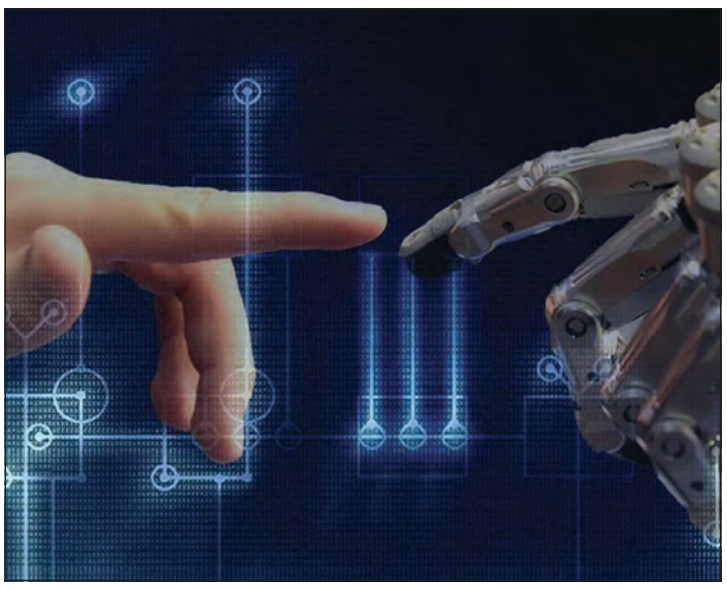
AI, robots and the future of warfare: Discussions among Mad Scientists

Tom Piernicky
U.S. Army Futures Command

The U.S. Army Training and Doctrine Command and the University of Texas at Austin hosted the Mad Scientist Conference at the university April 24 and 25. The Mad Scientist Conference brings together military, academia and private industry experts in fields such as artificial intelligence, robotics, ethics in future innovation and the future of space.

This year's conference focused on disruption and the future operational environment. With the Army's effort to modernize the force, it is critical for collaboration between the Army and the brightest minds of technological innovation.

See SCIENTIST on page 2



Mad Scientist Conference (U.S. Army illustration)

Army astronaut reflects on mission 250 miles above Earth

Sean Kimmons
Army News Service

An Army astronaut on a six-month mission in space recently shared her experience, saying she still leans on her military training while aboard the International Space Station.

Lt. Col. Anne McClain, a former helicopter pilot who has flown over 200 combat missions, blasted into space on a Russian Soyuz rocket in early December to serve as a flight engineer for her crew.

"I spent my whole career working high-risk missions in small teams in remote areas, which is what we're doing right now," she said in an April 24 interview.

McClain, 39, is one of five Soldiers in the Army Space and Missile Defense Command's astronaut detachment. Its commander, Col. Andrew Morgan, is slated to launch July 20, the 50th anniversary of the Apollo 11 Moon landing.

See ASTRONAUT on page 3

Astronaut Lt. Col. Anne McClain takes a selfie during a 6.5-hour spacewalk to upgrade the orbital complex's power storage capacity March 22, 2019. McClain, one of five Soldiers in the Army Space and Missile Defense Command's astronaut detachment, is currently on a six-month mission in space. (Photo courtesy of NASA)

More than $1 million

From left to right: Spc. Brenton Kirk, Active Duty Military Volunteer of the Year; Monalisa Engdall, Family Member Volunteer of the Year; Col. Sean Fisher, U.S. Army Garrison Alaska commander; Command Sgt. Maj. Juan Cornett, USAG Alaska command sergeant major; Mary Hamby, Department of the Army Civilian/Retiree Volunteer of the year; and Camellia Valencia, Youth Volunteer of the Year, present a check April 25 for $1,025,968.45 to signify the 37,375 volunteer hours from all of the USAG Alaska volunteers combined in the last year at the Volunteer Recognition Ceremony. (Photo by Daniel Nelson, USAG Alaska Public Affairs)

WEEKEND WEATHER

Friday

AM Snow showers, with a high of 45 and a low of 21 degrees

Saturday

Mostly cloudy, with a high of 48 and a low of 28 degrees.

Sunday

Mostly sunny, with a high of 54 and a low of 35 degree.

USAG ALASKA SUMMER CONCERT

Fort Wainwright, get ready for the biggest event of the season! The USAG Alaska Summer Concert is on June 8 at the Chena Bend Clubhouse & Golf Course! Enjoy an evening with friends, featuring country music artist, Chase Bryant, with openers Jared Mahone and Lakin, and Nick Reynoldson as your MC. Food, a beverage tent, and lawn games will be available, plus so much more!

Online tickets are available now through June 8. Purchase your tickets using the online ticket sales link here: www.signmeup.com/130629

Nutrition Corner: Did you know

Aimee Duncan
Medical Department Activity – Alaska Registered Dietician

Did you know that farmers markets can be a convenient and economical way to procure healthy food for your family? The idea of the farmers market is centuries old, but the value of this idea has shifted somewhat through the ages.

As industrialization lead to mass production of food stuffs, retail markets and specialized groceries flourished; these operations allowed for a shopper to go one place for several kinds of goods that had come from a variety of producers and through a middle man (the grocer); this was more convenient for everyone at the time. As the technologies of the modern day food system developed over the past century, they allowed for quick, inexpensive production and transport of food. This resulted in further separation between the producer and the consumer, without a substantial increase to the final price of the food item.

In general, this scenario means that the average farmer does not necessarily sell goods directly to the person who eats it. But this same modern industry has also created a market with less variety. And in specifically remote places, where the cost of food transport does create an added cost and burden on food quality (read: Alaska), some of the primary benefits of retail food shopping become less applicable. Local farmers markets have grown in popularity over the past 10 to 20 years as consumer interest in this country and around the world has shifted toward freshness and quality.

The trend is bringing farmers back into direct contact with the final consumer to offer more local flavor and variety. In some cases, such as those where remote location drives up even retail food cost, consumers can experience the advantage of these markets without a significant change in cost; and for at least a few wonderful weeks during the summer, this happening all the way up here in Fairbanks, Alaska!

