



INSTITUTE REPORT

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Matriculation

Rats line the inside of New Barracks as cadre marches in to meet them on Matriculation Day. More than 500 new cadets began the Rat Line on Aug. 18. Read more about the incoming class and cadre on page 8.—VMI Photo by H. Lockwood McLaughlin.

Army Travel Abroad Brings Cultural, Language Benefits

By Mary Price

Six Army ROTC cadets had the chance to experience both military training and civilian life overseas this summer through participation in the Army's Cultural Understanding and Language Proficiency program.

CULP, as the program is usually known, allows future officers to spend up to three weeks in a foreign country, immersing

themselves in the culture and language there. During the program, cadets train alongside members of the host nation's military and participate in humanitarian service missions.

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Header photo on page 1 by Kelly Nye

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Army *continued from page 1*

This summer, approximately 960 Army ROTC cadets from across the country traveled to 26 foreign countries under the auspices of CULP. This year, VMI's cadet participants toured three continents: South America, Europe, and Africa. While overseas, they were placed into units alongside cadets from other Army ROTC units nationwide.

Ryan Edsall '19, who hopes to serve as a military intelligence officer, traveled overseas for the first time in his life and spent a jam-packed June in Estonia.

"As a unit, we helped Russian students with their English language skills, performed humanitarian work for a village of mentally disabled people, competed in a biathlon against the Estonian cadets, worked their 100th anniversary parade, and even kayaked down a treacherous river," Edsall wrote in an email.

But it wasn't all work and service. "In our free time we played an unreal amount of card games and entertained ourselves with exploring the various locations," Edsall continued. "We even played a round of volleyball when the opportunity presented itself."

Edsall discovered that there wasn't a language barrier, as most Estonians speak English, in addition to Estonian and Russian. But there was a cultural barrier—one that Edsall believes is the result of decades of Soviet occupation.

"The people were so reserved and kept to themselves almost entirely," he wrote. "I noticed this most when walking through their malls and thinking to myself that I could hear a pin drop—as opposed to our jovial and rowdy American shopping centers."

While Edsall was in Estonia, Charles Paladanti '20 was half a world away in South America, where he and others trained alongside future Peruvian army officers at the *Escuela Militar de Chorrillos* (EMCH) in



Ryan Edsall '19, lower right, poses with other Army ROTC cadets in Estonia.—
Photo courtesy of Ryan Edsall '19.

Lima, Peru. The visiting cadets arrived just in time for the Peruvian cadet Olympics.

"This is an end of the school year event in which each class competes against the other in soccer, volleyball, and swimming events," wrote Paladanti, who plans to commission in the infantry. "When we weren't cheering for their teams, we were either playing sports ourselves or learning how they run barracks."

Next, it was time for field training exercises—but in a very different venue than Virginia. "After being bused to the desert, we completed a five-mile ruck, then we set up our tents for the night," Paladanti wrote. "The next morning was spent at the range. We were given a class on the Galil rifle; then we were each given ten rounds to shoot."

Later in the trip, the cadets completed a 150-meter open water swim and jumped off a 35-foot tower in full harness. For recreation, Paladanti and the others stayed active. "We spent a lot of time playing sports during this week; we even taught some Peruvians how to play American football," Paladanti commented.

For Paladanti, the month-long experience was a lesson in just how differently a foreign military can operate. "Only officers train cadets, and they do it in a very coercive way," Paladanti wrote.

The Peruvian cadets, meanwhile, were eager to learn from the Americans.

"The Peruvians always wanted to hear us sing American cadences on military

grounds,” said Paladanti. “So we took pride in the way we marched, sang, and how our uniform appeared.”

Like Edsall, Paladanti was traveling overseas for the first time—and grateful for the experience.

“This experience has showed me the value of leading others the right way,” he noted. “... After this experience, I don’t think I’ll be as surprised when observing how other militaries operate.”

Across the Atlantic, Emmanuel Ocampo '19 was experiencing life in a country that few cadets have likely visited: Mozambique. Like Edsall and Paladanti, Ocampo spent his time training with members of the host nation’s military and performing humanitarian work.

While at Mozambique’s training academy for non-commissioned officers, Ocampo found some real differences between American military bases and those in his host nation.

“They make the most value of what they have,” Ocampo noted. “We have the luxury of indoor facilities and stuff like that, where they train out in the sun all day.”

Ocampo also found something that might not be found on an American military installation: a garden. “Vegetables and fruits come from a garden they grow themselves,” said Ocampo. “We actually got to plant onions.”

Another difference was that in Mozambique, separate clothes for exercise didn’t exist. “They didn’t have a full [physical training] uniform so they would work out in their full duty gear,” he continued.



Army ROTC cadets from across the country—including VMI’s Charles Paladanti '20—pose with Peruvian army officers in Peru this summer. —Photo courtesy of Charles Paladanti '20.

The Mozambique officer candidates, though, weren’t held back by what Americans might consider a lack of resources. “They were very professional and organized,” Ocampo commented.

On the humanitarian side, Ocampo spent June 9, which was International Children’s Day, working with school children in the capital city of Maputo.

Ocampo did encounter a language barrier, as most people in Mozambique

speak Portuguese. He knew some Portuguese before he traveled abroad, thanks to YouTube videos, but once there, he found that heavy accents made native speakers hard to understand.

Thankfully, he does know Spanish, and the two languages from the Iberian Peninsula share much in common. “There’s a lot of overlap [between Spanish and Portuguese],” Ocampo said.

Ocampo said the experience would definitely make him a better Army officer.

“If we’re going to conflicts abroad ... going to different cultures will help you understand how things work over there,” he commented.

In addition to Edsall, Paladanti, and Ocampo, other cadets traveling abroad with CULP this summer were Bryce Holden '19, who traveled to Uganda; Anah Bozentka '20, Morocco; and Nicholas Wainwright '20, Morocco. ❁

TAPS—Gen. Griffith, Former BOV Member

Retired Army Gen. Ronald H. Griffith, a former member of the Board of Visitors, died July 18.

A native of Lafayette, Georgia, and a graduate of the University of Georgia, he served on the VMI Board of Visitors for two four-year terms from 2004 to 2012.

“When discussing key issues to come before the Board, the President and the Superintendent frequently called upon General Griffith for his wisdom and most often the sage advice he imparted was of particular relevance in seeking resolution,”



Gen. Ronald H. Griffith

said a resolution presented to Gen. Griffith on his retirement from the board. “He was a proponent of VMI seeking ways to ensure more intercollegiate athletes have commissioning opportunities as he stressed the correlation of leadership and characteristics needed to succeed as an athlete to those of military officers.”

Gen. Griffith rose from the rank of private to four-star general during a 37-year career in the U.S. Army that included commanding the 1st Armored Division in Operation Desert Storm and culminating with the position of vice chief of staff. After his military career he served as executive vice president of MPRI and the L-3 Communications Services Group. ❁

Cadet Field Work Explores Quality of Life

By Mary Price

There's an old saying that two things in life are inevitable: death and taxes. But while people complain plentifully about taxes, death is often such a taboo subject that it's scarcely mentioned, and few people contemplate just how old they'd like to live to be.

Seeking to understand more about what makes for a fulfilling life, and how satisfaction and meaning in life influence an individual's ideal age of death, Caroline Wojtas '19 spent her summer surveying homeless men in Louisville, Kentucky, on that subject. Her study was conducted under the auspices of the Summer Undergraduate Research Institute.

Wojtas found her calling to work with the homeless last summer, when she was an intern at Family Health Centers, a Louisville organization that provides health care for the homeless. Her internship was through the Shepherd Higher Education Consortium on Poverty, which is based at neighboring Washington & Lee University.

