



INSTITUTE REPORT

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'Get Put Out of Your Comfort Zone' Olmsted Trip to Israel Offers Cultural Immersion Experience

By Mary Price

Ongoing for several years now, a spring furlough trip sponsored by the Olmsted Foundation has taken cadets to many places across the globe, from Vietnam to Poland.

This year, though, eight cadets and three faculty members from the Department of History had an entirely different experience as they traveled to Israel over spring furlough.

"The Olmsted Foundation gives us a lot of freedom in terms of picking locations," explained Maj. Houston Johnson, assistant professor of history, who was making his fourth Olmsted trip this year.

"Israel is a really interesting place geopolitically in terms of U.S. policy, and also with the cultural, religious, and ethnic history and tension, we thought it would offer the cadets a really interesting opportunity



Cadets take in the view from Masada, an ancient fortress in the Judean Desert of Israel, during the Olmsted-sponsored trip over spring furlough.—*Photo courtesy of Maj. Houston Johnson.*

for cultural immersion," he continued.

The Olmsted Foundation, which provides the funds for nearly all trip expenses, offers cultural immersion opportunities for cadets planning to commission into the armed services, with the goal of broadening the world view of future officers.

Israel is a small country—roughly

See Olmsted Trip, page 12

Bass Fishing Club on the Rise

By H. Lockwood McLaughlin

Members of the Institute's bass fishing club braved harsh conditions on Kentucky Lake as they competed against hundreds of collegiate anglers from across the county at the Fishing League Worldwide College Open held March 6-7.

Four cadets—Jacob Novak '18, Wyatt Novak '20, Tony Schultz '20, and Paul Brown '20—made the trip to western Kentucky to compete on the water for 15 hours over the two days of the tournament.

"The lake was flooded by over 15 feet to begin with, but the real problem was 30-mile-per-hour winds each day," said Jacob Novak. "While driving across the middle of the lake it was not uncommon to run into four- or five-foot waves. Five boats sank during the



Anglers prepare to leave the dock for the Fishing League Worldwide College Open on Kentucky Lake March 6.—*Photo courtesy of Matt Pace/FLW.*

See Bass Fishing, page 14

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Director Col. Stewart MacInnis
Editor Maj. John Robertson IV
Assistant Editor Kelly Nye
Designer Robbin Youngblood
Institute Report Staff
Chris Floyd
Stephen Hanes
H. Lockwood McLaughlin
Mary Price
Ashlie Walter

Header photo on page 1 by Kelly Nye

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Retirement Parade

Col. Sam Ratcliffe '74 (left) and Col. David Coggins (center) join Gen. J.H. Binford Peay III '62 in reviewing the Corps of Cadets at a parade April 13 honoring retiring faculty and staff. Coggins, commanding officer of Naval ROTC, starts his new post as president of Fork Union Military Academy in June. Col. Craig Streeter '91 will take his place at the helm of VMI's Naval ROTC department. Ratcliffe, director of career services, concluded a 40-year career at the Institute. He received the Southern Star Award from the Southern Association of Colleges and Employers in December, and, in June, will receive the Kaufman Award from the National Association of Colleges and Employers and the Tribute Award from the Eastern Association of Colleges and Employers.—VMI Photos by Ashlie Walter and Kelly Nye.



Business Leadership and Innovation Summit Winners

Dr. Dekuwmini Mornah poses with Brian Maguire '18 and Jack Smith '18 who won first place in the Business Leadership and Innovation Summit's poster contest held in late March. Their poster was titled "AgriVision." Robert Chaszar '21 won second place for the poster "MoneyGrub." Brian Lipscomb '18 and Alex Rofail '18 won third place for the poster "KeydetGo."—Photo courtesy of Dr. Dekuwmini Mornah.



Cadets Create Financial Report for Lexington Residents

By Ashlie Walter

Many Lexington residents may pay their city taxes but not know exactly where that money is going. Two VMI cadets have taken on the challenge of translating the city's finances into an easy-to-read format for residents.

Jung Soo Lee '18 and David Zingaro '20 are planning to submit the current Popular Annual Financial Report to the city at the end of this semester. They're building off of the work Lee did last year on the PAFR, which started when Dr. Bing Jiang, assistant professor of economics and business and a member of VMI's community service board, began collaborating with Lexington City Manager Noah Simon. Simon told her that his department needed help creating a new type of financial report for residents.

"Since they didn't have the staff, it was a good opportunity for us to expose our cadets to that opportunity, also teaching principles of microeconomics," she said.

She proposed the idea of creating a PAFR for the city to one of her classes. Lee was the first to volunteer.

A PAFR is data extracted from a local city's annual financial report and used to produce a report that is easily understandable for members of the general public, who might not have a background in public finance.

"It's good experience, a good resume builder ... I'd hate the thought of leaving this place without having my name somewhere," Lee said.

Since this was the first project of its kind, Lee built last year's report from scratch, combing through hundreds of pages of city financial data and looking at other cities' reports.

He had to make sure the information conveyed was clear and understandable to the general public.