And believe it or not, the benefits of farmers markets stretch beyond your kitchen, dining room table and pocket book; these enterprises benefit the farmer too. When the farmer avoids selling to a wholesaler they are able to achieve a higher profit margin, and focus energy on quality, service and longevity of the farm. Communities benefit too, as the farmers markets are a great venue for generating interest in local businesses, connecting the rural and urban populations of a given area, and bringing people together to highlight responsible use of shared resources.

Fairbanks is home to the Tanana Valley Farmer's Market, located at the corner of College Road and Caribou Way. Here you can see for yourself the unique products of local farmers, processors and crafters.

For more information about your local farmers' market check out this website: http://tvfmarket.com/

Featured Food(s):

These are just a few of the produce items that you will find in season here in the interior of Alaska and can often purchase from your local farmers market.

Fresh and dried Herbs – rosemary, oregano, savory, thyme, sage, dill, tarragon, basil
Berries – raspberries, blueberries
Broccoli and Cauliflower
Cabbage
Carrots
Beans and Peas
Potatoes
Radishes
Zucchini
Turnips
Tomatoes
….. And so many more!

MEDDAC Minute

Brandy Ostanik
Medical Department Activity – Alaska, Public Affairs

SUMMER APPOINTMENTS

Due to a possible shortage of appointments during the summer permanent change of station season, TRICARE Standard and TRICARE Select patients will not have access to appointments at Medical Department Activity – Alaska from mid-May through September. This change ensures the maximum number of appointments are available for beneficiaries who chose TRICARE Prime.

PRENATAL BREASTFEEDING CLASSES

Are you pregnant and looking for information on breastfeeding? Join our lactation consultant and other moms-to-be the third Wednesday of each month from 1 to 2:30 p.m. or the fourth Tuesday of each month from 6:30 to 8 p.m. to answer questions such as the benefits of skin-to-skin, how to recognize when your baby is hungry and how to ensure you have a good milk supply. Classes are held at Bassett Army Community Hospital in the third floor conference room, and are open to all beneficiaries without a referral. Call 361-5958 for more information.

THIRD PARTY INSURANCE

Do you have insurance other than TRICARE? Guaranteed no extra cost to the beneficiary, Bassett ACH is required to obtain a copy of private health insurance coverage from all non-active duty beneficiaries. To provide us with this information, beneficiaries will be asked to complete a DD Form 2569 annually.

SPECIALIST AVAILABLE

Did you know you can see a specialist right here at Bassett urinary incontinence, overactive bladder, pelvic organ prolapse and fecal incontinence without a referral from your primary care manager? Call 361-4000, option 4, option 1, option 1 to request an appointment with Dr. Christa Lewis.

Symptoms -

1. Stress Urinary Incontinence: leakage of urine with cough/laugh/sneeze/exercise
2. Overactive Bladder: urinary urgency, frequency, urgency incontinence; not being able to make it to the restroom in time
3. Pelvic Organ Prolapse: vaginal bulge/pressure/feeling like sitting on a ball. Noticing vaginal tissue at or beyond the vaginal opening
4. Fecal Incontinence: leakage of stool

SLOW DOWN

We have had several close calls this past week with pedestrians almost being hit by drivers going too fast through the parking lot. We ask that staff and patients both adhere to the 5 mph speed limit to ensure the safety of everyone.

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
Referral Center: 361-1810
Tricare On-Line: *www.tricareonline.com*
United Health Care: *uhcmilitarywest.com*
1-800-988-9378

SCIENTIST

Continued from page 1

"Mad Scientist and Army Future Command are two sides of the same modernization coin," said Lt. Gen. James Richardson, deputy commanding general of Army Futures Command. "We need to tap into America's unique culture of innovation. That's why we're here in Austin. AFC is an opportunity for collaboration with the best minds in the world in academia and industry."

Collaboration today to solve the complex problems of tomorrow's battlefields requires significant imagination to predict possibilities.

"The future of warfare will be both familiar and utterly alien," Richardson said.

With the development of evolving artificial intelligence and robotics, Mad Scientists discussed the applications they have on future warfare.

"When technology is proliferated down to the battlefield, what happens?" asked Robert Work, senior counselor for defense and distinguished senior fellow for defense and national security at the Center for a New American Security. "We'll inevitably go to more unmanned systems."

While wars today feature manned combat vehicles, the Mad Scientists suggest wars of the future may be fought by drones and AI-controlled machines. Work referenced the Army's next generation combat vehicle currently in development that has the potential to be optionally manned.

One way future vehicles can operate without a human crew is using AI.

"How do we make autonomous systems behave in a trustworthy fashion?" asked Dr. Maruth Akella, professor of aerospace engineering and engineering mechanics at UT-Austin.

A primary goal of AI and robotics is full autonomy to perform increasingly complex tasks. The Mad Scientists questioned how to establish ethics and human oversight for automated machines used on complex battlefields where non-combatants, enemy forces and partner forces are intermingled in real-time, dynamic domains.

The discussions examined how much autonomy should autonomous machines have in military operations.

"How much human control do we want or need to have over these autonomous systems?" asked Dr. Paul Zablocky, program manager for the strategic technology office of the Defense Advanced Research Projects Agency.

To further understand the implications of autonomous machines in the operational environment, the conference speakers discussed how AI learns and how humans are involved in the AI-learning process.

"We need to look at integrated human-in-the-loop systems," said Dr. Garrett Warnell, a research scientist with Army Research Lab. "When robots are becoming autonomous, they need a lot of human interaction. They slowly depend less and less on humans and become more autonomous."

If robotics are considered for warfare in the future, Work said we must pursue systems with tele-operated capabilities. Additionally, the panelists strongly emphasized that robotics must be disposable, which opened the conversation to how much these technologies might cost. Work pointed out that China could pass the U.S. in absolute GDP in about 10 years.

"The U.S. cannot spend our way back to military dominance," said Work. "That means that we have to out-think, out-innovate and out-maneuver our competitors."

The opportunity to collaborate, out-think and out-innovate is the reason that Army Futures Command was created and based in Austin amongst a variety of tech companies, start- ups and innovators.