This summer, Wojtas is a paid employee at Family Health Centers—and because she'd already made contacts in Louisville, she was able to secure permission to survey individuals at St. John Center for Homeless Men, a day center where the homeless can shower, do laundry, and relax.

Wojtas discovered her subject matter—the ideal age of death—when she was taking a developmental psychology class taught by Maj. Sara Whipple, assistant professor of psychology. In the class, Whipple asks cadets to consider how long they'd like to live, with the goal of getting them to think about quality of life, not just quantity.

“[Asking about ideal age of death] makes some people uncomfortable,” Wojtas commented. “Some people can give you a flat-out answer right then and there ... It's a very interesting factor to study.”

Over the course of two Saturdays, Wojtas surveyed and collected demographic information on 40 men. Approximately 45 percent

were white, 45 percent were African-American, and the rest were of other ethnicities. Their average age was 51, and more than half had been homeless for over three years.

In exchange for their participation in the study, the men were offered \$5 gift cards to a fast food restaurant.

To participate, each man filled out the demographic information sheet, and two standard psychological assessments: the meaning in life questionnaire and the satisfaction with life scale. Lastly, the men were asked at what age they'd be comfortable dying.

“We wanted to study the interaction between meaning in life and satisfaction with life on ideal age of death,” Wojtas explained.

The cadet researcher obtained some surprising results. She'd hypothesized that the group seeking to live the longest would be those with the highest presence of meaning and highest satisfaction with life, but the results disproved that hypothesis.

“The group that had the oldest ideal age of death was the group that had high life satisfaction but low presence of meaning in their life,” Wojtas stated. Members of that group wanted to live to be 90.

Wojtas and Whipple, who supervised Wojtas's research, don't really know why the combination of high life satisfaction and low presence of meaning produced people who wanted to live the longest. They speculated, though, that those who haven't found meaning yet are still seeking it—and thus want more time.

Both Wojtas and Whipple found the project to be a learning experience. Wojtas had signed up for SURI simply because it seemed like a good thing to do the summer before her 1st Class year. “I want to get all that VMI has to offer,” she commented.

In the end, Wojtas was glad she'd made that decision, because she learned something valuable about herself.

“I thought I wouldn't like to do research ... but I actually really do like researching and putting in data and doing literature reviews,” said Wojtas. Now, she's planning to continue her work as an independent study in the spring semester, seeking a wider pool of study subjects so she can compare results between one study group and another.

In the long run, Wojtas hopes to work with the homeless in a professional capacity, either as a clinical psychologist or a licensed clinical social worker.

Whipple, while well versed in supervising SURI projects, found Wojtas's research especially interesting because of the demographic group targeted. “It's not often that you have someone on the inside like that who has access to the homeless population,” Whipple commented. “It was an amazing opportunity for her and me both.”

Whipple also said that Wojtas's project had made her eager to explore qualitative as opposed to quantitative research.

“It makes you want to sit down and talk to these people and get their narratives and learn more about what is your meaning, do you have a sense of social support,” Whipple said. “It makes me more curious about the qualitative aspects of research, which I personally haven't done a lot with.” ❁



Caroline Wojtas '19 reviews the findings of her SURI project with Maj. Sara Whipple.—VMI
Photo by Kelly Nye.

Promotions, Installation Mark Beginning of Year

By Mary Price

At the general faculty meeting kicking off the new academic year, Gen. J.H. Binford Peay III '62, Institute superintendent, announced the promotions of two long-time faculty and staff members and the installation of a new sergeant major.

Promoted to brigadier general, effective Aug. 21, were Robert "Bob" Moreschi, former head of the Department of Economics and Business and now deputy superintendent for academics and dean of the faculty, and Dallas Clark '99, director of finance, administration, and support.

Introducing Moreschi, who joined the economics and business faculty in 2002 and became department head in 2013, Peay commented, "We are thrilled with [his] selection as the 11th deputy superintendent for academics and dean of the faculty. ... I think we're very fortunate to have just the right gentleman to lead our academic team in the years ahead."

During his 16 years in Lexington, Moreschi has undertaken many leadership roles both on and off post. Not only has he served as the John and Jane Roberts Institute professor in free enterprise business, but he has also been faculty representative to the VMI Foundation board of trustees and adviser to the Cadet Investment Group.

His community activities include serving as a member of the audit and oversight committee of Kendal at Lexington and as treasurer of Lexington Presbyterian Church. He is a ruling elder of Lexington Presbyterian Church, was a board member of the United Way of Lexington/Rockbridge, and a long-time member of the Lexington Kiwanis Club.

In his remarks following the ceremonial pinning on of insignia, Moreschi stressed the necessity of teamwork to keep the Institute moving forward.

"I have the enviable task of leading an academic enterprise that has been transformed in the past 15 plus years into one of national and international renown," he commented. "Of course, our work is never done and we must strive to continuously improve. To do that, our energetic and creative faculty must work together, always keeping our focus on the Institute and our cadets."

Clark is one of five brothers, all of whom matriculated to the Institute from their Salt Lake City, Utah, home, and all of whom went on to graduate from VMI. After earning a degree in economics and



Gen. J.H. Binford Peay III '62 introduces Brig. Gen. Bob Moreschi, Brig. Gen. Dallas Clark '99 and Sgt. Maj. William Sowers during the promotion and assumption of duties ceremony in Gillis Theater, Aug. 21.—VMI Photo by H. Lockwood McLaughlin.

business, Clark earned a master's degree from Virginia Commonwealth University and shortly thereafter came to work for the VMI Alumni Association, where he oversaw new cadet recruiting, chapter promotions, and alumni placement.

In 2006, Clark became Institute planning officer. In that role, he was responsible for strategic planning, the post facilities master plan, and emergency preparedness. After a brief stint at Southern Virginia University as vice president and chief advancement officer, he returned to VMI in February 2017 in his current role, which includes oversight of a wide variety of post operations ranging from the treasurer's office to the VMI Museum System to the post hospital to government relations.

"All of us who have known [Clark] over these many years have such respect for his

style, his maturity, his intelligence, and always [his] approach to teamwork," Peay commented. "We're in good hands with this officer leading a very large, important, and sophisticated operation."

For his part, Clark gave credit to the Institute. "I feel, in so many respects, like I am a son of the Institute, having spent the vast majority of my career here," he noted. "I am the [beneficiary] of the education that you as the faculty gave to me. ... I'm very grateful for the education that I received here at the Institute."

The general faculty meeting was also the occasion of the assumption of responsibility ceremony and passing of the colors to William T. Sowers, sergeant major to the Institute and the Corps of Cadets. Sowers, a 30-year veteran of the Marine Corps who retired from that branch of the service in June, fills the position formerly occupied by John Neel.

Sowers' last posting before retirement was as 1st Marine Division sergeant major at Camp Pendleton, California. During his career, he served five combat tours: one in Operation Desert Shield/Desert Storm, one in Operation Iraqi Freedom, and three in Operation Enduring Freedom.

"In some ways, he is coming home," said Peay of Sowers, who was born in Martinsville, Virginia, and graduated from Patrick County High School.

"We could not be more honored, proud, and excited to have Sgt. Maj. Sowers serve VMI in this terribly important position as Institute sergeant major and sergeant major to the Corps of Cadets," said Peay.

Sowers likewise expressed appreciation for his new role and those he would be working alongside.