With help from the city manager, he was able to narrow the focus of the report to a few funds in the city budget and a major city project.

Last year, that project was a new Waddell Elementary School, which cost the city \$14.2 million.

The city government was so impressed with that first report that Lee was awarded a mayor's appreciation award, which Jiang hopes will become an annual tradition.

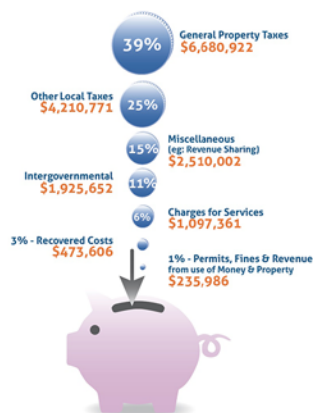
May 2018

General Fund Revenue

Total: \$17,134,300

The City's General Fund is one of the largest funds for the City's operation. The General Fund is the primary fund that accounts for everyday general expenditures like street and park maintenance, public safety, and administrative services, while at the same time supplementing the other funds. This does not account for the purchase of tangible assets, such as buildings. Those fall under the Capital Projects Fund (see page 4).

Like most funds, the General Fund relies on the inflow of cash, shown as revenues and subsequently the outflow listed as expenditures. The primary revenue for the General Fund is property taxes. Intergovernmental revenues are items like state funding and grants.



General Fund Expenditure

Total: \$15,179,215

In Fiscal Year 2016, most of the City's expenditure was for Public Safety (22%), Education (20%), and Public Works (19%).

The total expenditure was \$15,179,215, which was 13% (\$2,149,527) lower than the approved budget of \$17,328,742. This was partly due to belt-tightening and more efficient delivery of services, as well as projects that weren't completed in this fiscal year.

The Public Works department manages the City's infrastructure as it relates to roadways, water, sewer, and surface water management.



Lexington Popular Annual Financial Report 2016

A graph shows how the City of Lexington uses tax dollars in its general fund. The graph is part of the first Popular Annual Financial Report Jung Soo Lee '18 created for the City of Lexington.—Image courtesy of Dr. Bing Jiang.

Simon noted the report has helped the city government provide accessible and understandable information to the public.

"Originally, this information is published in the Comprehensive Annual Financial Report, CAFR, which is compiled in Excel and, while it is the 'meat and bones,' it doesn't provide much in the way of further explanation and could be considered difficult to understand for the general public," he said.

The feedback the city has received so far has been positive and they hope to promote the document in more communication outlets this year, Simon said.

"I am a numbers guy, so I may get more excitement out of the CAFR than some, but the PAFR does bring a new perspective to the table that comes to mind when preparing the budget document in terms of

tactical, not just the textbook but [real] data from the city," she said. "It's a great way to showcase their ability outside the classroom."

This year, Lee began mentoring Zingaro on building the report because Lee will graduate this May.

The plan is to have Zingaro create the report alone next year and then mentor another cadet in his 1st Class year.

Jiang also asked Zingaro to keep track of his hours working on the project in hopes of turning the project into a future internship.

"I had never seen or heard of a PAFR. The more I heard about it, the more I wanted to learn," Zingaro said. "I think it's how a lot of citizens see how much they are paying in taxes and seeing what those dollars are doing." 🍀

supplemental charts and overall appearance," he said.

This time, the featured projects were infrastructure improvements and a subdivision off Greenhouse Road funded by a federal grant.

Lee and Zingaro recently submitted the final draft of this year's PAFR and are awaiting final details and notes from the city government. Jiang said the city's Finance Director Gary Swink already said their work was "exceptional."

Economics, as a major, is often focused on theories, models, and data, but it's important for students to have experience in the real world application of their studies.

Leading the Way to a Better Environment

By Ashlie Walter

For three days the first week of April, nearly 500 participants gathered at Virginia Military Institute's Center for Leadership and Ethics for the 29th annual Environment Virginia Symposium to learn more about all facets of environmental policy, from pipelines to climate resiliency.

Gov. Ralph Northam '81 kicked off the conference by announcing an executive order he signed April 4 to "revitalize" the Virginia Department of Environmental Quality, which is celebrating its 25th anniversary this year.

"Protection of our environment, particularly the Chesapeake Bay, is why I decided to run for governor," he said, noting his Eastern Shore childhood spent crabbing and fishing in that bay.

The order called for updating current state environmental regulations, preventing rollbacks of environmental policy, and improving transparency into the DEQ's processes.

Northam said the department has seen its staff cut by 30 percent and its budget by \$60 million.

Many of the conference's attendees were DEQ staff members and other state officials, but participants also included representatives from businesses focused on environmental issues.

"The people in this room and Commonwealth will leave [the environment] better than we found it," he said.

Meanwhile, he highlighted how different regions of the state could feel the effects of such environmental challenges as climate change, the Atlantic Coast and Mountain Valley natural gas pipelines, the threat of rising sea levels in Hampton Roads, and coal ash depository ponds across the state.

"From the Appalachian Mountains to the Atlantic Coast, Virginia boasts the most diverse land. Outdoor recreation is two percent of [gross domestic product]," Northam said.