Each speaker at the conference was presented with a certificate that declared them as official Mad Scientists. For those seeking more information about the Mad Scientist program, visit: https://community.apan.org/wg/tradoc-g2/mad-scientist.

ALASKA POST
The Interior Military News Connection

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The ALASKA POST – The Interior Military News Connection

The Chaplain's Corner

Chaplain (Lt. Col.) Paul Fritts
U.S. Army Garrison Fort Greely

A sermon illustration I have often used goes like this: One beautiful spring morning, Jane grabs her baseball bat and ball for some batting practice. Alone in her backyard she announces to no one in particular, "I am the greatest batter in the world!" Jane tosses the ball into the air, swings and misses. The ball lands with a thud at her feet. Undeterred, Jane picks up the ball and again announces: "I am the greatest batter in the world!" She tosses the ball into the air, a bit higher this time, swings and misses. Fiercely determined now, Jane picks up the ball for a third time and shouts "I AM THE GREATEST BATTER IN THE WORLD!" Tossing the ball even higher into the air, she swings with all her might...and misses. The ball lands at her feet and rolls a few inches in defiance of the greatest batter in the world. Jane frowns, picks up the ball and examines it closely. After a moment, she smiles and announces to no one in particular, "Who knew? I'm the greatest pitcher in the world!"

The story is funny because the punch line is unexpected, which reinforces a subtle, but important lesson: I cannot control events that may cause me to "swing and miss," but I can control my attitude about those events. One way to describe the process of finding the positive in any potentially negative situation is reframing it. The online Cambridge Dictionary defines reframing for this purpose as changing "the way something is expressed or considered." In other words, it means looking at one's circumstances from a different, hopefully more positive, point of view.

Jesus used reframing as a teaching technique when he said in Matthew 5:43-45, "You have heard that it was said, 'Love your neighbor and hate your enemy.' But I tell you, love your enemies and pray for those who persecute you, that you may be children of your Father in heaven." Basic, human instinct intuitively understands loving those who love me, and hating those who hate me, as self-evident, common sense truth. But Jesus reframes human understanding and compels us to reconsider this "truth" from a divine perspective. Indeed, Jesus' words in this text make our status as children of our Father in heaven conditional on our willingness to reframe how we love others, especially our enemies.

Robert G. Ingersoll, a renowned late 19th century American politician and orator, said: "Give to every human being every right that you claim for yourself." In addition to loving our enemies, perhaps an even more radical lesson from Jesus' teaching on the subject is to reframe who we consider an "enemy." Given the recent tone of the so-called "culture war," not just in the U.S. but around the world, it is perhaps one of the most important questions a Christian should be able to answer. In a worst-case scenario where I consider everyone "not like me" to be my enemy, ensuring that every human being also enjoys every right I enjoy is the first signpost on the journey to being a child of my Father in heaven.

Chaplain (Lt. Col.) Paul Fritts

The Fort Greely Chapel community is open and accessible to everyone in the Delta Junction/Fort Greely community – even non-military. We are a traditional, protestant Army chapel service meeting on Sundays at 10 a.m. with a weekly Communion observance. Interested? Please call 907-873-4397 to arrange for gate access. "Like" our chapel Facebook page by searching "Fort Greely Chapel" or use your web browser to go to https://www.facebook.com/FGAChapel.

For God and Country,
Chaplain Fritts

ASTRONAUT

Continued from page 1

SPACEWALKER

During her stay, McClain has been able to complete two spacewalks – both about 6.5-hours long – for maintenance outside the space station, which is about the length of a football field.

On March 22, she and another American astronaut replaced batteries and performed upgrades to the station's power system. Then on April 8, she and a Canadian astronaut routed cables that serve as a redundant power system for a large robotic arm that moves equipment and supports crews while outside the station.

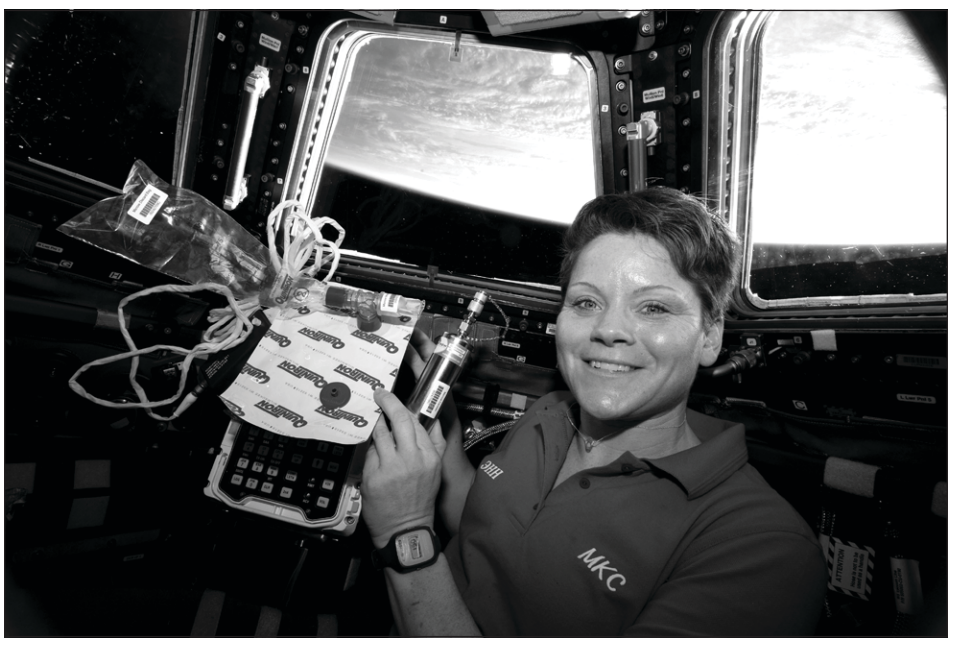
When she first started to train for spacewalks back in Houston, McClain said it reminded her of being an OH-58 Kiowa helicopter pilot on a scout weapons team.

The spacesuits, she noted, are like small spacecraft that need to be constantly monitored in order for their occupants to stay alive against the extreme temperatures and vacuum of space. Suits have their own electronics, power and radio systems – similar to components helicopter pilots often cross-check while remaining focused on the mission.

Then there is the buddy team aspect of both operations.

"Up here on a spacewalk, that's the other astronaut that's outside with you," she said. "On the ground, that was the other helicopter that I was flying with.

"Most importantly, you have to be able to work with that other person and their system – their spacesuit, their helicopter – in order to accomplish the mission," she added. "It was actually amazing to me how many of the skills kind of carried over into that environment."



Astronaut Lt. Col. Anne McClain is pictured in the cupola holding biomedical gear for an experiment that measures fat changes in the bone marrow before and after exposure to microgravity. McClain, one of five Soldiers in the Army Space and Missile Defense Command's astronaut detachment, is cur-rently on a six-month mission in space. (Photo courtesy of NASA)

SPACE RESEARCH

Unique from her Army days has been her participation in scientific experiments on the station, the only research laboratory of its kind with over 200 ongoing experiments.

An upcoming experiment, she said, is for an in-space refabricator, a hybrid 3D printer that can recycle used plastic to create new parts.

"That's a really exciting new technology to enable deep-space exploration," she said.

In December, NASA announced plans to work with U.S. companies to develop reusable systems that can return astronauts to the Moon. Human-class landers are expected to be tested in 2024, with the goal to send a crew to the surface in 2028.

What's learned in these missions could then help NASA send astronauts to Mars by the 2030s, according to a news release.

While currently in low Earth orbit, McClain explained that resupply vehicles can come and go. Beyond that, crews would need to be self-sustained for longer periods of time.

"We're using the space station as a test bed for some of the technologies that are going to enable us to work autonomously in space," she said, "and hit some of our deep-space exploration goals."

As with other astronauts, McClain has also become a guinea pig of sorts in human research tests that study how the human body reacts to microgravity.

One experiment she has been a part of is monitoring airway inflammation up in space.

With a lack of gravity, dust particles don't fall to the ground and will often be inhaled by astronauts. The tests measure exhaled nitric oxide, which can indicate airway inflammation, she said.

This research could be important if astronauts are sent back to the Moon, which is covered with a fine dust similar to powdered sugar, she said.

"If that's in the air and we're breathing that for months on end, if we're doing extended stays on the lunar's surface," she said, "we need to understand how that affects the human body."

OVERVIEW EFFECT

While there is no typical day in space, McClain said their 12-hour shifts normally start with a meeting between them and support centers in the U.S., Russia, Germany and Japan.

When not helping with an experiment, astronauts do upkeep inside the station that includes plumbing, electricity work, changing filters, checking computer systems or even vacuuming.

The best parts of her day, she said, are when she gets the chance to peer down on Earth. Every day, the station orbits around the planet 16 times, meaning astronauts see a sunrise or sunset every 45 minutes.

"One of the cool things about going to the window is if you're not paying attention, you don't even know if it's night or day outside," she said. "You could look out and see an aurora over the Antarctic or you could look out and see a beautiful sunrise over the Pacific."

After seeing Earth from above with her own eyes, McClain has come to realize people there are more dependent on each other than they may think.

"You get this overview effect where you realize how small we are and how fragile our planet is and how we're really all in it together," she said. "You don't see borders from space, you don't see diversity and differences in people on Earth."

Those back on Earth can also gaze up and enjoy a similar effect.

"Sometimes we focus too much on our differences, but when we all look up into space, we see the same stars and we see the same sun," she said. "It really can be unifying."

Whenever she glanced up at the stars as a young child, she said it was a magical experience and eventually sparked her interest in becoming an astronaut.

Her family supported her dream and told her she could do whatever she wanted as long as she put in the work.

"They didn't tell me how much work it was going to be," she said, laughing, "but it certainly was a lot more than I anticipated."

Before she was selected to NASA's human spaceflight program in 2013, McClain, of Spokane, Washington, attended the U.S. Military Academy and was commissioned in 2002.

She later became a Marshall scholar and earned two master's degrees. She then flew over 2,000 flight hours on 20 different aircraft and became a Kiowa instructor pilot.

In June, she is set to return back to Earth.

"No matter what your passion is, you really can find it within the Army," she said. "The opportunities really are endless and the sky is not the limit."

ESTATE NOTICE

Kyle Holman Sr. passed away in Fairbanks on April 08, 2019. Anyone having claims against or who is indebted to the estate of Kyle Holman Sr., of U.S. Army Garrison Alaska, Fort Wainwright Department of Public Works, Business Operations Division, may contact Capt. Filiberto Martinez, USAG Alaska DPTMS, Fort Wainwright, Alaska 99703, email Filiberto.martinez.mil@mail.mil.

ESTATE NOTICE

Cynthia R. Durham passed away in Fairbanks on April 19, 2019. Anyone having claims against or who is indebted to the estate of Cynthia R. Durham of the Transportation Division, Logistics Readiness Center, Army Field Support Battalion – Alaska, Fort Wainwright, Alaska, 99703, may contact Maj. Raphael T. Martinez, Support Operations, AFSBn-Alaska, Fort Wainwright, Alaska, 99703, via email at raphael.t.martinez.mil@mail.mil.

Fort Wainwright honors recent graduates with combined ceremony

GRADUATES

Central Texas College
Certificate of Completion in Medical Office
Maria-Paula Aguirre

Associate of Arts in General Studies
Gregory Berry
Brandon Richter
Jose Carrasquillo
Garrison Roane
Hayden Crouch
Nathaniel Swartz
Michael Kempner
Lorn Thomas
Fearon Williams

University of Alaska Fairbanks/ Community & Technical College
Certificates
Nichole Brown - Dental Assistant
Joseph Fiore Pre-Nursing

Associate of Arts
Shirley Cutrer - General Studies
Judah-Pegs Christian - General Studies

Associate of Applied Science
Kenndera Rediske - Radiologic Technology

Bachelor of Biological Sciences
Renee Nowicki - Biology and Wildlife Management

Bachelor of Science

Joshua McCandless - Mechanical Engineering

Bachelor of Science, Emergency Management
Robert McPherson - Homeland Security and Emergency Management

Wayland Baptist University
Associate of Arts
Scottie Davidson
Michael Fifield
Herrell Douglas Sr.
Seth Schmadeka

Bachelor of Applied Science
Adrian Camacho
Casey Hardy
Andrea Cherilus
Evonne Johnson
Eddie Coleman Jr.
Stephen Mich
Ricardo Monroy
Michael Fifield
Mia Newmeyer
Zachariah Fischer
Courtney Sullivan
Benjamin Hardy
Andrea Thomas
Brenson Hardy
Diamond Thompson
Jerome Vahalik IV
Carlos Fernandez-Martinez

Master of Education
Mark Peterson
Steven Pruitt
Nuttaya Spaulding

Master of Arts in Management
Monica Menninger

Master of Public Administration
Dianna Durbin

American Military University
Master of Arts in Emergency and Disaster Management
Krista Paul

Excelsior University
Bachelor of Liberal Arts
Randal Wolfe

Liberty University
Associate in Early Childhood Education and Bachelor of Science in Criminal Justice – Business Administration and Management
Anita J. Trompeter

Trident University
Associate Professional Science
Robert Etherridge

Webster University
Master of Arts in Management and Leadership
Zachary Peterson

Maj. Zachary Peterson, executive officer for U.S. Army Garrison Alaska, presents the student address April 29 at the combined graduation ceremony on Fort Wainwright. The community event held in the Northern Lights Chapel brought together Soldiers and Family members who had recently completed educational programs to present certificates and diplomas and honor their academic achievements in witness of friends, families, leaders and coworkers. Participants in the ceremony included University of Alaska Fairbanks chancellor Dr. Daniel White, UAF chair Board of Regents Dr. John Davies, program coordinator UAF Community and Technical College Ramona McAfee, Wayland Baptist University executive director and dean Dr. Beth Durbin and Fort Wainwright site director Bryan Myers, Central Texas College dean for Continental and Fort Hood Campuses Raul Garcia, CTC Alaska area director Sabine Thomas and Fort Wainwright education services officer Jerri Tuck representing external degree colleges and universities. Reserve Officer Training Corps professor of Military Science at UAF Lt. Col. George Plys presented the commencement address. (Photo by Grant Sattler, U.S. Army Garrison Alaska Public Affairs)

Fort Wainwright MoMC parade

A Month of the Military Child parade, held April 26, 2019, celebrated not only military kids, but also the CYS directors that support them. Jo Ann Frazier (Right), the retiring and outgoing CDC 2 Facility Director and incoming director, Linda Fetters (Left), both attended and supported the parade through the event's 2019 planning and success. Frazier officially retires on May 31, 2019, after 29 years of service. (Photo by U.S. Army Garrison Alaska, Family Morale Welfare & Recreation)

Elizabeth "Betsy" Sanborn, CDC 1 Facility Director gives all the children high fives during the CDC 1 Month of the Military Child parade on April 26,2019. (Photo by U.S. Army Garrison Alaska, Family Morale Welfare & Recreation)

Fort Wainwright Family & MWR

Weekly Events

May 3 - 10

4 **Cinco de Mayo Spin Class**
May 4
10 a.m. to 12 p.m.

Kickoff Cinco de Mayo with a spicy 2-hr cycling class by STRONG B.A.N.D.S. (Strong Balance, Activity, Nutrition, Determination and Strength). This initiative promotes healthy, active lifestyles for Army Service Members, Families, Retirees, and Civilians.

Physical Fitness Center, building 3709
Call 353-7223

4 **Galaxy Bowling**
May 4
12 to 11:55 p.m.

Break out your Jedi skills for a night of Galaxy Bowling! Hit a strike when a red pin is in the lineup and you could win big! The price is $15 per person and includes 3 games and shoe rental.

Nugget Lanes Bowling Center, building 3702
Call 353-2654, reservations recommended

4 **May the Fourth Be With You Party**
May 4
5 to 7 p.m.

May the fourth be with you on May 4th as you come dressed in your favorite galactic character for a free evening of force field fun! In order to become a true Jedi knight, you must first undergo a series of obstacles and training activities. Once you have completed your training, you will be put to the test!

Last Frontier Community Activity Center, building 1044
Call 353-7755

8 **Lunch and Learn: Understanding Sleep and Why it Matters**
May 8
11:30 a.m. to 12:30 p.m.

Learn about sleep patterns, healthy amounts of sleep, and more! This event is hosted by EFMP ACS and presented by the Bassett Army Community Hospital, Behavioral Health. Tune in on Facebook LIVE or join in on this fun and informative training in person.

Army Community Service, building 3401
Call 353-4227

10 **Adult Craft Night**
May 10
5:30 to 7 p.m.

Enjoy a night out with friends and learn how to create an original piece of artwork. There will be craft beer and wine available for purchase for those who are 21 and older. Artistic experience is not necessary.

Last Frontier Community Activity Center, building 1044
Call 353-7755, registration required

Online tickets for the USAG Alaska Summer Concert on June 8 are now on sale
Find out more at www.wainwright.armymwr.com

History Snapshot: Quonset Hut, 1944

U.S. Army Garrison Alaska Cultural Resources Program

May is Historic Preservation Month

The U.S. Navy first commissioned the Quonset hut in 1941 when it needed an easily shippable, multi-use structure that could provide durable shelter in a variety of climates. Based on the British Nissan hut, the Quonset hut came in a variety of prefabricated sizes and could be assembled with no specialized training or tools on virtually any level surface, including the bare ground. Quonset huts were also easy to move once assembled and could be readily hoisted onto trucks, or even carried in one piece by a troop of strong Soldiers. At Ladd Field, hundreds of Quonset huts were hastily put up to accommodate the arrival of new Soldiers after the onset of World War II. Quonset huts were also used extensively in the Aleutian Islands. After World War II, unneeded huts were sold to the public and repurposed into schools, offices, businesses, garages, and even private homes.

Quonset Hut, 1944
(Image courtesy of Harold Wright and the 46th 72nd)

CAMERA

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Ferguson was tasked with not only finding a way to accurately evaluate the environmental impacts of about 90,000 cubic yards of dredge material at deep depths, but also navigating the Alaska District's first time conducting a site-selection study to identify a dredged material disposal area in ocean waters. Under the permitting authority of the U.S. Environmental Protection Agency's Section 103 of the Marine Protection Research and Sanctuaries Act, a proposed disposal location must comply with several ocean dumping criteria such as the purpose and need, environmental impacts and adverse effects on other uses including navigation.

"We had never studied areas in depths like this and we've never studied somewhere as intensively before because the requirements of the ocean dumping act are explicit," Ferguson said. "When I got done with my initial coordination with EPA and realized how impactful it would be to collect video, I took a step back and reevaluated what our capabilities were and what we would need to meet the requirements of the site-selection study in a collaborative way."

He selected three potential disposal areas within Frederick Sound consisting of 24 proposed camera sites to better inform him of the epibenthic fauna (life present at and just above the sea floor) facing potential environmental impacts of dredge material disposal. Previous video-recording capabilities limited Ferguson's view to depths of about 120 feet, far shallower than the average depth of 500 feet at each site. The deepest locations included in the survey were expected to reach 690 feet. Additional restrictions on possible solutions presented by the deep depths included lack of natural light, cold temperatures depleting battery life, pressure on camera housings and lack of mobility.

"It also needed to be transportable," Ferguson said "It needed to be able to be broken down and shipped somewhere because we work all over the state here in Alaska, and there are many locations that are only accessible by plane or by boat."

With those requirements in mind, Ferguson set out on his own to fabricate a camera system capable of the job. After contacting a small company that worked with him to provide an adequate camera and light setup, he constructed a rig from galvanized and stainless steel that was compact when broken down and easily transportable. Capable of being deployed on different support vessels, the camera system is dropped over the side of a boat with the same winch used for crab pots. While in the water, the camera can connect with a computer tablet to collect field location data, take georeferenced photos of additional shrimp and crab pot samples, and use existing imported map geometry from geographic mapping systems.

During the camera system's initial Frederick Sound deployment in August 2018, Ferguson made in-field adjustments, such as moving hardball buoys and anchor weights, to accurately capture the ecosystem on film. The long hours and alterations paid off after review of the footage showed clear images of the seabed 500 feet below him. So far, video from the depths has captured crab, shrimp, fish, sea urchins, brittle stars and a variety of smaller crustaceans called amphipods. The camera system has been successfully deployed on three trips to Petersburg, allowing a better assessment of the possible environmental impacts at a disposal site.

More than collecting clear footage of a previously inaccessible environment, the camera system helped both the Corps and the project save money by keeping the work in-house. Early estimates placed the cost of performing a site selection, including benthic surveys, at around $1 million, but Ferguson estimates he has conducted the work for about one-tenth the cost of hiring a contractor.

Other filming options, such as use of an underwater ROV (Remotely Operated Vehicle) or benthic sled, presented problems or high costs that were not feasible for the project. Chris Hoffman, a fellow biologist with the Environmental Resources Section, has previous first-hand experience with ROVs and encountered one of the potential drawbacks for their use on this project while helping Ferguson on the initial deployment of the camera system.

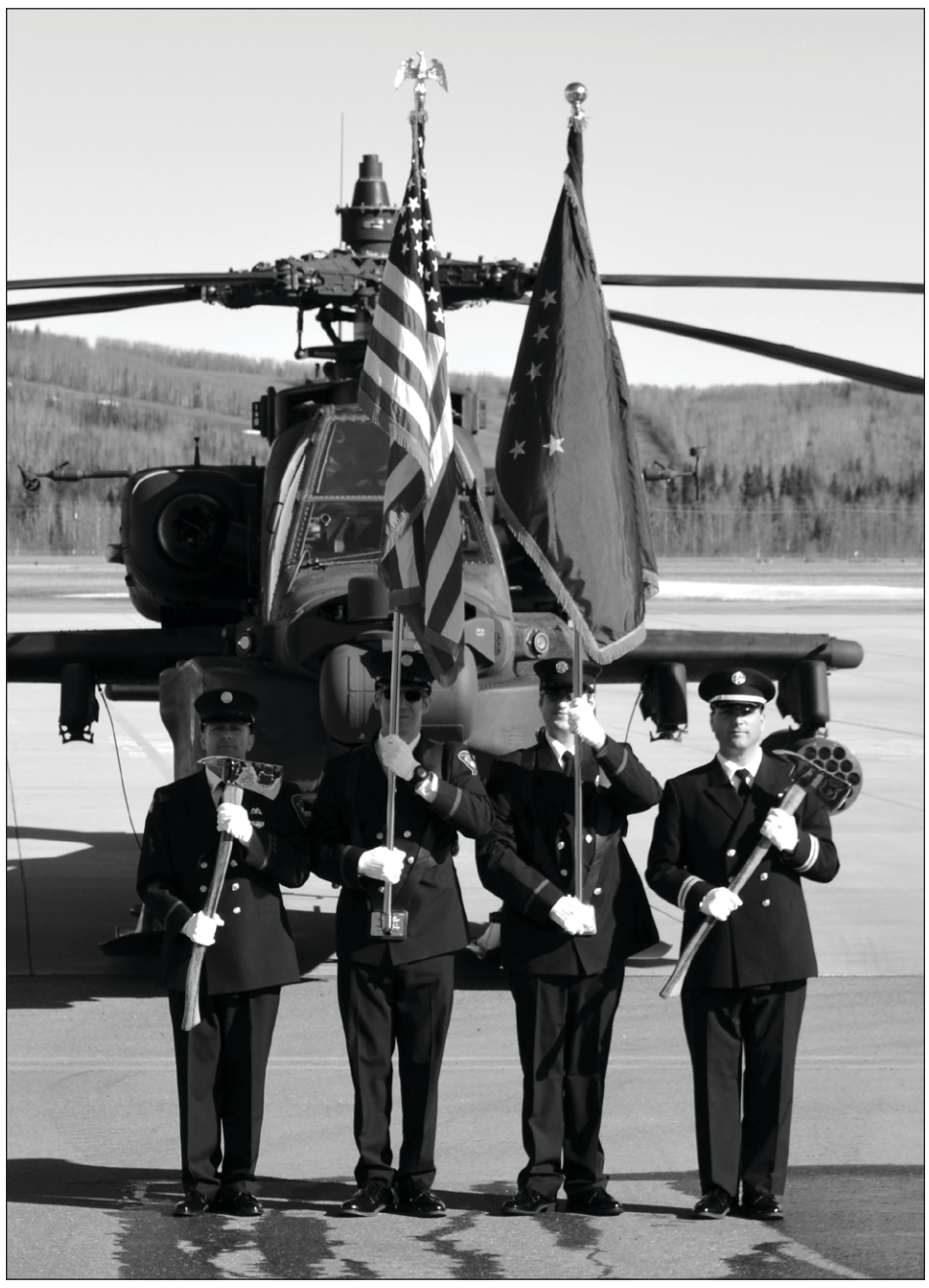
"The first time we dropped that camera last August, we ran into a sunken vessel and lost that 25 pound cannonball," Hoffman said. "The last thing you'd want is that $100,000 ROV to become an anchor."

Video footage from the 24 camera sites and three potential disposal areas was shared with external agencies including the Alaska Department of Fish and Game's Shellfish Management Office, National Marine Fisheries Service's Habitat Division and EPA Ocean Dumping Coordinator. Additional video clips, photos and qualitative analysis were shared through satellite imagery files, which are easily transferable and viewable on most agency systems.

The project and site selection are still ongoing, but the camera system has already shown promise outside of Petersburg. In February, Ferguson presented his design to a committee at the Corps' Technical Innovation Forum, which is considering the possible adoption of his system throughout the organization. Ferguson and Hoffman hope to use the camera system on upcoming Alaska civil works projects, such as navigation improvement studies in Kotzebue, Whittier, Elfin Cove and especially the remote island of St. George.

"One of the good things about this camera system is that it's so flexible," Ferguson said, "It could be configured to satisfy a lot of different needs in a lot of different places."

Fort Wainwright Donald P. Hyde Station 1 memorial



Firefighters from Fort Wainwright's Donald P. Hyde Station, also known as Fire Station 1, honor the memory of Pvt. Donald P. Hyde, a firefighter who died from injuries sustained in a house fire on April 27, 1971. Hyde was in an off-duty status when he responded to the blaze and was overcome by smoke and flames as he attempted to rescue a child. (Photo by Eve Baker, U.S. Army Garrison Alaska Public Affairs)

TBI

Continued from page 1

Throughout the USAMRMC, subordinate commands and directorate organizations work in specialized medical focus areas, ranging from early medical research through U.S. Food and Drug Administration licensing and fielding, in pursuit of effective medical solutions for our warfighters.

The Congressionally Directed Medical Research Programs - known as the CDMRP - is among the directorate organizations looking to transform health care by funding innovative and impactful medical research. As part of its mission, the CDMRP manages research awards for multiple TBI-related research efforts, from early investigative phases through translational work and forward to initial clinical trials.

The Psychological Health/ Traumatic Brain Injury Research Program was established in fiscal year 2007 to address the impact of TBI on our service members in the Iraq and Afghanistan conflicts. In partnership with the Joint Program Committees and advanced development teams, the CDMRP provides operational execution management support as needed for the PH/TBIRP within the Defense Health Program of the Department of Defense.

"In many cases, CDMRP co-authors funding announcements with the JPC, coordinates the peer and programmatic reviews and manages the awards that result," said Dr. Dwayne Taliaferro, PH/ TBIRP program manager.

"The goal of the JPCs is to translate military medical needs to military medical capabilities," he added. "This translation utilizes the knowledge and expertise of the JPCs, CDMRP, researchers and the U.S. Army Medical Materiel Development Activity."

Taliaferro further explained that when a need for additional expertise arises (e.g., product development or military technical expertise), the subject matter expertise is acquired in coordination with the JPCs. In many cases, both advanced development and CDMRP may manage awards to the same investigators or similar projects that target the same capabilities, so critical information is exchanged between the two groups to leverage each other's knowledge. In the cases where the capabilities transition to a formal acquisition program, CDMRP representatives are often included as team members to provide expertise and input.

The Combat Casualty Care Research Program, or JPC-6, is another USAMRMC directorate organization that specializes in supporting research for brain injury treatment. Its mission is to drive medical innovation through the development of knowledge and materiel solutions for acute and early management of combat-related trauma, which includes point-of-injury, en-route and facility-based care.

Dr. James B. Phillips, CCCRP's Neurotrauma portfolio manager, explained how CCCRP leads the science and technology efforts with expertise in brain trauma for early innovative solutions.

Along with laboratories throughout the USAMRMC and other DOD S&T organizations, CCCRP collaborates with an important community of expert scientists across international business and academic institutions.

"CDMRP is our execution management office that supports CCCRP with expert program-cycle management, including a robust two-tier competitive review process for brain trauma S&T research investments," said Phillips.

"Our partner at the USAMMDA has product managers who chair our integrated product teams," he said. "Through its expertise and positions for technology transition, FDA requirements [and] developmental and operational testing, USAMMDA is strategically positioned to integrate promising technology into the hands of military providers for acute and early management of brain trauma."

Phillips explained that the partnerships are important for maintaining the flow of innovative brain trauma solutions, through early and documented technology maturation and risk reduction to more advanced development for engineering and manufacturing in order to meet production and deployment as efficiently as possible.

"The rate of technology advancement can outpace previously planned solution targets, and these partnerships are necessary to stay on pace and garner the advances in technology," he added.

The CDMRP coordinates with USAMMDA to share information and includes USAMMDA representatives on programmatic panels for announcements that address military-relevant capabilities with a potential for transition to advanced development. During the review, the role of these representatives is to provide input to confirm translation potential of the proposed research in accordance with the mission of the DHP and JPC. During an award's period of performance, the CDMRP regularly provides information to the JPCs regarding the status of the research to let them know if the project is meeting or exceeding its research objectives.

The USAMMDA serves as the USAMRMC's medical product development activity for effective solutions requested by the military. As medical gaps are identified and research matures, projects are transitioned to the USAMMDA for further development.

"The goal of this office is to rapidly develop and field FDA-approved medical solutions across the continuum of care that aid in the detection, protection, prevention and treatment of neurotrauma and psychological health conditions, such as TBI, post-traumatic stress disorder and suicide," said Brian Dacanay, product manager for USAMMDA's Neurotrauma and Psychological Health Project Management Office.

Dacanay explained that, in order to achieve fielding of a product, the NPH PMO leads various areas that include cost, schedule, performance, concept of operations, logistics, sustainment, training, operational testing, environmental testing, risk management framework and draft capability documents.

"We are a part of the integrated product teams initiated by the JPCs," he said. "We translate research work from the JPCs/ CCCRP/CDMRP into products that can be used for service members in pre-hospital situations."

"The earlier we initiate the partnership, the better," he continued. "This allows us to understand the research work being developed, and make changes to a device in an early stage, as necessary, that may be applicable for mass production. This synergy allows for greater cohesiveness and success as products are submitted to the FDA for approval."

As you might imagine, these are not the only partnerships required to deliver lifesaving medical solutions. Additional government partnerships involve working with industry to speed the products development process. Sometimes, the USAMRMC managed program guides the entire project, and sometimes the final approval is achieved by the company. The following five brain injury diagnostic solutions are a result of these collaborative partnerships, resulting in FDA approval:

EYE-SYNC™ (SyncThink, Inc/ Brain Trauma Foundation):

This tool utilizes the process of how our eyes synchronize information to the brain. By using this tool and performing an assessment, the clinician can determine a value at which the individual's degree of vision impairment may translate to the degree of brain injury.

Ahead 100, Ahead 200, Ahead 300 devices (BrainScope):

Ahead 100 and 200 are FDA approved to be used as an adjunctive tool for the assessment of TBI. The Ahead 300 represents an evolution from the BrainScope products that have previously received FDA clearance, and, with its additional capabilities, will be the first product the company will sell commercially. The Ahead 300 features BrainScope's proprietary, patent-protected electroencephalography capabilities using sophisticated algorithms and machine learning to analyze a patient's head-injury data. Using state-of-the-art smartphone technology and a proprietary disposable electrode headset, the Ahead 300 rapidly assesses the presence of TBI in patients who present mild symptoms at the point-of-care.

Defense Automated Neurobehavioral Assessment Tool (DANA):

This tool is a mobile phone-based application designed to help medical providers identify cases of TBI in almost any setting, which can also help clinicians diagnose a patient in as little as five minutes.

Battlefield Seizure Detector for TBI Assessment (SeizTBI)/ DiscoverEEG:

This device uses software algorithms as a tool to analyze electroencephalograph (from user-specified electrode number and locations) and automatically calculates conventional electroencephalograph parameters (e.g., spectral edge frequency, total power, percent alpha, asymmetry).

Banyan Biomarkers:

The Banyan Brain Trauma Indicator™ is a diagnostic blood test used to measure levels of proteins, known as UCH-L1 and GFAP, which are released from the brain into blood and measured within 12 hours of head injury. Levels of these blood proteins after a mild TBI/concussion can help predict which patients may have intracranial lesions that may be visible by a computed tomography scan and those that may not. Being able to predict if patients have a low probability of these lesions can help health care professionals manage their patients, and help to inform the decision to perform a CT scan. Test results can be available within three to four hours. This project was guided to FDA approval through USAMRMC management, with the Army Surgeon General as the Sponsor.

These devices/tools will provide medical staff with the ability to diagnose and develop treatment based on the severity of the injury. It has been proven that the moments immediately following the injury are most critical and immediate treatment can significantly improve long-term outcomes, making these tools so critical.

"Although many of the capabilities developed can apply in the civilian setting, the military faces unique environmental, mobility, interoperability, complexity and affordability challenges that must be considered," said Taliaferro. "CDRMP's role is to ensure that the DOD's needs are clearly communicated at the front end in the funding opportunity announcement and [that] the emphasis remains during the award's period of performance."

As these partnerships show, it's not merely about working hard, as much as it is about working hard together. Reaching across organizations to utilize each other's strengths is how the DOD works to advance and quickly move products out to those who need them.

Taliaferro explained how partners in industry have been able to team up with the DOD groups to continue the forward momentum of this research.

Large-scale studies like the Transforming Research and Clinical Knowledge in TBI study, National Collegiate Athletic Association-DOD Concussion Assessment, Research and Education (CARE) Consortium, Service Academy Longitudinal TBI Outcomes study, Chronic Effects of Neurotrauma Consortium, the Defense and Veterans Brain Injury Center's 15-year study, and the Warfighter Brain Health Initiative, will bridge the gap between pre-injury, concussion diagnosis and long-term outcomes. Some projects provide snapshots of what happens in the first few months of injury; however, we lack pre-injury baseline or long-term follow-up data. Similarly for research regarding individuals with chronic symptoms, we have little information on their initial injury.

"Our toolkit to diagnose TBI has improved significantly since the approval of the first blood test for TBI," said Taliaferro. "The future holds additional refinement in terms of biomarkers for diagnosis, prognosis, prediction of treatment response and response to treatment. I think we are on the verge of an explosion of TBI advancements that will transform TBI research into TBI precision medicine."

We know preventative measures for brain injuries include wearing seatbelts in vehicles, wearing a helmet on motorcycles or bicycles and to using caution when in situations that could result in a fall. No matter how cautious we can be, it is in that split second when an accident is unavoidable that the solution discovered through medical research makes all the difference.

As long as our service members face brain injuries, you can be certain that these experts will continue working together to fill the research gaps toward effective medical treatments.