"I'm honored and privileged to be part of this prestigious Institute," he said. "I truly look forward to working with each and every one of you as we prepare and develop these young men and women into educated, physically fit, self-disciplined, honorable leaders for the future of our great nation." ❀



Matriculation Week

The first week of the Rat Line includes physical challenges like the House Mountain hike, but it is also a full immersion introduction to VMI. The rats studied their rat bibles, learning about the history and traditions of VMI. They also toured the Marshall Museum for a more in-depth lesson on one of VMI's most influential alumni, George C. Marshall, class of 1901.—VMI Photos by Maj. John Robertson IV and H. Lockwood McLaughlin.

Cadet Project Evaluates CPTF Green Infrastructure

By Mary Price

In terms of footprint, the Corps Physical Training Facility is easily the largest building on VMI's post, dominating the skyline at the intersection of Main and Diamond streets. The 108,000-square-foot building, though, was designed to make as small of an environmental impact as possible, with features such as a green roof and bioretention basins that aim to treat storm water runoff before it reaches the Maury River and, eventually, the Chesapeake Bay.

Up until this summer, however, no one had done research to determine whether or not the green infrastructure was doing its job of reducing pollutants.

That's when Steele Lamade '19 stepped in to investigate under the auspices of the Summer Undergraduate Research Institute, in cooperation with Dr. Tanjina Afrin, assistant professor of civil and environmental engineering. The two received help from the VMI Construction Office, which oversaw the building of the CPTF, and Col. Thomas Timmes, professor of civil and environmental engineering.

In early June, Lamade and Afrin collected rainwater samples both from the CPTF and a standard gray roof in Lexington, with the latter source being used as a control, and then sent their samples off to the Lexington Wastewater Treatment Plant for water quality testing.

"We're just going through and collecting the rain water that's filtered through the green roof and the bio-retention basins and seeing what effect it has on the rain water," said Lamade.

Afrin, whose areas of specialty are fluid mechanics and water resources engineering, said that she and Lamade were interested in finding out if the quality of the runoff water in the area had changed



Steele Lamade '19 and Dr. Tanjina Afrin position green roof tiles for testing.—VMI Photo by Maj. John Robertson IV.

since what was formerly an open, sloping field was covered by an enormous concrete structure.

"Our main purpose was to check ... whether the runoff characteristics were affected," she stated. "We're interested in testing the effectiveness of these green infrastructures."

Lamade said that the water samples were checked for six indicators of quality: pH; turbidity, or water clarity; phosphorus; nitrogen; TSS, or total suspended solids; and BOD, which stands for biological oxygen demand.

A high level of TSS is indicative of poor water quality, as solids can block sunlight from reaching submerged aquatic plant life. Similarly, Afrin noted that a high BOD indicates that much oxygen in the water is being consumed by algae or bacteria, and thus is unavailable to other aquatic life.

In the end, low rainfall during the study period created problems for the researchers, and their results were inconclusive. There was good news: the bioretention basins not only removed more than 86 percent of the total nitrogen in the rainwater, but brought down total phosphorus as well and brought the pH of the rain water to a more neutral state. The green roof was also found to lower pH and to provide lower levels of BOD, turbidity, and TSS.

Lamade and Afrin, though, felt that their sample sizes were too small for definite conclusions.

"The results of this study were inconclusive and not significant enough to warrant the recommendation for or against the implementation of green infrastructure concerning its effectiveness on water quality," Afrin wrote in an email.

Lamade said he'd like to see the project continue into the fall, so he and Afrin could collect more data. But he's already sold on the idea of constructing buildings with the environment in mind.

"You can't go wrong with green infrastructure," said Lamade. "It's being environmentally conscious, especially in areas like this, with the Chesapeake Bay watershed." 🌿



Steele Lamade '19 and Dr. Tanjina Afrin collect water samples from the bioretention basins adjacent to the CPTF.—VMI Photo by Maj. John Robertson IV.

519 Matriculate in Largest Class Ever

By Chris Floyd

For the Institute, Matriculation Day, Saturday, Aug. 18, was another step in the long evolution of similar days that preceded it in the years since the first class of cadets arrived in 1839. For the newest rat class, however, the day was a memorable first.

From the time the 519 new cadets entered Cameron Hall, they accumulated stacks of papers, balanced portfolios, and added their signatures to a seemingly endless mound of documents. The most important signature, however, came near the end of the trek around the venue.

That is when the rat adds his or her name to the revered Matriculation Book and officially becomes a part of VMI history.

"You look at how thick it is, how massive it is," said Rives Worsham '19, one of four cadets on Matriculation Book duty, as he recalled his first official day on post. "That in itself is a testimony to what you are doing and the tradition that you are about to become part of."

Signing that book is the last thing prospective cadets do before heading up the steps to get the uniforms that will become part of their daily lives for the next four years. It can be a long morning, full of nervous excitement and trepidation.

"It's an emotional day," said Tyler Topping '19. "There are a lot of different emotions: nervousness, excitement, not knowing what to expect, hoping you can make it."

Most of those going through the process Saturday were enduring the same feelings, as well as the



New Company E cadets fall in line for the first time on the floor of Cameron Hall just after the Matriculation Day welcome ceremony Aug. 18.—VMI Photo by H. Lockwood McLaughlin.

grind of winding their way around the floor of Cameron Hall. The whole process, to those not familiar with the layout, may seem chaotic, but there is a method to the madness.

"This is an important day," said Gen. J.H. Binford Peay III '62, VMI's superintendent, who emphasized the introduction to discipline and organization for the rats. "We've tried hard to make this day work. This is the start of a four-year journey, [and] hopefully, this sets the standard for the journey."

Of course, a big part of that journey begins with the signing of the Matriculation Book. This year 519 matriculants added their names, and, as usual, this class came to VMI with some distinguishing characteristics.

Chief among those is the sheer numbers they brought. This was the biggest class ever to matriculate to VMI, and included were 87 women, the largest number to matriculate in an incoming class to date. The group included 11 foreign students from five different countries, and 104 members of the class were recruited to



New cadets line up on the Parade Ground to begin training for the Rat Line.—VMI Photo by Maj. John Robertson IV.

participate in athletics. Forty percent of the new rats hailed from outside Virginia.

The academic prowess of this group lives up to the VMI standard as well.

"The academic profile continues to be very strong," said Col. Vernon Beitzel '71, VMI's director of admissions. "We saw an increase in the SATs, where, for the first time in a long time, we'll be over a 1,200 average on the SAT."

This year's group boasted an average high school grade point average of 3.70. Sixty-five percent of them plan on pursuing a degree in math, science, or engineering.

At the same time, Beitzel noted that "a large percentage" of the group will be pursuing a commission in the military, in line with the goals outlined in Vision 2039. Many of those are coming to VMI with an ROTC scholarship.

"We're fortunate there that the Department of Defense is still coming through," said Beitzel. "That's very positive."

Every one of those 519 endures the same trials of



Regimental Commander Ben Dixon '19 leads 519 new cadets from Cameron Hall to barracks to begin the Rat Line—VMI Photo by H. Lockwood McLaughlin.

their predecessors: meeting their cadre for the first time, running to barracks, and the Matriculation Week. And every one of them signed the big book sitting reverently on its podium in Cameron Hall.

It is a tradition that is lost on some, but its significance lives on with many cadets long after that first day on post.

"This school is based on tradition, and this is one of the most important traditions coming in," said Ariana Ruffin '21, who matriculated last year and was on hand to greet the newcomers.

"It's just an honor to be able to sign it."

"Everybody who has ever been here has signed this book," added Worsham. "My family has been coming here for a while, so all of their names are in it. I took a picture of my name today. A couple of guys have come up and taken pictures of their names, all of the alumni who are here with their kids. The book is just the start of it."

"For me, it was like it was my first small contribution to the school," Topping said. "I wondered if this signature was actually going to mean something or if it was going to be just another name in a book."

"Seeing all of these rats signing the Matriculation Book, they are the legacy that we are going to leave behind," Topping continued. "All of the contributions that we have made, we are going to pass on to them. Hopefully, it will carry on and they can uphold the tradition." 🌿

"Something Truly Special"

Alumni and Friends Give \$51 Million in FY 2018

By Scott Belliveau '83

On June 30, the VMI Alumni Agencies concluded fundraising for fiscal year 2018. The final results were impressive indeed: \$51 million in gifts and commitments, including \$41 million in cash. Included among the cash gifts was \$6.2 million to annual giving funds managed by the VMI Keydet Club and the VMI Foundation.

Gifts to restricted funds and endowments provide athletic scholarships, chairs, and professorships, as well as need-based financial aid. Support to unrestricted endowments and the Foundation Fund enables the Institute to enhance co-curricular and academic programs. Gifts to the Keydet Club's

annual giving funds allow VMI to maximize the number of scholarship equivalencies allowed by the NCAA and support cadet-athletes, coaches, and supporting staff. The \$10 million in the form of new commitments added to other long-term commitments means the Institute can chart its future with confidence, knowing these commitments and the thousands more made in the past will turn into hundreds of millions of dollars of support in the future.

To help put it in perspective, last month Brig. Gen. Dallas Clark '99, the Institute's director of finance, administration and support, addressed the combined staffs of

the VMI Alumni Agencies. In his briefing, he indicated that support from the agencies will make up almost 30 percent of VMI's operating revenues for this fiscal year. Again, almost one out of every three operational dollars that VMI will spend this year will come from alumni, parents, and friends. Furthermore, private support continues to represent the second-largest income source for the Institute.

With the support of private giving, VMI will be able to move from strength to strength over the next several decades, serving our country in this century as well (if not better) as it did in the last century. 🌿

Building a Nematode Family Tree

Biology Professor, Cadet Search Land and Sea for Microscopic Worms

By Mary Price

Maj. Ashleigh Smythe, assistant professor of biology, just can't get enough nematodes—and neither can Sadie Sandifer '20.

Smythe, an invertebrate specialist, has been studying nematodes, which are microscopic worms, since the late 1990s. Sandifer, who has now been assisting Smythe for two years, did a Summer Undergraduate Research Institute project on identifying marine nematodes last summer, and this summer, she continued her nematode analysis as a Swope summer scholar. The Swope program allows a cadet to conduct research alongside a biology department faculty mentor.

In early June, Smythe and Sandifer traveled to Fort Pierce, Florida, to collect marine nematode samples at the Smithsonian Marine Station, including time aboard the Smithsonian's research vessel *Sunburst*. They then returned to post to dig up freshwater and soil-dwelling nematodes near Woods Creek and on North Post. Most nematodes are invisible to the naked eye, but under a microscope, Smythe can identify many of them to the species level.

The goal, said Smythe, is to build a phylogeny, or family tree, of nematodes.

"It's sort of a hypothesis of who's related to whom," Smythe explained. "How do all of the nematodes relate to each other?"

For Sandifer, it was her first chance to analyze a living nematode instead of a dead one. "I had the chance to see them alive under the microscope and analyze the moving and swimming patterns," she remarked.

There were also surprising discoveries. "Some unique nematodes we found included nematodes with symbiotic relationships with bacteria that made the nematodes look like they had hair across their entire bodies," Sandifer commented.

She also found that the sea is teeming with life, and not just microscopic life. "There were not just

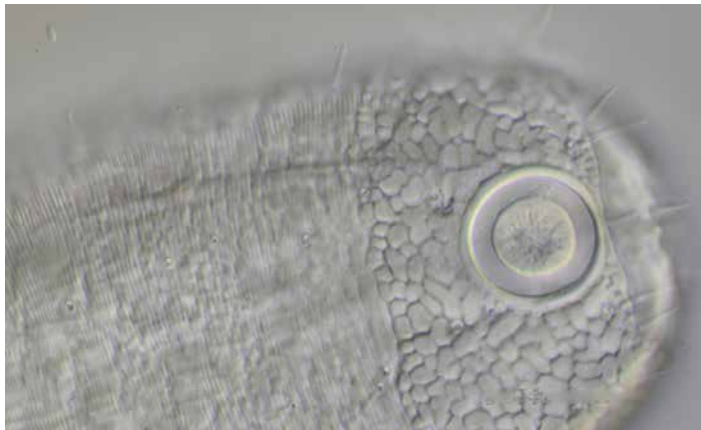
nematodes under the microscope, but leftover sediment from the rinsing and a lot of other microorganisms from the ocean, so you had to fish through it to find the nematodes," Sandifer said. "One of my favorite finds besides the nematodes was a tiny brittle starfish."

Smythe and Sandifer's seemingly endless hunt for more nematodes has as its purpose filling the gaps in scientific knowledge.

Smythe explained that much nematode research so far has focused on parasitic nematodes, because those are the ones that impact humans the most. Since not as much research has focused on free-living nematodes, Smythe is working to learn more about them, with the help of two collaborators, one at the University of Alabama and the other at the Swedish National Museum.



Sadie Sandifer '20 helps the captain of the Smithsonian's RV *Sunburst* empty the sediment from a dredge looking for marine nematodes off the coast of Fort Pierce, Florida.—Photo courtesy of Maj. Ashleigh Smythe.



The head region of a nematode from the *Desmodoridae* family is pictured here magnified 100 times.—Photo courtesy of Maj. Ashleigh Smythe.

"You can't understand the evolution of the parasitic nematodes unless you understand the free-living nematodes they came from," Smythe stated.

"We're trying to build a phylogeny for the whole phylum," she continued. "Obviously, we can't get every species, because there may be a million, but we can try to get representatives of the major groups."

This summer, Smythe and her collaborators are publishing a paper on research they did last year, and next year, they hope to publish another on this year's research, listing Sandifer as a co-author for the 2019 paper. Eventually, they hope to secure a National Science Foundation grant to support their work. ❁

Leadership Camp Reveals Possibilities for Girls

Ashlie Walter

At a new camp hosted by VMI cadets and faculty, girls had the usual camp experiences, like making new friends and camping outdoors, but they also learned about academic opportunities available to them at the Rockbridge Girls Leadership Exchange Camp.

The camp, held in early June, was a summer academic project conducted by Annika Tice '19 and Maj. Stephanie Hodde, assistant professor of English. About 14 girls attended the four-day camp, in which they took part in activities on post ranging from building rock sculptures to learning digital storytelling. Other adventures took them off post, including yoga and camping at Cave Mountain Lake.

Maj. Julie Brown, assistant professor of English, and Col. Jay Sullivan, professor of mechanical engineering, developed a "Layers of Place" project where girls composed journals and sketches identifying their connections to a place and used engineering concepts to create rock sculptures on North Post.

Col. Holly Richardson, professor of physical education, and Maj. Michelle Caruthers, deputy director of Physical Plant, worked with girls in meditation and yoga exercises and led a stream walk investigation at Cave Mountain Lake.

"I asked Annika to focus on particular qualities of experience in both campers' social interactions and learning narratives that reveal growth or potential—we still need to complete our analyses, but the quality of their work we observed already shows us that these kinds of summer exchanges reveal possibilities for giving rural girls access to conversations about where they are, and what they want to become," Hodde said.

For Elaine Price, 13, camping at Cave Mountain Lake was the best part of the leadership camp and she also enjoyed learning about central gravity through the rock sculptures.

Price's sister, Ginny, 13, also attended the camp and noted she enjoyed making new friends with girls she had not met before.

"It was really cool building all the things and the rock stacking," Ginny Price said.

Faculty members who taught classes during the camp volunteered after hearing Tice introduce the idea for a girls' camp at a "brown bag seminar" in April. The seminar focused



Maj. Stephanie Hodde discusses using organic materials to make sculptures near Woods Creek during the Rockbridge Girls Leadership Exchange Camp in June.—VMI Photo by Kelly Nye.

on Tice's idea for a program that encourages higher education among rural girls.

Tice combined her experience with female adolescent development and curriculum design from Maury River Middle School's Focus Learn Observe Watch (FLOW) program with Hodde's concept of a Rockbridge Girls Leadership Exchange for the camp.

The Girls Leadership Exchange initiative is funded in part by VCUR's Whetmore Fund, VMI's ERHS department, and Maury River Middle School's FLOW Program.

A long-term goal of the program is to include VMI faculty in an interdisciplinary STEAM education for girls and expose them to multiple avenues for leadership and academic futures.

"We wanted to create an opportunity for girls that was outside of their school environment, but where they still used their academic skills to solve challenges and craft solutions," Hodde said.

Tice wanted to better understand how girls draw on and push beyond their rural identities and experiences to develop creative thinking practices, something she is familiar with after growing up in Java, Virginia—a community in Pittsylvania County.

Tice said her experience in VMI's ROTC program and as a leader in the Corps of Cadets gave her confidence in organizing an event like the girls' camp and working to manage those involved.

"Being able to conduct research at all is something I never thought I would do, let alone create a girls' program from its foundation. None of it would have been possible without the generosity, support, and time that the VMI community has spent and continues to spend in equipping me to pursue my passions," Tice said. ✱



Annika Tice '19 works with campers building rock sculptures during an engineering workshop.—VMI Photo by Kelly Nye.

'You Can't Wait for a Translator'

Cadets Boost Language Skills through Immersion

By Mary Price

This summer, 23 cadets chose to further their language study in the most direct way possible: by signing up for immersion instruction in a country where their chosen language is spoken.

Sixteen cadets traveled to Madrid, Spain, where they studied Spanish at the *Universidad de Alcala* and took a Spanish culture class taught by Dr. John Knowles III, adjunct professor of modern languages and cultures. At the same time, seven cadets were in Paris, France, studying French at the *Institut Catholique de Paris* and taking a culture class taught by Maj. Jeff Kendrick, assistant professor of modern languages and cultures.

Both groups of cadets earned nine credit hours for their efforts—six hours of language study credit and three of civilizations and cultures credit.

Before this summer, Preston Cirillo '19 had been to France, but he'd never been to Spain. He signed up for the trip to Madrid to earn language credits he needed to graduate—but also because he wanted to advance his conversational Spanish.

At first, it was dictionary time nearly all of the time. "I found myself looking up words every few minutes," Cirillo wrote in an email. "Essentially, every time I did not know a word or phrase I looked it up and would try to use it in the future. I also watched movies, listened to music in Spanish and would eat meals with Spaniards at the residence we were staying at so I could improve my skills."

As the weeks went by, Cirillo found that putting in the effort was working.

"Immersion is a real thing, and for people struggling to learn a foreign language it may be the key to finally unlocking some of the things they have been learning in the classroom but are unable to piece together," he commented. "I was at an intermediate

level of Spanish before going to Spain but could not speak basic phrases. ...I can now understand a lot more spoken Spanish and, if given a little bit of time, can often formulate coherent responses."

Cirillo has met the requirements to graduate from VMI, partly as a result of transfer credit he brought in when he matriculated, so this fall he's returning to Spain to study on his own.

"I am returning the Spain on Aug. 30 for six weeks—four weeks of taking two more languages courses for fun, continuing to improve, and two weeks of traveling in Spain, mainly Andalusia," he explained at the end of July.

For Cirillo, language study is essential preparation for his future career, as he's now in the hiring process with the Henrico County Police Department near Richmond, Virginia.

"There's approximately 30 million people in this country who speak Spanish," Cirillo said. "As a police officer, in an emergency, you can't wait for a translator."

Like Cirillo, Nolan Lipscomb '19 found his language skills growing by leaps and bounds through study abroad. Lipscomb,

though, was part of the group studying French in Paris.

It was the second time he'd studied in France—the first being when he spent a semester in Paris during his 3rd Class year. "While abroad my first time I absolutely fell in love with learning French, because it was a much different experience using the language on a day-to-day basis," he commented.

Going back this summer, Lipscomb once again realized how important it is to speak a language daily in order to learn it well. "I found myself talking to many more strangers than I would when home because of the fact I could speak to them in French," Lipscomb explained. "It is really a unique experience you can't get in the United States."

Lipscomb had laid the groundwork for a successful experience long before he left post, though. After coming back from his semester in Paris, he'd worked hard to improve his writing, grammar, and comprehension.

"I noticed while learning French in France the second time it came much easier to me because of all the work I put in at VMI," he said. "I noticed that I was able to



Cadets take in the view from the Alhambra—a palace located in Granada, Spain—during the study abroad trip there this summer.—Photo courtesy of Dr. John Knowles III.

pull from a much wider array of vocabulary, which allowed me to understand what people were saying and express what I wanted to say much easier as well.”

It's experiences like this that language study abroad is designed to foster, Kendrick commented. Purposefully, the cadets aren't

housed in dorms with other American students—rather, they're assigned apartments, with native Parisians as their neighbors, and they shop for food and prepare meals just as natives would.

“All of a sudden they're around French all of the time every day,” said Kendrick.

“They're hearing it, using it, and connecting with people from another culture in another language. They're doing stuff in French that they can't do in English. ...They're having these experiences, and they don't necessarily have the English vocabulary to talk about those experiences.” ❧

Solar Telescope Offers New Observational Capabilities

By Ashlie Walter

This fall, astronomy students will have a new tool to aid in their studies in the form of a solar telescope installed over the summer on the roof of Maury-Brooke Hall.

In June, Physical Plant employees installed a small, white dome with a retractable door on the southern side of Maury-Brooke's roof that will house three separate telescopes to study the sun. One will be a 10-inch telescope with a calcium k-line filter for measuring the sun.

Col. Greg Topasna, professor of physics and astronomy, said he is excited about the new venture because he will be able to spend more time on observations with cadets than time setting up the machine.

“I would only have them for an hour or two during class time. Now they can start



Col. Greg Topasna explains how the solar telescope on top of Maury-Brooke Hall will function remotely.—VMI Photo by Kelly Nye.

when the sun is up, and this gives them long-term data,” he said.

The major benefit of the telescopes is seeing solar phenomena over time, using visualizations such the famous diagram called

“the butterfly.” When multiple images of the sun are captured over time, patterns can develop that look like a butterfly.

A small computer will be installed with the telescope allowing Topasna to control it remotely from his office in Mallory Hall. A weather station was also installed to measure when weather conditions are suitable for opening the dome. If the weather is not suitable, the dome will not open.

He said the new telescope would not compete with the 20-inch telescope housed in the VMI observatory at McKethan

Park. However, he would like to see the same remote-control technology installed at the observatory.

The telescope and dome were paid for with departmental funds. ❧

TAPS—Thomas Baur '75

Col. Thomas Baur '75, professor emeritus of biology, died in a traffic accident in Rockbridge County Aug. 23 at the age of 64. He was a member of the VMI faculty for 25 years, retiring in 2013 and continued to serve the Institute in his retirement. He graduated from the Institute with a degree in biology before serving in the Army for two years and in the Army Reserve for six years.

Baur, a recipient of the Thomas Jefferson Teaching Award, the Distinguished Teaching Award, and the VMI Meritorious Service Medal, served as director of the Summer Transition Program, was faculty chair of athletics, and served as head of the



Col. Thomas Baur '75

biology department. He was teaching at the Institute on a part-time basis and was serving as the superintendent's representative to the honor court at the time of his death.

A native of Huntington, West Virginia, Baur competed on VMI's football team during the 1971 and 1972 seasons and held the ranks of corporal, sergeant, and lieutenant during his time as a cadet.

Baur earned a master's degree in exercise physiology from West Virginia University and a doctorate in the same field from Purdue University. Before beginning his tenure at VMI, he served for six years as an exercise physiologist at the Soldiers Physical Fitness School at Fort Benjamin Harrison, Indiana.

Among his survivors are his wife, Judy, their two sons, Daniel and Stephen, and their families. ❧

Graduates Represent U.S. in Soccer Tourney

By Chris Floyd

It wasn't the World Cup, but another global soccer tournament took place this summer. And two former cadets were part of it.

Amy Horney '18 and Kristen Whitehurst '17 were members of the United States Armed Forces women's soccer team which competed in the CISM World Military Women's Football Championship at Fort Bliss, Texas. Nine countries, including the U.S. squad, took part in the tournament, which took place June 22-July 3.

"Being a member of this team has been the highest honor I have ever received," said Horney, who commissioned into the Marine Corps after completing her tenure at VMI. "Representing the United States while playing the game I love is the pinnacle of my soccer career, and I would have never imagined I would be in this position."

"I am honored and proud to wear USA on my jersey to represent this great nation and the United States Navy on and off the field," added Whitehurst, who grew up in El Paso, the site of the world tournament. "It's amazing to continue my passion, especially in El Paso."

After losing its first two games in pool play, the U.S. squad bounced back with a pair of wins, knocking off Canada, 1-0, and defeating the Netherlands, 3-1. Horney assisted on one of the goals in the victory over the Dutch.

The United States finished with six points during group play and finished third in Group A. The top two teams from each group advanced to the final round, which was played July 3. In the end, Brazil secured its fifth title in the tournament by defeating South Korea.

Horney, who ranks first on VMI's all-time list with 78 games played, said earning a spot on this team was one of the hardest things she's ever done.

After learning about the team, Horney submitted an application and was invited to the tryouts with 50 other players. Competing at an elevation of over 4,000 feet and in temperatures that soared above 100 degrees, Horney endured through three cuts before being added to the 21-person roster.

"The days were long, and the climate change might have been the hardest part," Horney said. "Every part of our day was filled with three practices, a yoga or swimming session, and a classroom session. It might have been the hardest tryout process my body has been through."



Amy Horney '18 (number 22) and Kristen Whitehurst '17 (number 5) pose for a photo with their teammates during a tournament at Fort Bliss, Texas, June 22.—U.S. Navy photo by Mass Communication Specialist 3rd Class Camille Miller.

"I think my time at VMI developed me so much as a player that was more prepared than I realized going into camp," she added. "Of course, playing soccer with a [VMI] program that has developed so much from my freshman to senior year helped, but all of the qualities that VMI teaches you as a whole came into play. Having the resiliency and mental fortitude to push through the long days and mental games pushed me past the walls standing in front of me."

Whitehurst, an ensign on the USS *McCampbell*, stationed in Yokosuka, Japan, admitted that she was nervous about submitting her application for the team's tryouts. Being stationed on a guided missile destroyer does not lend many opportunities for playing soccer, but it turned out she made the right decision.

"I'm glad I did," said Whitehurst. "A week straight of those days [during tryouts], which did not let up, was grueling and exhausting, but amazing at the same time."

At tournament's end, Horney returned to the Officer Selection Station in Newark, Delaware, where she will work until being summoned to the Basic School for the Marine Corps in September. Whitehurst headed back to the *McCampbell*. Both VMI graduates spoke of tryouts for next year's team, which will participate in an international tournament in China, and how, even though this year's squad did not earn a medal, they had already won something.

"I was honored to be a part of [this team]," Horney said. "The women here are inspiring."

"We had such good talent at camp that no one felt safe during cuts, which shows a lot about the growth and competitiveness of the team," added Whitehurst. "I hope I get to play next year. Soccer is in my blood, and I cannot imagine my life without playing." ❁

A Lesson in Engagement

Cadet NAACP Intern Learns the Value of the Vote

By Mary Price

“Voting changes politics.”

That’s what Caleb Minus ’20 had to say as he wrapped up a summer internship with one of the nation’s largest and most respected civil rights organizations, the NAACP.

Founded in 1909, the mission of the National Association for the Advancement of Colored People has as its mission eliminating discrimination based on race. The organization also has a campaign underway currently to register new voters and thus bolster civic engagement. That’s where Minus came in, as a civic engagement intern.

“Our goal is to get more people involved in the democratic process,” said Minus, who is the first cadet in recent memory to intern at the NAACP. This summer, he served as a non-partisan liaison between the NAACP’s civic engagement team and March for Our Lives, a group formed in the aftermath of the Parkland, Florida, school shooting that killed 17 teenagers and school staff members.

“I’ve learned how significant one person’s vote is,” said Minus of his time with the NAACP. “I’ve learned what the lack of voting can do to our country, even on the local level.”

Minus has little patience with those who demand change but don’t involve themselves in the democratic process. “If [people] want to see a change in their lives, they should run for office,” he commented. “If you’re complaining about education, you should run for the school board.”

In addition to coordinating voter registration efforts, Minus helped to write profiles for a handful of states as the 2018 elections drew near, with an emphasis on what’s at stake in each state for the upcoming election.

He also did research on the U.S. census and redistricting as it relates to this fall’s election, as there is some doubt that the 2020 census will be fully funded. That, Minus explained, could result in an inaccurate count, especially in rural areas. If that happens, “minorities will suffer,” the cadet intern commented.

While much of Minus’s time was spent at NAACP headquarters in Washington, D.C., he also spent a week in mid-July in San Antonio, Texas, for the organization’s annual convention.

“That was a blurry week—it was like Hell Week,” recalled Minus. He met several well-known individuals, among them political analyst Angela Rye. He also spent time with Courtland Cox, one of the organizers

of the Aug. 28, 1963, March on Washington during which Martin Luther King Jr. gave his “I Have a Dream” speech.

“That was cool,” said Minus of his meeting with the longtime civil rights activist. “We’re friends now.”

Minus was one of more than 130 cadets completing internships this summer, according to Maj. Dorothy Hayden, assistant director of career services.

That’s a typical number, she commented, but ideally, Hayden and others in the Office of Career Services would like to see as many as 170 cadets undertake summer internships. “I think the potential is there,” Hayden noted.

“Caleb was proactive in networking and searching for internships” she commented. “We were delighted to learn that Caleb was the first cadet from VMI to be selected by the NAACP for their summer internship program. Over the years, employers who start with recruiting one cadet often come back to recruit more cadets.”

A native of Florida, Minus first encountered VMI through the College Orientation Workshop, or COW, a program designed to get young minority males on track for a college education. The program has been run since its 1987 inception by Eugene Williams ’74, the first African-American to serve on the VMI Board of Visitors. After two summers as a COW participant, Minus served as a COW counselor the summer he matriculated.

Williams had high praise for Minus, whom he’s known for some time now. “Caleb is a great [cadet],” said Williams. “He’s really conscientious. He has a bright, bright future.”

Minus likewise has great appreciation for Williams, who brought him to VMI via COW. “Mr. Williams essentially kicked me through the barracks arches,” he commented.

Once through those arches, Minus wasted little time, declaring a major in international studies and joining the Institute’s NCAA track team, where he’s a short sprinter and hurdler. He’s a member of Band Company, where he plays the saxophone, and he also plays in the VMI Jazz Band. This fall, he’ll be a guide sergeant with the cadre, and he’s also one of two DJs for the Corps, playing music at hops and other dances.

“I try to keep myself out of trouble,” said Minus of his multiple commitments on post.

After VMI, Minus hopes to commission in the Army, and then work in some capacity to influence the political process. “I want to be in politics,” he said. 🌟



Caleb Minus '20

'Mad, Tired, and Scared'

COW Teaches Persistence, Personal Growth Through Adversity

By Mary Price

There's usually not a lot to be gained by intentionally making teenagers mad, tired, and scared. But with the College Orientation Workshop, that's precisely the goal, and one that's been changing lives for 31 years.

COW, as the program is known, is a non-VMI program that is held each summer on post, with the aim of taking high school-age minority males, many from low-income families, and exposing them to a four-week structured program that will stretch their limits mentally and physically. Since its inception in 1987, the program has been run by Eugene Williams '74.

"There's much emphasis on character," said Williams, who returns to Lexington each summer from his Maryland home to lead COW.

That's where the mad, tired, and scared part comes in. "All of them will be mad at some point, tired at some point, scared at some point," Williams commented. "But we'll still have to operate effectively. How do you teach somebody how to operate when they're mad, tired, and scared? You can't do it by just telling them."

Not surprisingly, COW teaches overcoming adversity the same way VMI does—by giving plentiful doses of it. COW participants are required to get up early and do physical training before being allowed to shower and have breakfast. Then, it's off to class. There's a class in mathematics, and another in English, with a strong emphasis on communications and public speaking. There's also a class on note taking and study skills, and another on financial literacy.

The boys are also required to complete CPR/AED training, along with a community service project. For this year's project, the boys collected shoes for Soles 4 Souls, a group that collects shoes for those in need.

"We give them more work than they can do," said Williams.

The boys are also required to write in a journal each day, and if they don't, they get disciplined for it just the way a cadet would be. "Do-rights" take the form of physical exercise.

"It's punishment, but it's punishment where you are getting stronger from it,"



Col. Jimmy Coale shows COW participants weight training exercises in Cormack Hall during the program in July.—VMI Photo by Kelly Nye.

Williams noted. "It's not frivolous. There's no corporal punishment."

The physical training and classwork work together to make COW participants mad and tired—but scared requires more. That's why they go rappelling, do high ropes courses, and climb House Mountain.

"We do this to show them that when you are in those states—mad, tired, scared—you cannot give up," Williams emphasized. "You can't get a bad attitude. You still have to produce, and do so in a quality way ... That's the secret sauce of COW."

It works. Approximately 75 percent of COW participants go on to enroll in college, although Williams has no way of tracking how many graduate from college.

He does know that although only 3 percent of COW participants attend VMI, of that 3 percent, 85 percent will graduate.

Success stories abound, including one of a boy who came to COW in 1988 and then went on to Morehouse College in Atlanta. Down the road, he went to work in the admissions office at the Massachusetts Institute of Technology. To this day, his parents are so grateful for COW that they send Williams

a sizable donation to support the program each year.

It's money that's desperately needed, as the program receives no state support whatsoever. It's funded exclusively by private donations. Families of participants are not required to pay anything up front, although they are invited afterwards to make a donation if they are in a position to do so. The program's only fundraiser is a yearly golf tournament, held each May at the Country Club of Virginia in Richmond.

Despite COW's success, enrollment has stayed small, usually around 30 boys a year. This year, there were only 21, a drop that Williams attributes to lax parenting and teenagers' unwillingness to give up their cell phones. During the COW program, participants are allowed to have phones only on weekends.

COW participants come from a variety of ethnic backgrounds, mainly African-American, but with a mix of Hispanic and Asian ethnicities as well. And despite the program's stated intention of promoting minority achievement, three Caucasians have attended COW over the years,

mostly because their parents asked that they be included.

According to Williams, the three Caucasians had no problems with being the minorities themselves at COW.

"Kids don't have issues with race," the program director stated. "It's adults who have those issues."

Not surprisingly, making COW run smoothly involves a wide swath of the VMI community. Capt. Chad Joyce and Col. Jimmy Coale are instrumental to

conducting physical training, and Col. Sam Ratcliffe '74, recently retired director of career services, has taught the career exploration and study skills class ever since COW started. Cadets are hired as counselors, and Williams takes care to hire a mix of races and both genders.

"These boys need healthy relationships with women," he said of the boys' interactions with female cadets.

In many ways, teenagers' worlds have changed vastly since COW began over three

decades ago. Walkmen have given way to streaming music services, and social media binds teens together in a way that teen magazines and notes passed in class never could. But one thing hasn't changed: the need for a challenge that will inspire and motivate teens to do more and be more than they ever thought possible.

"[COW is] a combination of physical challenges and demanding requirements to help people grow into their better selves," said Williams. ❧

Governor Appoints Board of Visitors Members

By Col. Stewart MacInnis

Gov. Ralph Northam announced June 13 the appointment of one new member to the Virginia Military Institute Board of Visitors and the reappointment of three current board members.

Beginning a four-year term July 1 was Thomas E. Gottwald '83, chairman of the board of the Richmond-based New Market Corp. Reappointed to additional four-year terms were Conrad Hall '65, Richard K. Hines V. '66, and Joe R. Reeder.

Mr. Gottwald is chairman of the board, president, and chief operating officer of the New Market Corp., which is the parent company of Afton Chemical Co. and Ethyl Corp. He graduated from VMI in 1983 with a Bachelor of Science degree in chemistry and shortly after earned a Master of Business Administration from the Harvard Business School. As a cadet, he was president of his class and played football for four years and was an academic all-American. He served from 1998 to 2004 as a member of the board of governors of the VMI Keydet Club, and currently serves on the VMI Jackson-Hope Board of Overseers. He is involved in numerous civic activities in the Richmond area, including the Virginia Home for Boys, the Valentine Museum, and the Children's Museum of Virginia.

Mr. Hall, former president and CEO of Dominion Enterprises and a 1965 graduate of VMI, holds a

Master of Business Administration from the University of the Virginia Darden School of Business. His career in marketing and communications began at Landmark Communications Inc., where he continues to serve on the board of directors. He also served as an artillery officer in the U.S. Army and is a past president of the VMI Foundation.

Mr. Hines, a partner in the Atlanta-based law firm Nelson Mullins

Riley & Scarborough LLP, has served as president of the National Association of Railroad Trial Counsel. A 1966 graduate of VMI, he served two years in the U.S. Army as an armor officer, before entering and graduating from Vanderbilt Law School. He previously served as a member of the VMI Foundation Board of Trustees.

Mr. Reeder, a shareholder at Greenberg Traurig and former under-secretary of the Army, has served as chairman of the Panama Canal Commission's board of directors, and as a member of the U.S. Department of Defense Base Realignment Closure Council. He holds a bachelor's degree from the United States Military Academy, a master's degree from Georgetown University Law Center, and a juris doctor degree from the University of Texas School of Law.

Leaving after the maximum of two 4-year terms is Mr. Bruce G. Gottwald Jr. '81, managing director of Jonah LLC, a private investment management company in Richmond. ❧



Thomas E. Gottwald '83 and Ann Parker Gottwald pose with Gen. J.H. Binford Peay III during a campaign event in Richmond July 2017.—VMI File Photo by Kelly Nye.

STP Connects Student Learning to Real Life

By Mary Price

Ongoing at VMI for over three decades now, the Summer Transition Program allows incoming rats to get acquainted with post, take an academic class, and break in the shoes and boots they'll be wearing in the fall. While the structure of the program doesn't change much from year to year, the course offerings do, and this summer, there were two changes to STP programming, both with the goal of connecting students' learning to the real world.

Cadets in the surveying class taught by Maj. Paul Ackerman '93, assistant professor of civil and environmental engineering, found themselves

going off post to Lime Kiln Theater, a popular outdoor concert venue near Lexington, to conduct a topographical survey for potential grading that would allow for an expansion of seating. It was the first time that participants in the civil engineering STP class had done a real-world surveying project.

"We mostly work on the Parade Ground," said Ackerman, who taught the surveying class for the fourth time this summer.

This year, though, there was a request from Lime Kiln for assistance. Two civil engineering majors—Zachary Pokrywka '18 and Corris Atkins '18—had already completed an independent study in the spring that involved surveying at the theater, so the 18 soon-to-be cadets in Ackerman's class built off of their work.

"It was a hands-on, real world project that cadets could really engage in," Ackerman noted. "They loved it."

Ackerman also pointed out that projects such as this allow cadets to give back to the community—and that the work at Lime Kiln was almost tailor-made for cadet participation. "It's a small enough project that we can get cadets involved in," he stated. "It's close enough that cadets can access, and it's a nonprofit that really adds to the likability of Lexington. It's enjoyed by the community."

In Mallory Hall, home to VMI's applied mathematics department, STP participants enrolled in Math 101 found themselves trying out a new curriculum for the very first time. Under development

for the past two years, "Math that Matters—Math for the Modern World" debuted this summer in a class taught by Lt. Col. Meagan Herald, associate professor of applied mathematics. The course is designed to teach computational and analytical skills by asking

students to tackle real-world problems.

The 20 students enrolled in the course put their math skills to work trying to find out if cadets are becoming more or less fit over time, by comparing data collected between the 2007 and 2017 administrations of the VMI fitness test and taking into account that standards for the test have changed over time.

"It's one of those open-ended questions that there's not one answer to," said Col. Troy Siemers, chair of the Department of Applied Mathematics.

Getting away from the sense that math problems only have one answer that is right

or wrong is one of the goals of "Math That Matters," Herald and Siemers agreed.

"By the end of the course, they're comfortable with open-ended questions and defending their answers," Herald noted.

The course was purposely interactive, with students working in groups or with partners almost all of the time. Answers were delivered by PowerPoint presentations or written reports. For the cadet fitness question, students were asked to write a letter to Gen. J.H. Binford Peay III '62, Institute superintendent, outlining and defending their conclusions.

When asked, students said they'd enjoyed the class and gotten a lot out of it.

"I liked the group part of class," said William Taylor '22. "It's easier to get help in a group, and I learned better when I was helping others."

Classmate Emma Flora '22 agreed, saying, "Instead of just sitting and listening to lectures, we got to learn through a hands-on style. We got to be creative and write papers in math class."

This year's STP group numbered 215, up from 190 in 2017, said Capt. John E. "Ned" Riester '78, who has directed the summer program for the past 13 years.

"We had a great group of kids and the [cadet] counselors were wonderful," Riester commented. "It all went well." ❧



STP students survey the Parade Ground during Maj. Paul Ackerman's civil and environmental engineering class. —VMI Photo by Kelly Nye.

Small Construction Projects Improve Post Appearance

By Ashlie Walter

While most of the cadets were away for the summer, Physical Plant employees and contractors worked hard to complete necessary repairs across post.

Starting in barracks, employees worked on repairs and waterproofing of parapets this summer along with restoring windows—an ongoing project that maintains the historic elements of the structure. Approximately 110 windows were restored this summer, according to Maj. Michelle Caruthers, deputy director of Physical Plant.

Across Letcher Avenue, work began on Jackson Memorial Hall in May to



New bricks are laid alongside those salvaged from the existing walkway along Faculty Row.—VMI Photo by Maj. John Robertson IV.

repair and replace the stucco on the entire west side of the building. Contractors removed the old stucco, revealing the brick structure underneath, and will continue applying the new exterior finish as cadets return. Stair repairs were also included in the project, which is projected to be completed in October.

On the other side of barracks, the brick walkways along Faculty Row were re-laid. New brick pavers matching the Lexington brick style were incorporated into the walkway alongside brick pavers salvaged from the existing walkway. Contractors also completely replaced the sidewalks on the south side of the Parade Ground.

Finally, a whole-house renovation of 450 Institute Hill—commonly known as the chaplain's quarters—was completed in August. New plumbing, electrical, and HVAC systems were installed and the kitchens and bathrooms received a complete renovation with new cabinets, fixtures, and appliances. Exterior repairs were made to the windows, roofing, and masonry, followed by a new coat of paint. ❁



Old sidewalk is demolished to make way for fresh concrete.—VMI Photo by H. Lockwood McLaughlin.



Underlying brick is exposed on Jackson Memorial Hall as new stucco is applied.—VMI Photo by Maj. John Robertson IV.

Rat Athletes

Command Sgt. Maj. Suzanne Rubenstein instructs an incoming cadet how to salute during a training exercise on the Parade Ground. The women's soccer players, along with football and men's soccer, arrived two weeks before Matriculation Day to begin their respective seasons. The commandant's staff provided new cadets with training.—VMI Photo by Kelly Nye.





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State Higher Education Board Visits VMI

By Ashlie Walter

A governmental body overseeing higher education in Virginia paid Virginia Military Institute a visit in June to discuss new and recently completed capital projects.

According to Brig. Gen. Dallas Clark '99, director of finance, administration, and support, representatives of the State

Council on Higher Education in Virginia (SCHEV) visited the Institute June 26. While here, the group took a tour of Cocke and Cormack Halls, as well as the Corps Physical Training Facility.

"For us, when we have people come from Richmond, we want them to understand the unique nature of VMI's mission," he said.

The SCHEV and VMI representatives discussed planning for a major project to support that mission.

If funds are approved by the General Assembly, detailed planning will begin for the Corps Physical Training Facility Phase III, an aquatic center that will replace the nearly 50-year-old, leak-prone pool in Clark King Hall. The total budget for the project is just



Representatives of SCHEV pose with VMI personnel during their June 26 meeting.—VMI Photo by Kelly Nye.

over \$41 million. The earliest start date for construction would be 2020.

Phases 1 and 2 of the Corps Physical Training Facility project involved the renovations of Cocke and Cormack Halls and the construction of the new indoor training facility at the corner of Main and Diamond streets.

SCHEV's responsibility is to assess the project and give a recommendation to the General Assembly. Clark said it was important to emphasize the multiple uses the training facilities get at VMI outside of athletics.

"SCHEV staff might look at that and say it's an athletic facility [and rate it a lower priority] not knowing the center would

support ROTC, club sports, and NCAA sports," he said.

Also, NCAA athletes may use the indoor training facility for three hours a day, while academics and ROTC might use it for eight hours a day.

"For us, informing this group on who we are is informative for anything; when it comes to other measurements, it's an overall discussion on our uniqueness," Clark said. 🌸

China Study Abroad

Dr. Laura Xie, assistant professor of modern languages, poses with summer study abroad cadets at Tsinghua University in Beijing. The group met with Sun Di (center), a relative of Gen. Sun Li-jen '27, who graduated from Tsinghua in 1923 before attending VMI. During their trip, the cadets also studied comprehensive Chinese and spoken Chinese at Peking University. They explored sites in Beijing, including the Forbidden City, the National Military Museum, and the Great Wall. They also traveled to Inner Mongolia, where they rode camels and horses.—Photo courtesy of Laura Xie.