To learn more about the numerous issues facing the natural world, the conference featured 40 breakout sessions on topics such as offshore wind turbine development, solar development, improving water quality, and land conservation.

A new feature of this year's conference was a drop-in "think tank" for attendees to discuss and brainstorm environmental issues.

Several members pinned cards to the wall of a conference room with

their ideas on solar power, the effect of pipelines on soil, and other topics.

On the final day of the symposium, Ann Goodman, author of the book *Adapting to Change: Emerging Business Approaches to Climate Resilience*, spoke on how businesses can collaborate with government to improve their communities' resilience against

climate change and react to natural disasters.

Also on that day, Carlton Hershner Jr. was named the winner of the 2018 Erchul Environmental Award. Hershner is the director of the Center for Coastal Resources Management at the College of William

and Mary's Virginia Institute of Marine Science.

The Erchul Award is named for the late Capt. Ronald A. Erchul, who taught geology and civil engineering at VMI for 27 years and was the founder of the Environment Virginia Symposium. 🌿



Gov. Ralph Northam '81 delivers the keynote address during the welcoming ceremony for the Environment Virginia Symposium in Gillis Theater April 4. —VMI Photo by Kelly Nye.

Ducks Unlimited

The VMI Ducks Unlimited Club traveled to Back Bay National Wildlife Refuge in Sandbridge, Virginia, as part of a service project during spring Field Training Exercises, where they conducted habitat restoration. The group worked with the state Department of Conservation and Recreation to clean the beaches by picking up harmful trash along the refuge's six-mile stretch. They also spent a day uprooting Asiatic sand sedge grass—an invasive grass which weakens the protective dunes.—Photos courtesy of Ben Outland '19.



Carlton Hershner Jr. shakes hands with Col. David Gray while receiving the 2018 Erchul Environmental Award April 5 in Gillis Theater.—VMI Photo by H. Lockwood McLaughlin.

Biology Class Treks through the Swamp

By Kelly Nye

Lt. Col. Paul Moosman '98, associate professor of biology, led eight cadets from his vertebrate biology class into the swamps of Chesterfield County to look for reptiles and amphibians during an overnight trip April 14.

Moosman has been making the trip with cadets almost every year since 2011. They camp in Pocahontas State Park and look for species that are not found in the mountains, such as eels, aquatic salamanders, and even cottonmouth snakes.

"The goal is to expose the students to as many species as possible in preparation for a laboratory practical exam when we get back to post that will test their ability to identify the various species," said Moosman. "But the other major goal is to simply get them out in the swamp so they can appreciate how amazing wetlands are."

And despite the cold temperatures this spring, the class was successful in their finds. While hunting through the park they turned over logs and rooted through the mud. They found southern cricket frogs, a red spotted newt, a box turtle, and a worm snake among other things.

"Worrying about stepping on them makes you pay attention to little details," said Moosman.

One of the first cadets to go on the field trip, Roy Hunter '11, now joins the group as an



Lt. Col. Paul Moosman '98 shows Bela Melendez '20 and Hunter Sargent '18 a salamander found in Pocahontas State Park April 14. —VMI Photo by Kelly Nye.

alumnus, allowing the cadets and Moosman to use his land in Chesterfield County to hunt through the swamp for cottonmouths at night. There they found a variety of frogs, eels, a swamp rat, and one cottonmouth.

"Everyone is afraid of this particular snake but the class gets to see in person how they have been given a bad rap," said Moosman. "They are not aggressive, and beautiful actually."

Hunter's swamp, near the confluence of the James and Appomattox Rivers, is as far north on the East Coast as Moosman has ever seen cottonmouths.

Several of the cadets who were hesitant about looking for the venomous snake in the wild lost their reservations when they saw how non-aggressive the animal was.

"I didn't realize that the cottonmouth was so calm," said Samantha Fuller '19. "Wild animals don't really care about us as much as we all think."

Another important aspect was learning about the terrain the animals live in. Moosman and Hunter led the cadets through the swamp with nets and headlamps, sometimes submerged above the waist.

"Most of the time you don't get out in a swamp," said Hunter Sargent '18. "You take one step and you're ankle deep, and then you're chest deep in mud. Understanding how that environment is... and that's how [the animals] thrive."

Also assisting Moosman was Emily Kirk '18. This was her second time attending the trip—this time as part of a teaching mentorship class. She loves getting out in the swamp.

"This is my favorite field trip I've ever been on," she said. "It's one thing to see them in textbooks but it's another thing to see them in person." 🌿



Emily Kirk '18, Roy Hunter '11, and Lt. Col. Paul Moosman '98 waded through a swamp in Chesterfield County with nets to find species native to the area. —VMI Photo by Kelly Nye.

Cadets Partner With Community to Create Memoirs

Three Generations Look Back at Their Formative Years

By Kelly Nye

The English, rhetoric, and humanistic studies 411 fieldwork class is taking a more creative approach to service learning this semester by hosting the Rockbridge Community Memoir Project. The project is designed to represent the perspectives of three generations currently living in the area: Lylburn Downing Middle School students, VMI cadets, and residents from Kendal at Lexington.

This is the third fieldwork class taught by Maj. Stephanie Hodde, assistant professor of English, rhetoric, and humanistic studies. The first two classes assisted two organizations, Friends of the Chessie Trail and the Rockbridge Historical Society. This time, Hodde wanted cadets to participate with individuals more creatively.

"I was interested in creating a fieldwork class that had a creative component because most of the work thus far—the two years that I've been here—were more research based in terms of the service learning and providing some sort of need for the community," she said.

Hodde wants cadets to help individuals to record their unique contributions to the community, especially at a time when social media sites such as Facebook and Instagram make it easier than ever to record memories and share them.

"We're in that kind of golden age where everything is about public display," Hodde explained. "Yet memoir is a little bit trickier because there is a little more at stake and you're really defining not only yourself but a period of time, and a family, and a generation, or an institution."

So Hodde began the class by making sure the cadets understood the weight of writing in the creative memoir form. They read different models of contemporary memoirs, then reflected on them. The next step was to prepare workshops for the



Kendal resident John South discusses ideas for writing memoirs with Lee Adams '19 in Scott Shipp Hall March 5.—VMI Photo by Kelly Nye.



Maj. Stephanie Hodde writes ideas on the board for the ERHS 411 fieldwork class while the class meets with residents from Kendal at Lexington in Scott Shipp Hall Feb. 19.—VMI Photo by Kelly Nye.

middle schoolers and Kendal residents before leading them in their writing.

"There have been three prongs of the class," explained Hodde—studying, leading, and participating.

Lee Adams '19 is in the class and in Maj. Polly Atwell's creative writing class that assisted the fieldwork class in the beginning of the semester.

"I knew that the genre was something special and also

sometimes intimate," he said. "I imagined that—approaching these two generations and asking them to tell me about their past—there would be some walls, and with some there are, but all in all it is a very rewarding experience, for both reader and writer."

There were also some surprises once the workshops got started.

"At first I thought this will be a project about learning the local lore, but it's absolutely not that," said Hodde. With the Lexington community drawing people in from a multitude of backgrounds all over the country, Hodde and the cadets began to realize the scope of these stories would expand beyond Lexington. Furthermore, the intentions of each writer were as unique as the individual writing them.

The stories range from relationships between siblings, to childhood encounters in Brooklyn with adults from the South, to one-room school houses in the 1920's, to the integration of African Americans and then women at VMI. All of them reveal the sentiment of the times on a national level.

"I think there are some personal journeys going on in the class, for both the Kendal writers and the cadets. Most of the cadets are recognizing that this is a meaningful thing to be doing," said Hodde.

Childhood is a recurring theme throughout most of the stories—it is the experience all three generations have in common. And the sixth graders add a nice juxtaposition to the Kendal residents' experiences.

"For a child everything is so immediate," said Hodde. "They're having to think about it very differently in terms of what's unique

about that childhood lens—that lens that a young person would bring instead of someone who has all of that behind them.”

The cadets, too, are writing about what they know.

“My memoir is focusing on my neighborhood and its community events,” explained Adams. His writing project covers the same day—the 4th of July—over a six-year period. “I think looking back in the community that we grew up in can tell us a lot about ourselves.”

Sharing personal stories with each other accomplishes more than just the civic engagement the class was designed for. The cadets are

making personal connections with the middle schoolers and the Kendal residents.

“The production of stories creates a springboard of conversation. That’s really what’s happening,” said Hodde.

“I think cadets more than anyone know how much those personal connections count,” she continued. “Just here in barracks, here in the Rat Line, they know what those personal connections get you through. I think in this class they’ve been able to appreciate that on a different level in their short time together.” 🌿

Technology Librarian Develops Statewide Resource

By Mary Price

These days, librarians must be able to help patrons find information—but they can’t do their job unless they know where to find that information themselves. And with millions upon millions of book titles, not to mention journal articles and the like, available at college and university libraries across the commonwealth, it’s easy to feel overwhelmed.

Helping her fellow librarians to better access and manage information is Maj. Rachel Maderik, systems and technology librarian at VMI’s Preston Library. She recently created a new online resource, the Virtual Library of Virginia Protected Titles Visualization Tool, that allows librarians to find out more information about a group of protected books.

Protected books have been identified as those titles vulnerable to weeding—being discarded in the process of overhauling a library’s collection—and therefore needing protection so all copies of a certain book statewide are not discarded accidentally.

During 2014, a group of eight libraries at public colleges and universities in Virginia developed a list of scarcely held titles—books held in the collections of two or fewer libraries—and identified those titles as needing protection. All eight libraries involved, along with Preston Library, are members of the Virtual Library of Virginia, a statewide consortium of college and university libraries.

The development of the protected titles list was a major step forward—but with 3.4 million titles in the protected titles database, and few ways to search for information, it wasn’t easy for librarians to use.

“Searching for things was just a mess,” said Maderik. “They’d put up kind of a searchable interface on their website, but it was sort of basic. All you could do was look up an [International Standard Book Number] or search on a title, but that was basically it.”

At first, no one tried to rectify this problem. But at VMI, a seemingly unrelated project was in the works that would ultimately lead to a solution.

Maderik explained that in late 2015, as word spread of a possible renovation of Preston Library, former head librarian Col. Don Samdahl and his staff began to prepare for a major weeding of VMI’s collection, an effort that hadn’t been undertaken in the memory of anyone working there.

Successful weeding of a library’s

collection involves the analysis of titles to determine which ones are being checked out the most and which haven’t left the stacks in decades. To accomplish this, VMI looked at a software package from an outside vendor, but quickly determined that the price tag was too high. The sales presentation for the software, though, gave Maderik an idea.

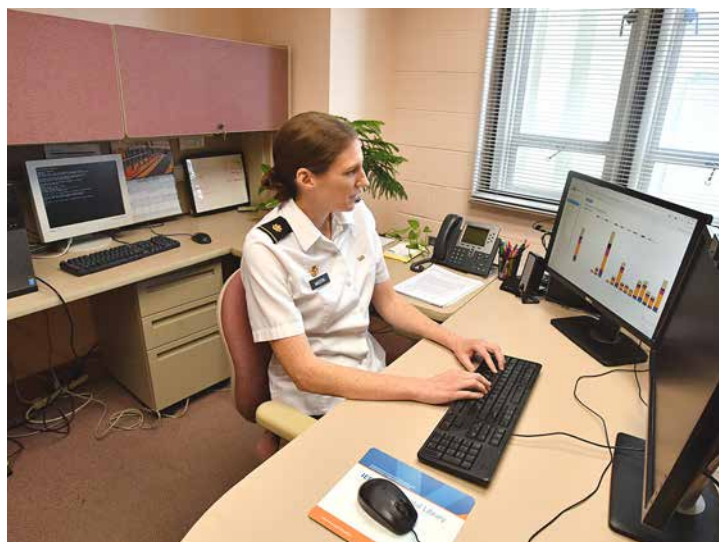
“When we saw what the software did, it didn’t look that complicated,” she explained. “I looked at it and said, ‘This is something I could probably build.’”

Within two days, Maderik had created Thistle CAT. The “thistle” is reminiscent of weeding and a reminder of Maderik’s first library job at the U.S. Department of Agriculture’s National Agricultural Library in Beltsville, Maryland, while “CAT” stands for collection analysis tool.

By early 2016, Preston Library was using Thistle CAT to analyze usage patterns in its collection. Approximately 18 months later, Maderik gave a presentation on Thistle CAT to a VIVA users group. “They immediately said, ‘We could use this for the protected titles list,’” she recalled.

Over the winter, Maderik completed the project. Now, users can easily find out how many libraries hold a particular book, when it was last checked out, and which of the eight VIVA libraries hold the most books in a given subject area based on the Library of Congress classification system.

And while Maderik is pleased with her work, she’s not ready to rest from her labors. Her next step will be to create another version of the tool for libraries using the Dewey Decimal System of classification. Working on her own time, she’s also developing a tool to analyze usage patterns statewide for ebooks, journal articles and databases so librarians can make cost-effective purchasing decisions. 🌿



Maj. Rachel Maderik looks over the software program she created to help college and university libraries across the commonwealth better manage their collections.—VMI Photo by Kelly Nye.

'It's a Great Way to Give Back'

Non-commissioning Cadets Spend FTX Engaging with the Community

By Chris Floyd

Spring Field Training Exercises rolled around with weather that belied its name, and while the threat of rain and snow forced many of the non-commissioning cadets to abandon their volunteer efforts over the weekend, not all of the helpers had to abandon their community service projects.

"Due to bad weather, there were a couple of canceled projects on Saturday and Monday," said Alex Hall '18, the cadet in charge of the FTX weekend. "Luckily, we were able to reschedule or provide alternate projects on these days in order to engage as many cadets as possible."

And some of the originally scheduled projects went off without a hitch.

On Saturday, April 7, Company D found itself in a residential area just outside of Lexington, helping members of Habitat for Humanity lay the foundation for a new house. Meanwhile Company H made its way to Lime Kiln, pitching in with other volunteers to get ready for the upcoming season.

As usual, all parties involved in the weekend activities found FTX invaluable.

"We count on FTX," said Brian Dearing, who has opened his house to adopted rats over the last few years and serves as president of Lime Kiln. "[Lime Kiln] is a volunteer organization, so it's nice to get some volunteer help from the Institute as well."

Carlee Anderson '18 was the CIC for the Lime Kiln project. A veteran of FTX weekend as a non-commissioning 1st Class cadet, she has been part of a wide variety of service efforts, ranging from painting



Cadets participating in non-commissioning FTX help clean up the grounds at the Lime Kiln Theater April 7.—VMI Photo by H. Lockwood McLaughlin.

to walking dogs. Each one of them, including the latest, has been a rewarding experience.

"It's a big deal," Anderson said. "For us non-commissioning cadets, it's a great way to give back. It's really neat how they find places to put us. You don't realize there are so many outlets in Lexington [needing volunteer help]."

"I think it's pretty important," added Oscar Lloyds '19, who led Company D in the work for Habitat for Humanity. "Sometimes [people] forget what it means to do service. At VMI, we don't lose sight of that. We came here to serve the country as citizen soldiers."

That is pretty much what FTX weekend is all about. The role of the citizen soldier is an important part of the VMI experience, and FTX in the spring allows those who will not be pursuing a career in the military the chance to stand with members of the community who need the support.

"At VMI, all cadets are instilled with the importance of service," Hall said. "Understanding the value of volunteering and giving back to the community is an important aspect of the VMI cadet and graduate."

"VMI cadets leave the projects with a feeling of pride and accomplishment, as well as a newfound relationship with the community," he continued.

The organizations that FTX serves are pleased with the work those cadets do, too.

Dearing said, "These guys are incredible. The commandant's office is very accommodating. It's a great deal." 🇺🇸



Cadets mix concrete at a Habitat for Humanity building site just outside of Lexington during FTX April 7.—VMI Photo by H. Lockwood McLaughlin.

'Possessing a High Sense of Public Service'

By Ashlie Walter

A group of 12 VMI cadets devoted their spring furlough to helping families in Texas rebuild from the devastation caused by Hurricane Harvey, a category 4 hurricane that hit the Gulf Coast last summer, damaging 203,000 homes and destroying 12,700.

Institute chaplain Col. Bob Phillips '87 and associate chaplain Maj. John Casper '04 led the group, which flew to Rockport, Texas, and worked as part of relief organization Samaritan's Purse.

"I was very surprised how well organized they were; it was like a well-oiled machine. All we had to do was get down there. They provided lodging, meals and it was all volunteers," Casper said.

They stayed in a local Rockport church and each morning a line of clean pickup trucks with large trailers full of tools would be lined up outside, ready to take volunteers to rebuilding sites.

The cadets worked on a little bit of everything, from painting and exterior work to installing drywall, along with groups from the U.S. Air Force Academy and Indiana's Huntington University.

"VMI's all about teaching cadets the importance of community service, it's in their mission statement, 'possessing a high sense of public service.' It didn't seem like a sacrifice since that's a part of the Corps," Nathan Mumford '19 said.

Casper noted that one of the interesting parts was watching the cadets interact with the families who were able to participate in the rebuilding. Some families could not participate because of work schedules, he said.

Mumford said the family he worked with—the Turrubiates—included four young children, their parents, and grandmother, who shared one house.

The youngest child, Rowdy Turrubiates, who celebrated his third birthday while the team was there, was passionate about helping out.

"There was one day, we had just repainted one of their sheds a bright blue. While we were painting all the trim white, he began repainting the shed door in white. We couldn't be mad because he was helping," Mumford said.

There is still much to rebuild, even across the street from some of the sites they visited. He noted the mobile homes received the brunt of the damage but some homes showed paint stripped away. However, some areas did show where Samaritan's Purse had left its mark.

"There was a wall with graffiti. What struck me was it was about 'the hurricane came but will not beat us down.' The way they were able to help each other...



VMI cadets pose with the Turrubiates family in Rockport, Texas, after helping to rebuild their home over spring furlough.—Photo courtesy of Aaliyah Lyttle '18.

you could see that," Mumford said, adding that he plans to use the skills he learned in Texas—of working with people of different backgrounds—in his future in the Army's medical corps.

"You are going out to interact with different people from different walks of life. Texas is a whole different culture entirely. The community we were in was mostly Hispanic," Mumford said.

The rebuilding did have some setbacks. While they were there, a tornado tore through a neighborhood that was recently rebuilt from the hurricane damage.

"The work we were called down to do, this isn't a one-

time thing. This is a call to all of us to realize, to think outside of our own bubble," Mumford said. ❄



Anglea Li '21 prepares siding to install on the home of Debbie Flores Saldana in Rockport, Texas for Samaritan's Purse.—Photo courtesy of Samaritan's Purse.

A Passage to Africa

Institute Brass Finds Narrow Streets, Warm Hearts in Morocco

By Mary Price

In existence since 1989, the Institute Brass is a well-traveled group, having played in nations as far afield as China and Japan. But up until this year, the group and its director, Col. John Brodie, had never been to Africa.

All that changed over spring furlough this year when six members of the group plus Brodie traveled to Morocco, where they played six times in nine days and put 1,500 miles on their rented van.

Brodie explained that the idea for a trip to Morocco had first come about several years ago, right after the Institute Brass had returned from a trip to France. He'd run into Dr. Mohamed Taifi, professor of modern languages and cultures, who suggested that if Brodie, a fluent French speaker, wanted to travel to another French-speaking country, he could try Morocco, a former French colony.

But while he knew language would be no issue, Brodie wasn't sure about the culture. He soon found out, though, that he needn't have worried.

"It's a Muslim country, and I didn't know what to expect," Brodie stated. I didn't know if we'd get funny looks, being Americans, but we didn't get any of that. I felt safe everywhere we went."

John Dickenson '20, a trumpet player with the group, noted that he felt not only safe but warmly welcomed.

"Out of all of the places I've been, I think Morocco was the place where people would say 'hello' to you most often," said Dickenson. "You would say 'hello' and they would smile and help you out if you needed it."

That help, he added, was essential as the group traveled in its van and navigated ancient, narrow streets built well before the advent of the automobile.

Abby Dimirack '20, who also plays the trumpet, echoed that feeling of warmth—and shared that her impression of the people of Morocco didn't fit at all with American stereotypes of radical Muslims.



Members of the Institute Brass pose for a photo with embassy staff outside the U.S. Embassy in Rabat, Morocco.—Photo courtesy of Col. John Brodie.

"The Muslims are one of the most devout and friendly people I've met and I was really surprised by that, by how continuous and faithful they are to what they do," she observed. "They love sharing their religion and letting you come into the mosque."

Dimirack also found time to visit another country and another continent, taking the ferry across the Strait of Gibraltar to Tarifa, Spain. Although her father's career in the Navy took the family to Asia and Australia when she was growing up, Dimirack had

visited the 12th-largest mosque in the world, in Casablanca, and they also saw the tallest minaret in the world.

The six gigs the group played varied in venue from a cultural center in a slum area of Casablanca, where they found themselves playing alongside a group of local drummers, to the U.S. Embassy in Rabat, where they played for the American staff working there.

"Music-wise, I think my favorite part was playing in the U.S. Embassy," said Dimirack. "For me personally, it was cool to play for

the Marines there because I'm in the Marine Corps ROTC here. It was special to me in that sense, to bring back a piece of home for them."

For his part, Dickenson discovered that music is, indeed the universal language. At the cultural center in Casablanca, the group decided to go with popular music because of the age



The Institute Brass plays for the staff at the U.S. Embassy in Rabat, Morocco.—Photo courtesy of Col. John Brodie.

never been to Europe before she arrived in Tarifa.

There, she had the unique experience to stand at the intersection of two countries, two cultures, and two continents. "[Tarifa is] where the Mediterranean [Sea] and the Atlantic Ocean meet," she explained. "You can see both and stand in both oceans at the same time."

While in Morocco, members of the Institute Brass

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VMI Institute Report

Stepping Off in the Big Apple

VMI Regimental Band, Pipe Band, Color Guard Return to New York St. Patrick's Day Parade

For the first time in approximately 15 years, the VMI Regimental Band made an appearance in the St. Patrick's Day parade in New York City, held Saturday, March 17.

The band's long absence from the historic parade had been a factor of circumstance, not choice, as VMI's spring furlough had typically taken place over the St. Patrick's Day holiday. This

year, though, spring furlough didn't take place until later in March, leaving Col. John Brodie, director of the Regimental Band, with an opportunity to return to the Big Apple.

It was the first time since 2005 that the band had marched in the New York parade, and the eighth time in Brodie's nearly 30-year tenure as director.

"It's the biggest St. Patrick's parade in the world, or at least they claim it to be," said Brodie of the parade, which was televised locally and streamed around the world.

And with a little help from three alumni—Army Capt. Dermot Gavin '03, William "Liam" Murphy III '65 and Jim Spelman Jr. '85—the Regimental Band, plus the Pipe Band and the Color Guard, were able



The Regimental Band marches past St. Thomas Church on Fifth Ave. in New York City during the St. Patrick's Day parade March 17.—VMI Alumni Agencies Photo by Micalyn Miller.



Cadets pass the reviewing stand of the St. Patrick's Day parade in New York City.—VMI Alumni Agencies Photo by Micalyn Miller.

to secure a prime spot as the first band in the parade. The VMI entourage marched as the band of the grand marshal Loretta Brenna Glucksman, behind the 1st battalion, 69th infantry of New York.

There to see them step off was Brig. Gen. Jeffrey G. Smith Jr. '79, dean of the faculty—and Smith was also on hand to see the VMI group receive the trophy for the most outstanding military band.

The group had arrived in New York on Friday, March 16, and had just enough time to check into a hotel in Newark, New Jersey, before heading to O'Lunney's Pub on 45th Street for a gathering with the New York City-Long Island Chapter of the VMI Alumni Association. There to welcome Brodie and the cadets was Thom Brashears '95, chief operating officer of the Alumni Association.

After the 30-block parade was over, the 125 cadets on the trip had free time to explore New York. Two of those cadets, Nathanael Bailey '19 and Jake Johnson '19, spent their afternoon in the vicinity of Times Square, eating pizza, exploring the shops along 5th Avenue, and stopping by Rockefeller Center to see the outdoor ice rink. Johnson, a veteran of many band trips, noted that this one stood out because he hadn't been to New York City since he was 4 years old.

"It was slightly overwhelming at first, especially for someone from a small town," said Johnson, a native of Smithfield, Virginia.

Also glad he'd made the trip was Lane Kieler '19, who noted that the St. Patrick's Day parade was "pretty relaxed" in contrast to the 2017 Rose Bowl Parade in Pasadena, California, another event the Regimental Band has participated in over the past few years. "For New York, it was a lot less people and a little bit less televised," he stated.

"It was just a good experience overall, being able to go out and meet some alumni and make connections," Lane continued. "It was pretty cool to represent the school as well."
— Mary Price

of the audience, which was mostly children and teenagers.

"We played a lot more kid-type stuff because that would fit with the crowd better than the fugue in G minor," he commented. "They really enjoyed a Justin Timberlake song that we do."

Incredibly, the group also connected with Taifi, the long-ago inspiration for the whole trip. Brodie explained that Taifi and his wife,

who own a home outside Fez, were visiting Morocco over the spring furlough and invited Brodie and his musicians to come have lunch with them.

"He and his wife were there and they had this beautiful home out in the country," Brodie explained. "They had couscous and mint tea—he has quail and chickens."

Brodie also noted that they'd met an alumnus at the U.S. Embassy. "It doesn't matter

where you go, you run into [VMI] people everywhere," he commented.

And after nearly 30 years of traveling with cadet musicians, Brodie is still eager for more. "Already I'm thinking about where to go next year."

In addition to Dickenson and Dimirack, other cadets traveling to Morocco were Timothy Stallings '20, MacGregor Baxter '20, Mackenzie Haley '20, and Andrew Wang '20. 🍀

a third of the size of Maine—but its layers upon layers of cultural and religious history meant that the travelers had to move at a brisk pace to pack in all that they wanted to see.

Among the sites the group took in were the old city of Jerusalem, where Judaism, Christianity, and Islam all claim a place; Masada, the site of King Herod's fortress; the Golan Heights, an area that Israel annexed from Syria in 1981; and the Dead Sea, where the extreme salinity of the water makes swimmers float with ease. Other stops included Acre, a battleground city for medieval Crusaders; the ancient Roman city of Caesarea; and Tel Aviv, the second-largest city in Israel.

The group kicked off its stay with three days exploring Jerusalem. On Sunday, March 25, which was Palm Sunday, the group traveled the Via Dolorosa, or way of sorrow, which is believed to be the path walked by Christ en route to the crucifixion, and they also visited the Church of the Holy Sepulchre, which is built on the traditional site of the crucifixion.

"That was a very powerful and moving experience," said Grant Fudge '18. "I was kind of speechless going through there."

But Jerusalem, like all ancient cities, looks to the present as much as the past. While in the city, the cadets and faculty members met with representatives of Combatants for Peace, a group trying to resolve the

Israeli-Palestinian conflict simmering ever since the nation of Israel was established in 1948.

"It is a very polarized situation over there, so to see these groups that were completely opposite working together was interesting," said Alexandra Hill '18. "I didn't expect that there was anything like that over there."

Johnson explained that the meeting with Combatants for Peace exposed cadets to a different perspective, that of the native Palestinians. "While you're in Israel, it's hard to get access to the Palestinian side," he noted. Thanks to a State Department travel advisory, the group was not allowed to visit the West Bank and Gaza.



Cadets tour Mt. Herzl military cemetery the site of Israel's national cemetery during the spring furlough Olmsted trip.—Photo courtesy of Maj. Houston Johnson.

The group had another reminder of Israel's fragile peace when they visited the Golan Heights. By a chance encounter, they were able to talk to two United Nations peacekeepers, one from Northern Ireland and the other from New Zealand. The two were charged with watching over the border with Syria to ensure treaties are being observed.

"The situation in Syria and Israel has garnered a lot of international attention," said Fudge. "Just to see a lot of different nationalities represented there really speaks to how important the region is in the world."

After learning about the region's conflicts, a trip to the Dead Sea provided an opportunity for some much-needed fun and relaxation. Fudge, who



Cadets and faculty members pose at a Jerusalem overlook.—Photo courtesy of Maj. Houston Johnson.

admitted that floating is a skill he's struggled to master, found not having to fight gravity a freeing experience.

"I was actually kind of skeptical at first, 'How can you float so easily?' because every time I'm in water, I sink like a rock," he said. "But getting in the Dead Sea, you just float. That was one of my favorite parts of the trip."

Hill said that while the language barrier was somewhat of a challenge, as Hebrew and Arabic are the most common languages spoken and not everyone knows English, she felt extremely safe while traveling in Israel. "I

was actually really scared about going to the Middle East," said Hill. "I was hesitant."

Thankfully, she soon found that there was nothing to be afraid of.

"It was so safe over there," said Hill. "Tel Aviv, Jerusalem—you wouldn't imagine how westernized these places are."

Both Hill and Fudge said they would recommend the Olmsted trip highly to other cadets.

"Just being in a culture, you understand it so much more," said Hill. "If you're seeking to travel, if you're seeking an adventure like that, you shouldn't be afraid. You should just go for it."

Fudge emphasized the personal growth that comes from foreign travel.

"It's an invaluable experience to go overseas and get put out of your comfort zone—understand other people, other cultures, and other ways of life," he commented. "It really puts life in perspective and allows you to be more objective ... It opens your horizons and makes you want to learn more."

Also traveling on this year's Olmsted trip were Brian Macaluso-Stafford '18, