



INSTITUTE REPORT

VIRGINIA MILITARY INSTITUTE

Volume 49, Number 3, November 2020

'Do the Right Thing in the Right Way' Army Chief of Staff Stresses People First

By Mary Price

Gen. James C. McConville, 40th chief of staff of the U.S. Army, addressed faculty, staff, and the Corps of Cadets in Cameron Hall on Wednesday, Sept. 30. Due to the coronavirus pandemic, this event was closed to the public, and those attending were seated in assigned, socially distanced seats.

McConville, who succeeded Gen. Mark Milley as chief of staff in August 2019, took a conversational tone with cadets, stressing the importance of putting people first and taking care of them as one of the primary ways to become and



Gen. James C. McConville speaks in Cameron Hall Sept. 30.—VMI Photo by H. Lockwood McLaughlin.

stay “Army strong.” The chief of staff, a 1981 graduate of the U.S. Military Academy, then allowed approximately 40 minutes for cadet questions.

Immediately after he took the stage, McConville pointed out that the uniform he was wearing, while considered to be the “new” Army uniform, is actually the uniform worn by Army personnel who served in World War II, including Gen. George C. Marshall, VMI Class of 1901. Marshall, McConville noted, was in his current position—Army chief of staff—when World War II began.

“The greatest generation is passing the baton to all of you,” McConville commented. “And you’re

See McConville, page 7

Parents Deliver Pandemic Care Packages

By Mary Price

The idea began in early September in an online forum for the mothers of cadets—how do they show cadets that they are cared for in spite of Parents Weekend being canceled this year?

Melisse Hoyer, a member of the VMI Moms in Prayer 2022 Facebook group, had some thoughts, but they were ambitious, to say the least. Hoyer, mother of David

Turner '22, wanted to make and deliver a care package to every single cadet.

On Saturday, Oct. 3, Hoyer and a group of approximately 30 others volunteered their time to assemble the packages and put them on a U-Haul truck for delivery. Working with Command Sgt.

See Care Package, page 12

News of the resignation of Gen. J.H. Binford Peay III '62, superintendent, broke Monday, Oct. 26, as the November issue of the *Institute Report* was going to press. Brig. Gen. Robert “Bob” Moreschi, dean of the faculty and deputy superintendent for academics, has been named acting superintendent. The December issue of the *Institute Report* will pay tribute to Gen. Peay’s 17 years as superintendent.

'Older Than the Earth Itself'

Meteorite Collection Gifted to VMI by Alumnus

By Mary Price

It's a pretty safe bet to say that the chances of anyone ever donating something to VMI that's more than 7 billion years old are, well, astronomical.

And it's certainly not every day that something older than the Earth itself arrives on post via the U.S. mail. But that's exactly what's happened this fall when stargazer and Army veteran Paulo Rocha '87 donated a collection of 11 meteorites to the Department of Physics and Astronomy.

"I have a love for meteorites and decided to share that passion with the Institute in hopes other cadets will also enjoy the experience," Rocha wrote in an email.

Collectors can scour the Earth, of course, looking for fragments of these objects from outer space, but like nearly everything else these days, meteorite pieces are for sale online. That's where Rocha bought the meteorites he donated to VMI, after a careful screening of his sources to make sure he wasn't paying hundreds of dollars for a very terrestrial rock.

"Not everything that is on sale is the real thing, so one has to be careful," he commented. "The certified sellers are usually members of the International Meteorite Collectors Association (IMCA)."

Col. Greg Topasna, who teaches VMI's astronomy courses, was thrilled when Col. Tim Hodges '80, department chair, told him that there was an alumnus willing to donate meteorites to VMI.

"I've always wanted VMI to have a collection of meteorites, but you find other things to spend money on," he noted. Before Rocha's gift arrived this fall, VMI owned one meteorite—not exactly a collection—and Topasna doesn't know its origin, as it was left behind by Col. Dave Dupuy when he retired.

The meteorites from Rocha's collection are incredibly varied. The oldest is a very tiny piece of the famous Murchison meteorite, which fell to Earth in Australia in 1969. Scientists have dated the silicon carbide particles in the meteorite at 7 billion years, making the Murchison meteorite the oldest known object on the planet—and, in fact, 2.5 billion years older than the Earth itself.

As they ever-so-carefully pass around the tiny shard of meteorite, Topasna tells cadets, "This is the oldest thing you'll ever hold in your hand. This is a piece of the solar nebula from before we were even here."



The meteorite fragments recently donated by Paulo Rocha '87 range from 4.5 million to 7 billion years old.—VMI Photo by Kelly Nye.

But the Murchison meteorite is much more than an iron-containing rock that just happened to survive its fall from space. It's been found to contain amino acids, the building blocks of life. That makes it a perfect fit for discussion in Topasna's astrobiology class, in which cadets wrestle with questions such as how life is defined, how life might be discovered via signals from outer space, and perhaps most tantalizingly, must life be defined as carbon-based? Might silicon-based life forms exist as well?

"It's a really good question," said Topasna. "We can't rule it out, but there are reasons carbon wins out over silicon. ... It's a fun course."

The other meteorites from Rocha's collection are much younger than the Murchison meteorite—but in this case, "younger" is a relative term. Most meteorites are approximately 4.5 million years old. In the majority of cases, the true origin is unknown, but three from Rocha's donation are known to be from the moon and one is from Mars. They've been collected all over the planet, including Russia, Argentina, and Northwest Africa.

This fall, Topasna is interested in showing the meteorites to cadets in his classes and using them as a teaching tool. Down the road, he hopes to place the collection in a display case

so anyone passing by might stop and take a look, and so Rocha can be thanked in a public way.

"It makes a nice learning opportunity for the cadets," said Topasna. "This is a wonderful gift." ✨



Col. Greg Topasna, professor of physics, examines one of the lunar meteorites recently donated to VMI.—VMI Photo by Kelly Nye.

INSTITUTE REPORT

Volume 49, Number 3, November 2020

The Institute Report, VMI's monthly newsletter, publishes eight issues during each academic year. Inquiries, suggestions, news items, and address changes should be directed to Editor, Institute Report, VMI Communications and Marketing, Lexington, VA 24450-0304; (540) 464-7207; or VMIReport@vmi.edu.
© 2020 Virginia Military Institute.

Director Col. Bill Wyatt
Editor Maj. Michelle Ellwood
Assistant Editor Kelly Nye
Designer Robbin Youngblood
Institute Report Staff
H. Lockwood McLaughlin
Mary Price

Header photo on page 1 by
Kelly Nye

The Virginia Military Institute is committed to providing an environment that emphasizes the dignity and worth of every member of its community and that is free from harassment and discrimination based on race, sex, color, national origin, religion, age, veteran status, sexual orientation, pregnancy, genetic information, against otherwise qualified persons with disabilities, or based on any other status protected by law. In pursuit of this goal, any question of impermissible discrimination on these bases will be addressed with efficiency and energy and in accordance with VMI General Order 16. General Order 90 addresses complaints or reports of retaliation against those who have opposed practices prohibited by General Order 16, those who have filed complaints or reports of prohibited practices, and those who have testified or otherwise participated in enforcement of General Order 16. Questions regarding discrimination prohibited by Title IX of the Education Amendments of 1972, or other federal law, may be referred to the VMI Inspector General and Title IX Coordinator, 212 Carroll Hall, VMI, Lexington, VA 24450, (540) 464-7072. Any cadet or prospective cadet having questions about disability services for students should contact the Director of the Center for Cadet Counseling and Disability Services, 448 Institute Hill, 2nd floor, Post Infirmary, Lexington, Va. 24450, (540) 464-7667. For employment-related disability services, contact the Americans with Disabilities Act Coordinator in the VMI Human Resources Office, Lexington, VA 24450, (540) 464-7322.

The VMI COVID-19 information portal is available at www.vmi.edu/COVID.

'Zero Defects'

Jordan Ward Will Wear New Number in Spring Season

By Mary Price

In a year full of surprises, the NCAA added another earlier this year when it announced a rule change: football players would be able to wear the number "0" on their jerseys. The change was made because of the popularity of single-digit numbers and the confusion that can ensue when more than one player with the same number is on the field at the same time.

Immediately, the race was on to determine which player would wear the zero first—and head coach Scott Wachenheim knew what he wanted that number to represent: zero defects.

He also knew which player best represented that ideal—Jordan Ward '21, a defensive lineman who's a mechanical engineering major and a member of the Honor Court.

"Jordan has zero issues," said Wachenheim. "He plays hard every day at practice. He's an overachiever."

In 2019, during the Keydets' best football season since 2003, Ward led the team in tackles for a loss with 11 for 41 yards and saw the most plays of any Keydet defensive lineman with 773 total on the season. At the same time, Ward was racking up accomplishments in the classroom, and at the end of the season, he was named to the Southern Conference Academic Honor Roll.

"I'm the kind of person that if people are looking at you, I want to make sure I'm doing the right thing and leading the team and accomplishing what we need to accomplish," said Ward, whose future plans include graduate school.

"Being the first person [to wear the number zero] is pretty special," Ward commented. "It's a huge honor and a huge responsibility."

Now, of course, the football team is in watchful waiting mode, as they anticipate being able to play in the spring. It's a

situation no one could have anticipated at the close of the 2019 season, yet if playing football at VMI has taught Ward anything, it's that you put in the work now to reap the rewards later, even when the rewards feel far away.

"I've learned how to learn from my mistakes, trust the process, and to keep working at something that you want to see come to fruition," said Ward of his time on



Jordan Ward '21—Photo Courtesy of VMI Athletics.

the gridiron at VMI.

Ward noted that during his rat year, the team had a winless season. The next year, the Keydets notched a single victory. Last year, the team's 5-7 season record and fourth-place finish in the Southern Conference was a hallmark of how far they'd come.

"We're still not where we want to be, but you see the progress we've made to do what it takes to become a successful football team," Ward commented.

Like many of his teammates, Ward sees an advantage to a spring season.

"If anything, it gives us a few more months to train, a few more months to prepare," he stated. "We're going to use it to our advantage to get better, bigger, tougher, mentally sharper, and just get ready for our season." ❁

Socially Distanced Boxing

By Mary Price

The coronavirus pandemic has forced numerous adjustments to nearly all aspects of life in higher education—but perhaps the thorniest problems of all are found in the realm of contact sports, where sweaty participants are in close physical proximity.

At VMI, one of the biggest challenges was trying to find a safe and effective way to teach boxing, a longtime required course for all rats. And thanks to the efforts of Col. James “Jimmy”

Coale, professor of physical education, and his colleagues, rats enrolled in Physical Education 102, the required boxing course, are learning to box in a way that’s designed to minimize health risks while maximizing skill development.

Funding from the dean’s office has made COVID-safer boxing possible. Coale explained that the money allowed the department to purchase a variety of items, including eight stand-alone punching bags, 40 pairs of new gloves, a heated dryer for those gloves, a speaker system for the instructor, and more.

A visitor to Cormack Hall, where boxing classes are now held, would find each cadet in boxing classes assigned to a 10-foot square on the floor of what’s usually the NCAA



Col. Jimmy Coale, professor of physical education, uses a stick with a boxing glove attached to one end to demonstrate skills.—VMI Photo by Mary Price.

wrestling area. During the entirety of the class, cadets stay in their own numbered squares as they move, jab, and punch, unless they are released to go work out with one of the punching bags.

But before cadets even go to their squares, they must pick up their gloves, which are

of VMI’s boxing classes, has had to be eliminated due to the coronavirus. Instead, cadets will have their skill levels assessed via a video in which they demonstrate specific skills taught in the class.

Coale has taught boxing at VMI for an incredible 41 years, and his decades-long

assigned to them by number. At the end of each class, cadets sanitize their gloves and place them on the dryer so they’ll be ready for another cadet the next day.

Throughout the class, cadets are instructed to work on specific skills while Coale demonstrates from the front of the room. If he needs to work one on one with a cadet, Coale reaches for what he calls his “COVID stick”—a wooden pole with a boxing glove attached to it—and demonstrates from a safe distance.

Sparring, long a staple of VMI’s boxing classes, has had to be eliminated due to the coronavirus. Instead, cadets will have their skill levels assessed via a video in which they demonstrate specific skills taught in the class.

Coale has taught boxing at VMI for an incredible 41 years, and his decades-long

perspective allows some insights into the newly revamped class.

“We give up a little bit ... but we also gain some things,” he commented. “At the end of the day, they learn some more combination punches. Before, it was just the one and the two, and now it’s six punches that they’re learning. The movement part is much better, which is one of those foundational skills in boxing.”

As the semester has progressed, Coale has observed that cadets have more fluid, natural



Cadets stay within their assigned 10-foot squares during a boxing class in Cormack Hall.—VMI Photo by Mary Price.

Continued on next page

movement in his classes than they once did—likely because the no-contact nature has eliminated the fear of getting hurt.

That change has prompted a new thought for Coale, which he stresses is just an idea so far: perhaps VMI should teach boxing in its current, no-contact form so cadets can learn foundational skills, and then offer a sparring class as an elective.

“This gives you more time to learn the basics,” he commented.

But no matter what approach is taken to teaching the class, Coale is a believer in VMI’s boxing requirement.

“I think it’s important for [boxing] to be here,” he stated.

Coale recalled that when the late Dr. Clark King hired him in 1979, King stressed that with boxing, cadets must make themselves vulnerable to being hit in order to have any success.

“That coincides with the philosophy of VMI of taking risks, of putting yourself out there, getting out of your comfort zone,” said Coale. “I think boxing really fits nicely into that.” ❁

Quarantine Meal Prep

The coronavirus pandemic has brought logistical challenges to Parkhurst Dining, the food services company at VMI. Under the leadership of Lt. Col. Lee Clark '93, the team has been preparing hundreds of boxed meals each day to support cadets in quarantine and isolation, sometimes at five or more different locations. Dietary restrictions are taken into consideration during the packing, and identification tactics have been implemented to clearly note boxes that include vegan, gluten or dairy-free, and vegetarian meals. Often much of the meal is packed ahead of time, with beverages, salads, dressings, and baked goods added closer to delivery time. Hot portions of meals are boxed right before the meals are loaded onto the delivery truck. These efforts are in addition to standard meal prep and special boxed lunches for events like FTX. —Photos courtesy of Lt. Col. Lee Clark '93.



Self-Guided Tours Mark Jackson House Reopening

By Mary Price

The Stonewall Jackson House, closed for much of this year due to the coronavirus pandemic, reopened Thursday, Oct. 1, for self-guided tours.

The self-guided tours are supported by videos narrating each room of the house open to the public. Visitors pick up a map of the house and use their smartphones to

scan a QR code for each room as they enter it. Scanning the codes provides the visitor access to exclusive in-house video content, offering insight into the history of the house and its inhabitants. There are also videos for the garden in the rear of the house.

The staff created the self-guided tours as a way to open the 19th century house to visitors

while keeping both those visitors and the Jackson House’s group of dedicated volunteers safe during the public health emergency.

There’s an additional benefit to self-guided tours as well: visitors can take as much or as little time as they’d like to tour the house. This is particularly important for visitors with limited time, said Maj. Grace Abele, site director, and/or those accompanied by small children. Volunteer staff will be present

throughout the house to assist visitors and answer questions.

The Jackson House’s new visitor center and gift shop, plus the garden, have been open since July free of charge. The visitor center, housed in the Davidson-Tucker House adjacent to the Jackson House, is now home to 60 artifacts never before seen by the public, including a 19th-century hand-made quilt, the wedding ring that Thomas Jackson gave his first wife, Ellie, and information about the enslaved people who lived in the house with the Jacksons and shared their lives.

Admission to the Jackson House is \$10 for adults and \$7 for children ages 6–17. Children 5 and under are admitted free of charge, as are VMI alumni and their accompanying spouses, as well as VMI cadets, their families, and faculty and staff.

The Stonewall Jackson House is open Thursdays through Mondays from 9 a.m. to 5 p.m. through the rest of this year. The house is closed on Tuesdays and Wednesdays. ❁



Visitors progress through a self-guided tour at the Stonewall Jackson House in early October. —Photo courtesy of Maj. Grace Abele.

Williams Focuses on Relationships in All Roles

By Mary Price

Col. James “Jay” Williams Jr. ’83 is a busy man, with meetings and phone calls filling his days. As VMI’s emergency management coordinator, he’s got the big-picture view of everything that’s happening on post, from helping to oversee the Institute’s COVID-19 response to anticipating a variety of threats, any one of which would necessitate setting up an emergency operations center (EOC).



Col. James L. “Jay” Williams Jr. ’83

And in January, Williams will take on another major role as he becomes chair of the board of Carilion Rockbridge Community Hospital, formerly Carilion Stonewall Jackson Hospital. He’s served on the board since 2016, when he became VMI’s representative after Brig. Gen. Robert “Bob” Green ’67 retired from the Institute and stepped down from the board.

“Wherever you go in this community, in the state, and in the world, emergency management is key in everything you do,” said Williams, who came to work at VMI in 2004 after a 21-year career in the U.S. Air Force.

When talking about being on this hospital board, he says it’s about, “having the knack at looking at the big picture, asking questions to understand if we do have things that are going to overlap and cause issues.”

But emergency management is a relatively new hat for Williams to be wearing. When he was first hired at VMI, his job title was post engineer—a seamless fit, since he’d graduated from VMI with a civil engineering degree and had served as a civil engineer in the Air Force. As post engineer, he oversaw Buildings & Grounds, now Physical Plant, before moving into a position overseeing energy and sustainability, as well as fire safety in early 2015.

In 2018, Williams took on his current position. It’s a role of constant listening and coordination, both internally and externally, as Williams strives to keep the Institute’s senior leadership advised of potential threats and problems, while also making sure local emergency management officials are apprised of current conditions at VMI.

“It’s a two-way communication line,” said Williams of his job responsibilities.

As with anything else in life, there are problems that can be anticipated and others that cannot. Williams, of course, must be ready for both via the deployment of EOCs.

Some are set up in response to anticipated threats, such as when rumors of a potential rally reached post this summer,

while others are responses to events that no one could have foreseen, such as when a microburst in conjunction with a strong thunderstorm hit post in the summer of 2019 and uprooted several trees.

“We have not had a sustained EOC operation due to weather except for the microburst, when we pulled everybody together the day it happened,” Williams stated.

COVID-19, though, has changed Williams’ job responsibilities. Now, he informs the Central Shenandoah Health District about the number of coronavirus cases on post and keeps tabs with the hospital about the number of available beds. He’s a member of VMI’s COVID-19 Planning Committee, responsible for coordinating VMI’s reopening this fall and daily execution of the plan.

As part of that, Williams participated in a weekly regional emergency management call that had approximately 75 people attend. As the weeks went by, Williams began to realize that a smaller group of representatives from higher education, local government, and health officials was needed. A subcommittee was formed with the focus of higher education institution planning and keeping the local community informed.

“We brought it down to about 15 to 17 [people] and started really talking about our plans to reopen ... just having a conversation, a conduit for talking and asking questions,” he stated.

It helps, he commented, that the Rockbridge area is small enough for people to know each other outside of work, as church activities, youth sports involvement,

and trips to Walmart bring individuals together on a personal level.

It’s a way of living that the Williams family has come to embrace. Williams’ wife, Paige, teaches leadership and career development classes for non-commissioning cadets, and prior to that, she tutored VMI’s NCAA cadet-athletes.

The Williams’ children, meanwhile, are beginning to make their marks on the world. Son James L. “Trey” Williams III ’22 is the Hotel Company first sergeant and a member of the Triathlon Club, while daughter Merryn is an accomplished artist who recently received a bachelor’s degree in interior design from Virginia Tech. The youngest member of the Williams clan, Olivia, is a junior at Rockbridge County High School and a member of the Rockbridge Storm and high school swim teams.

Throughout their time here, Jay and Paige Williams have striven to give back to the community. In addition to his hospital board service, Jay Williams served as president of the Lexington-Rockbridge Chamber of Commerce in 2014–15 and coached in the local youth baseball and basketball programs from 2007–12. Paige Williams is on the board of the Rockbridge Christmas Baskets program, which this year will distribute more than 68,000 pounds of food and more than 1,300 toys to needy families this holiday season.

This kind of participation reaps benefits all around, Jay Williams believes.

“I think our community is very linked in,” he stated. “We have a good working relationship. We’re a community that wants to work together.”

Williams finds that same willingness to work together among members of the VMI community. In a way, it’s his job to draw people together for the greater good.

“The thing I enjoy most is being aware of what’s going on on a day-to-day basis,” he said. “I get the opportunity to work with cross-departmental representatives. I enjoy working with people from these departments and building relationships and processes that are going to help us. If we have to pull together in an emergency operations setting, we’ve already got those relationships built.” ❁

going to take the baton and do great things. ... Every generation has its heroes.”

Critical to doing great things, McConville stated, is the ability to create cohesive teams in which everyone feels that he or she belongs. “Treat everyone with dignity and respect. Make everyone feel that they are part of the team. ... The secret sauce of any organization is that the people care about each other,” he commented.

McConville pointed out that with such a climate, problems such as sexual harassment, suicide, and racism/extremism will be less likely to flourish.

“These are three things in the military that I’m going after,” he said. “They break trust, and they harm our soldiers.”

During his speech, McConville shared with cadets several vignettes from his combat tours, including one from when he was with the 1st Cavalry Division in Iraq in 2004. During that time, he recalled, he was flying an Apache helicopter when he was given authority to shoot at a white van whose occupants were allegedly shooting rockets at American soldiers.

McConville spied the van from the air, and began to follow it, but should he order his soldiers to shoot? McConville asked cadets what they would do in that situation—and then related what actually happened. He sped up, flying well ahead of the van so he could see where it was going. Eventually, it stopped, and a family got out.

“It’s a good thing we didn’t shoot,” said McConville. He added that this story illustrates a point he often makes when those in his chain of command say, “Well, I did the right thing.” To this, McConville often replies, “Yes, but did you do the right thing in the right way?”

The longtime officer also talked about how he views taking risks, an inevitable part of life in the military. A risk is only worth it, he commented, if the payoff is commensurate.

Cadet questions for McConville were numerous and wide-ranging. More than one cadet asked the chief of staff about managing mental health in a pandemic, and McConville echoed a theme he’d



Gen. James C. McConville receives a gift from the Corps of Cadets during his visit to VMI Sept. 30.—VMI Photo by H. Lockwood McLaughlin.



Adam Fodness '21 asks McConville a question during the Q&A portion of his talk.—VMI Photo by H. Lockwood McLaughlin.

mentioned during his remarks: that while COVID-19 doesn’t usually pose a grave threat to the physical health of young people, the social distancing aspect of managing the disease can be quite detrimental to their mental health.

Many mental health issues, McConville stated, stem from a sense of not belonging. “You have to look out for those people and take care of them,” he counseled. “Look out for each other. These are tough times.”

Another cadet asked McConville who he’d looked up to when he was a cadet at West Point, and in his reply, McConville didn’t mention any names. “The ones who touched me the most were the ones who could do it all—IQ and EQ,” he said.

There are plenty of smart people with a high IQ, but it’s often EQ, or emotional quotient, that makes the difference,

McConville emphasized.

Another questioner wanted McConville to identify the number one mistake made by junior officers. The chief of staff wasted no time in giving some advice—learn how to fail.

“Go fail right now,” he said. “Fail at something important to you.” McConville pointed out that while his Army biography looks stellar—he served as commanding general of the 101st Airborne Division (air assault) during Operation Enduring

Freedom, among many other assignments, and he’s a senior Army aviator qualified in numerous aircraft—there were also a lot of mistakes along the way.

After his remarks, McConville met privately with Gen. J.H. Binford Peay III '62, superintendent, and toured post before departing. It was the second time in three and a half years that the chief of staff of the Army had visited VMI, as Milley, who is now chairman of the Joint Chiefs of Staff, spoke in Cameron Hall in February 2017. ❁

New Chemistry Professor Uses Nature as Inspiration

By Mary Price

When she arrived on post this fall, just after completing a doctoral program at the University of Kansas, Maj. Kaitlyn “Kaitie” Cartwright wasted no time in pursuing two of her passions: taking inspiration from nature for chemical synthesis and helping undergraduates get going with hands-on research.

“We’re using nature for inspiration,” said Cartwright, assistant professor of chemistry. “Nature’s the best chemist there is.”

It’s a way of thinking and a line of research that are urgently needed. “Chemical production represents more than 25 percent of America’s gross domestic product [GDP], but many of the processes we utilize are seriously flawed as they are health hazards, environmental hazards, or are not sustainable,” Cartwright wrote in an email. “We have a lot of great chemicals that exist, but the ways we make them are very hazardous and unsustainable.”

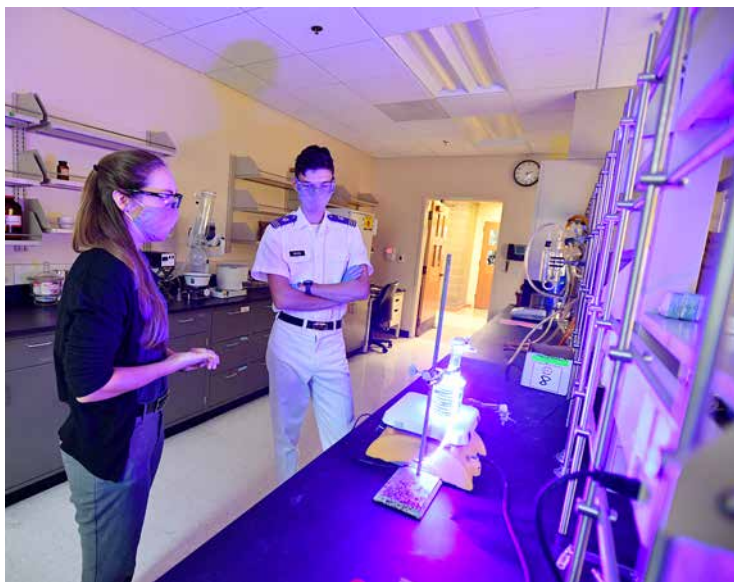
Cartwright cited petroleum production as one of those unsustainable methods. “We can’t continue to do chemistry the way we used to before,” she commented. “This is an exciting field to be in because there’s a lot of creativity.”

This year, Cartwright and Kellen Reeves ’21 are seeking to use mimics of vitamin B₁₂, a naturally occurring substance also known as methylcobalamin, for chemical synthesis.

“We hope to be able to exploit the chemical reactivity B₁₂ is known for toward the synthesis of valuable feedstock chemicals,” said Cartwright.

For Reeves, who hopes to study either environmental or physical chemistry in graduate school down the road, it’s a senior capstone project.

Reeves came to VMI as a chemistry major, surprising himself and his family in the process. He admitted to hating the AP chemistry



Maj. Kaitie Cartwright and Kellen Reeves '21 observe how cobaloxime-nitrogen complexes will react when activated by light.—VMI Photo by Kelly Nye.

course he took in high school—so much so that his mother questioned his decision to major in the subject.

“I don’t know what drew me to [being a chemistry major],” he said. “Maybe it was that I wanted to learn more and see if I could [like it],” he said. “I think I did so poorly that I wanted to see if I could improve myself in college.”

That sink-or-swim approach seems to have produced a successful swimmer. “It’s all brand-new chemistry, stuff I haven’t done before in previous labs,” said Reeves of his work in Cartwright’s lab.

One of the critical concepts in Cartwright and Reeves’s research thus far is the synthesis and understanding of various cobaloximes, which are models of B₁₂.



Kellen Reeves '21 flame dries a flask before performing a water-sensitive reaction.—VMI Photo by Kelly Nye.

“[Reeves] started by synthesizing cobaloximes with different halogen anions—chlorine, bromine, iodine—in the axial, or top, site of the complex and is now trying to see if these halogen anions can be exchanged with nitrogen anions, which he made by making the sodium salts of amines,” said Cartwright.

“Forming the cobalt-nitrogen bond in this way has not been done before, and the ability to do so will be an important part of the reaction we are trying to develop,” she continued.

When Reeves is done in the lab, it’s time for a test—

and the chemistry department’s nuclear magnetic resonance (NMR) spectrometer is what’s used to assess the structures of the synthesized cobaloxime complexes

The most rewarding part of Reeves’s research, he said, is “being able to run an NMR and see that I’ve actually made what I’m supposed to be making. It’s really cool to see that I actually did what I’m supposed to do.”

It’s that sense of achievement that propelled Cartwright to a career in chemistry. At Sweet Briar College, where she earned her undergraduate degree, she found a climate deeply supportive of undergraduate research, and as she applied for jobs this past spring, she looked for a school that shared that commitment.

“The research experience [at Sweet Briar] really led me to find what I was passionate about,” said Cartwright. “I wanted to work at an undergraduate institution that had that same kind of value in their research.”

Cartwright’s teaching responsibilities this fall include General Chemistry, a class that’s usually taken by rats, and Advanced Inorganic Synthesis, which is typically for 1st Class cadets. Seeing cadets at both ends of the age spectrum, Cartwright noted, is particularly rewarding, and she often tells rats about the research being conducted

Continued on next page

VMI Institute Report

by their 1st Class counterparts—“One day, maybe you could do this.”

By the end of the year, Cartwright and Reeves hope to have results that they could publish in a journal, with Reeves as the lead author. Cartwright is hopeful, of course, that many more cadets will come into her lab and leave it as better scientists.

“The goal is for [cadets] to come in here and use what they’ve learned in class and take a creative approach to solving our modern problems,” she said. 🌿



Kellen Reeves '21 holds one of his reactions toward the synthesis of a novel cobaloxime complex.—VMI Photo by Kelly Nye.



First Parade

Cadets march in the first parade of the 2020–21 academic year Saturday, Oct. 3. Masks remained on during the parade, with only members of Band Company allowed to remove them to play their instruments.—VMI Photos by H. Lockwood McLaughlin.



RDC Led 5-Mile March

Members of the Rat Disciplinary Committee lead rats in a 5-mile foot march around North Post Oct. 3. The march was designed to further acclimate rats to distance foot marches, preparing them for a 20-mile march by next semester.—VMI Photos by H. Lockwood McLaughlin.



Open Houses Continue with Modifications

By Mary Price

On Saturday, Oct. 3, VMI held the first of six planned admissions open houses for the fall semester. Each open house allows a total of 70 prospective cadets, accompanied by one adult companion, to visit post.

“We wanted to hold as many [open houses] in the fall,” said Col. Neil Whitmore '90, associate director of admissions. The spring, he noted, will be challenging for scheduling open houses because many fall sports were postponed to the spring at both the college and high school levels.

Before the coronavirus pandemic, open houses typically attracted anywhere from 140 to 150 high schoolers, all of whom were allowed to spend the night in barracks with cadets, eat in Crozet Hall, and generally get a flavor for life at the Institute.

A major fair, at which each academic department was represented, was a big part of open houses in past years, as were tours of laboratory facilities. Thanks to COVID-19, those experiences are not possible this year.

“Those are the things we really like to showcase,” said Whitmore.

This year, prospective cadets attend presentations in Marshall Hall, with socially distanced seating, and watch a parade by the Corps. Some take walking tours of post, but they are not allowed to



Cadets talk with prospective cadets and their parents during the Oct. 3 admissions open house.—
VMI Photo by H. Lockwood McLaughlin.

remarks from the superintendent, the dean, the commandant of cadets, and many others, plus a number of cadets in leadership positions.

It's that face-to-face time that's so valuable in the college admissions process. “We wanted to get [prospective cadets] on post so they could see cadets, and we could answer their questions,” said Whitmore. ✪



Cadets EMTs check in a prospective cadet during the first admissions open house Oct. 3.—VMI Photo by H. Lockwood McLaughlin.

go into any buildings other than Marshall Hall. During this COVID era, visitors' interaction with the Corps of Cadets is limited to being able to ask a panel of cadets questions.

Many colleges and universities aren't holding open houses at all right now, Whitmore noted—and perhaps for that reason, VMI's first three open houses filled almost immediately.

So far, Whitmore has gotten good feedback on the truncated program. “We hear from a lot of parents that VMI has the best open house program they've been to,” he commented. One strength is the fact that at VMI, unlike larger schools, each open house features

Virtual Career Fair

Representatives from Thompson and Litton talk to cadets during the first virtual Career Fair held Monday, Oct. 19. The event, which is sponsored by the Office of Career Services and traditionally held in Marshall Hall, was moved online this year due to the coronavirus pandemic. More than 50 employers attended the virtual fair, as did between 250 and 300 cadets. Industries represented included construction, banking, consumer products, law enforcement, and more. Cadets attending the fair set up profiles on Handshake, which is an online platform designed to help college students find internships and jobs, before booking sessions with individual employers. Alumni often play a large role in career fairs: historically, approximately 60 percent of employers send alumni to recruit at VMI's fairs.—Photo courtesy of Lt. Col. Ammad Sheikh.



DoD Grant Brings Cyber Defense Laboratory to Post

By Mary Price

In mid-September, VMI's Department of Computer and Information Sciences (CIS) took a major step toward a new initiative when Institute leaders signed an agreement for a grant award with the Department of Defense (DoD) to establish a cyber defense laboratory on post.

The agreement, which will bring \$1.45 million to VMI in the first year of funding, establishes VMI as a participant in the DoD Senior Military Colleges (SMC) Cyber Leadership Development Program.

"The main goal of this effort is the creation and execution of an integrated SMC DoD Cyber Institutes program composed of individual cyber institutes and centers at each of the six senior military colleges working jointly to meet the talent and workforce needs of the DoD Cyber Mission Force," said Col. Mohamed Eltoweissy, head of CIS and the grant's principal investigator. In addition to VMI, the senior military colleges are the Citadel, Virginia Tech, the University of North Georgia, Norwich University, and Texas A&M.

Eltoweissy explained that "this initiative will complement and strengthen VMI's cybersecurity capacity, expand existing cybersecurity laboratory infrastructure, further innovation in cybersecurity education and research, and advance the multi-disciplinary cybersecurity minor, which was established in the fall of 2017."

To that end, VMI's grant from the DoD involves not only the CIS, but also the Department of Electrical and Computer Engineering, the Department of International Studies and Political Science, and the Center for Leadership and Ethics. Col. Eltoweissy indicated that other departments on post will be integral to the effort to cover the different facets of cybersecurity and better prepare cadets for DoD Cyber Mission Force work roles, including data scientists, reverse engineers, vulnerability researchers, and information research integrators in cyber operations.

As part of this grant, VMI will establish its cyber defense laboratory in the spring of 2021. The lab comprises two interrelated programs: the leadership-integrated competency development program and the immersive and experiential learning program. The vision is to provide premier cybersecurity leadership education, increasing the number of the next generation of leaders capable and ready to protect our nation from existing and emerging cybersecurity challenges. A priority for the lab will be to boost the representation of underrepresented groups in the cybersecurity workforce.



Mallory Hall, home to VMI's Department of Computer and Information Sciences, will soon house VMI's cyber defense lab. —VMI Photo by Kelly Nye.

Right now, the department head noted, there's an effort underway to revamp some courses and add others in preparation for establishing the lab. Proposed courses include CIS 370, Leading Ethically in the Virtual World, and EE 417, Reverse Engineering. Another major area of focus will be experiential learning via internships and projects.

"We want to better respond to career requirements and skill sets," said Eltoweissy. As the lab is created, so will be a new AI-enabled

educational software and hardware platform that links professional careers to educational modules for immersive experiential learning, to be designed and built by VMI faculty, staff, and cadets with collaboration from the SMCs.

But VMI's cyber initiative isn't just about software and hardware, ransomware and malware. Not surprisingly, it's also about preparing the next generation of cyber leaders.

"VMI is a premier leadership school," Eltoweissy commented. "We want to develop cyber leaders."

With this goal in mind, there will be unique leadership and learning opportunities for selected cadets. Plans call for 15 rising 2nd Class cadets to be selected as "cyber captains" each academic year. These cadets will receive DoD Cyber Captains Scholarships.

All of those selected will be required to enroll in the cybersecurity minor, complete an internship, actively participate in the Cyber Club, and receive a designated professional certification. These cadets will also serve as teaching and technical assistants to help faculty, staff, and cadets with cybersecurity issues.

Outreach to the community and attempts to diversify the future pool of cybersecurity workers will be critical components of the program as well. Summer camps for students in grades 8–12 will be offered, along with a residential camp for girls only.

The cyber defense laboratory will also allow VMI to foster deeper relationships with its fellow SMCs. Eltoweissy foresees much collaboration among the schools, including having guest speakers at one school broadcast to all of the others, and cybersecurity competitions with the other SMCs and service academies. Joint experiments and projects in education and research are also among the possibilities.

"We hope that the whole will be greater than the sum of the individual institutions," said Eltoweissy. "We think this is a first step towards more collaboration among the SMCs." ❁

Maj. Suzanne Rubenstein, director of activities for the commandant's office, Hoyer and her helpers created packages for approximately 1,690 cadets—and then added 100 more just in case anyone was overlooked.

“With the cadets confined to post, and the parents unable to visit, we wanted a way to show them a little love and let them know they’re thought about,” said Angie Shay, mother of Ainsley Fritter '23. “This was a way to get packages to every single rat or cadet so they felt loved and looked after.”

But first, the items in the packages, ranging from hot chocolate mix and candy to beef jerky and other prepackaged snacks, had to be purchased. The women spearheading the effort, who'd dubbed themselves the Crazy VMI Moms, set a goal of raising \$34,000, which was based on a cost estimate of \$20 per cadet. They set up a Facebook page, the VMI Pandemic Package Corps—and within a few weeks, they'd not only met their fundraising goal but exceeded it.

“We overshot what we needed,” said Maria Wiemann, mother of Lance Wiemann '22. “We were able to buy more than we'd planned.”

On Friday, Oct. 2, Wiemann flew from her Dallas, Texas, home to Baltimore, Maryland, and caught a ride with a friend to VMI. The



Mothers of cadets unload fruit snacks and other treats for care packages outside the Corps Physical Training Facility Oct. 3.—VMI Photo by H. Lockwood McLaughlin.

next morning, they traveled to the Corps Physical Training Facility parking garage to pack individual bags for each cadet. Cadets with food allergies received packages tailored specifically to them, and all cadets received a note of encouragement.

Via the Facebook group, Hoyer, Wiemann, and others had reached out to parents of cadets, encouraging them to either email or snail mail personal notes to their cadets, to be included in the care packages. The Crazy VMI Moms made sure that no cadet was left out.

By the time the packages were filled, labeled, sorted into boxes by room number, and delivered to Lejeune Hall, it was 9 p.m. Saturday. Delivery took place Sunday, Oct. 4, and carried over to Monday, Oct. 5. It would have been a big undertaking if all

cadets had been in barracks, but it was made doubly hard by the fact that some cadets were in isolation due to a positive COVID-19 diagnosis and others were in quarantine due to close contact with those who tested positive. Assisting with the deliveries were Rubenstein and members of the cadet S7 staff, who are in charge of morale, welfare, and recreation.

“It was kind of like chasing a moving target,” said Wiemann of the package delivery process. “We had to take the attitude, ‘Okay, roll with it. You have to roll with it and get it done.’”

Included in each package was a raffle ticket. The raffle tickets, Wiemann explained, are put into a hopper and one ticket is drawn at Taps each evening. The winner gets a gift certificate from a local business for a treat such as a pizza or milkshake and delivery to barracks is included.

“We wanted to keep the fun going,” explained Wiemann. “Keep it super easy and keep the fun.”

Hoyer, the woman who'd had the care package idea in the first place, said that the cancellation of Parents Weekend had caused her to think outside the box.

“A lot of things got canceled for these [cadets], particularly for the rats,” she commented. “We want to keep the spirit of VMI going.” ❁



Parents and members of the cadet S7 staff unload care packages outside barracks.—VMI Photo by H. Lockwood McLaughlin.



Boxes of snacks await packing in the parking garage of the Corps Physical Training Facility.—VMI Photo by H. Lockwood McLaughlin.

Fresh Approaches Mark ERHS Classes

By Maj. Michelle Iten and Mary Price

Cadets' worlds may be smaller this semester as they stay on post and in their rooms, but faculty in the Department of English, Rhetoric, and Humanistic Studies are tapping into the power of connecting across time and place to energize cadets' learning.

Cadets in ERH 204, Language of Art, can't go to the Marshall Museum as in previous semesters to learn how museum layout and curatorial choices guide visitors' experiences of art. Instead, Maj. Catharine Ingersoll, assistant professor of art history, is bringing museums to cadets by using Google Arts & Culture's virtual museum tours, which she describes as "like Google Street View, but inside museums."

"In the second half of the semester, the course focuses on understanding how artworks operate within their cultural contexts—nowadays, most historically significant artworks are located in museums," said Ingersoll. "New technology enables us to 'visit' these sites to learn about the requirements of museum architecture and how curatorial decisions (such as the placement of artworks within an exhibition space) can affect viewer experience."

Using the Google Arts & Culture website, cadets will virtually explore the British Museum in London, the Alte Nationalgalerie in Berlin, and the Solomon R. Guggenheim Museum in New York City. They also used the Google Arts & Culture virtual reality app to take a socially-distanced walk through the Chauvet Caves in southern France from the safety of the Parade Ground.

Cadets in ERH 321WX, British Romanticism, taught by Maj. Mary "Polly" Atwell, assistant professor of English, are connecting to nature and poetry with occasional outdoor meetings on the Parade Ground near Mallory Hall or on the lawn of the Turman House.

It's a way of helping cadets connect to the subject matter, since nature was an inspiration for many Romantic poets. It's also a way of helping cadets deepen their understanding of pre-20th century poetry, which can be off-putting to modern ears.

"In the classroom, I'm always looking for ways to get around this, and one way I've found is to take cadets outside," said Atwell.

"We know that some Romantic writers, including Keats and Wordsworth, composed poetry in nature, so it feels appropriate to enjoy their work in a natural setting," she continued. "We've read a variety of lyric poems in this way, concentrating on those that relate to the current season, including Keats's "To Autumn" and Shelley's "Ode to the West Wind."

Cadets in ERH 101, Writing and Rhetoric I, taught by Maj. Stephanie Hodde, assistant professor of English, are getting the chance to connect with people in their past by composing letters home to teachers, family, and friends who have influenced their



Maj. Catharine Ingersoll shows Jackson Mercer '22 how to use the Google Arts and Culture's application on the Parade Ground Oct. 21.—VMI Photo by Kelly Nye.

growth in reading and writing. Hodde notes that "cadets who responded to this extra-credit assignment seemed to enjoy the knowledge that their 'snail mail' letters would be traveling off post to reach people important to them."

Hodde said that she chose to focus on how individuals develop

habits of communication in a time of containment and isolation. "I have yet to hear whether they've seen responses to their letters, but I do know this snail mail allowed them to reconsider how they've accessed certain learning privileges," she stated.

In ERH 411, Fieldwork: the Rockbridge Memoir Project, cadets

are chatting away once a week with community writers as their Zoom pen pals. Hodde says that many cadets "have been pleasantly surprised to find what good practice it is to socialize with an older generation that is not their grandparents."

Now in its third year, the Rockbridge Memoir Project pairs cadets with older adults in the local community who are interested in writing their memoirs. "In class reflections on our discussion boards, my students remark how insightful their pen pals can be about the long view of memory, allowing them to be more intuitive about both the past and the present," Hodde stated. ❀



Maj. Polly Atwell talks with cadets in her British Romanticism class during an outdoor meeting.—VMI Photo by Kelly Nye.

Astronauts, Kangaroos—and the Pony Express?

VMI Archives Has Unexpected Finds

By Mary Price

With items in its collection ranging from photographs taken in the mid-19th century to an account of the construction of the Panama Canal and even letters by two founding fathers of the United States, one of them a U.S. president, the VMI Archives offers a treasure trove of history spread out over four centuries.

As part of American Archives Month, observed annually in October, VMI featured some interesting and unusual items in the Archives collection in its social media posts as a way of highlighting both the breadth and depth of the collection, much of which is available online. After all, who'd have guessed that although VMI didn't begin operations until 1839, there's a letter written by Revolutionary War hero Maj. Gen. Henry Lee III, better known as "Light Horse Harry" Lee, in 1779?

Other surprises in the Archives collection include letters from the nation's third president, Thomas Jefferson, to Claudius Crozet, a member of VMI's first Board of Visitors, about the founding of the University of Virginia. There are letters and photographs from alumni who served in all of our nation's wars from the Mexican-American War to the war on terrorism, plus photographs of cadets, alumni, and visitors to post over the years.

Some are household names, such as the legendary astronaut John Glenn, the first American to orbit the Earth and later the oldest person in space, who spoke at the Institute's graduation ceremony in 1965. Others are less well-known but played an instrumental role in their day—for example, there's Benjamin Ficklin, VMI Class of 1849, who was one of the founders of the Pony Express.

Currently, the Archives' home on the 4th floor of Preston Library is still under construction as the library undergoes its first renovation in nearly 25 years. Sometime this month, the Archives is



Astronaut John Glenn spoke at commencement for the Class of 1965.—
Photo courtesy of VMI Archives.



Benjamin Ficklin, VMI Class of 1849, was one of the co-founders of the Pony Express.—Photo courtesy of VMI Archives.

expected to reopen to the VMI community with a space that's approximately 30 percent larger and also closer to the elevator, which will be helpful for visitors with mobility issues.

"It's improved," said Maj. Jeff Kozak, head of archives and records management, in discussing the Archives' new space. "When you came into the Archives before, there was one long table. Now, there's three separate tables."

Kozak said that having more space will be helpful because he encourages professors to bring their classes to the Archives to do research. An expanded square footage is also needed because with each year that passes, the volume of cadet records stored in the Archives grows.

"Every year, we're getting from the registrar's office new records, cadet records that come over," said Kozak. "There's a 20-year lag on that, so this year we'll get the Class of 2000's."

VMI has records for all cadets who've ever attended the Institute, but to comply with federal privacy laws, there's an 80-year moratorium on viewing them, unless there's proof that the alumnus or alumna

has died. The 80-year clock starts running upon graduation.

"Those historic files—there's a lot of interest in those from a genealogical standpoint," Kozak commented.

And while it might be easy to think that the Archives is a dry, stuffy place for serious researchers only, Kozak was quick to dispel that notion by saying that a few years ago, a Summer Transition Program (STP) class came to the Archives to learn how VMI had wound up with the kangaroo as its mascot.

"Typically, there's this perception that Archives has to be very serious and formal," said Kozak. "You are studying big, scholarly things. But really, anyone who's curious about VMI and its history—the Archives is there, and we work to make that information accessible and work with people." 🦘



Fall FTX

ROTC cadets participate in Field Training Exercises—FTX—Oct. 8–11. Army ROTC utilized McKethan Park; Air Force trained in the Corps Physical Training Facility; and Naval used the Clark King Pool, as well as other areas on post due to pandemic restrictions.—VMI Photos by H. Lockwood McLaughlin and Kelly Nye.





Virginia Military Institute
Communications & Marketing Office
Lexington, VA 24450-0304

Nonprofit Org
US Postage
PAID
Waynesboro, VA
Permit 129

Fall Semester Updates

Due to the coronavirus pandemic, Institute officials have made several changes to the calendar for the remainder of the fall and the beginning of the spring semester. Cadets will be furloughed from post beginning Friday, Nov. 20, to complete the remainder of the semester online.

Barracks and cadet support services will remain open through the end of the fall semester for those cadets who have extenuating circumstances such as a family member at home who is at risk or those with internet connectivity issues. International cadets and designated cadet-athletes will stay in barracks through the end of the fall semester.

Ring Figure festivities for the Class of 2022 will occur Friday, Nov. 20, and Saturday, Nov. 21. December commencement will be held Saturday, Dec. 19, in Cameron Hall.

Cadets will return to post for the spring semester Jan. 17–18 to begin academic classes on Jan. 21, 2021.

Additional information regarding cadet departure, the Class of 2022 Ring Figure, December commencement, cadet return, and support services for all of these events and activities, as well as details regarding refunds for fall room, board, and fees will be available at vmi.edu/fall-2020. ❄️



Cadets walk to class while wearing masks earlier this fall.—VMI Photo by Kelly Nye.

Connect with VMI

 facebook.com/vmi1839

 [@vmi1839](https://twitter.com/vmi1839)

 [@virginia_military_institute](https://instagram.com/virginia_military_institute)

 vminews.tumblr.com

Additional photos and videos can be found on Flickr and YouTube.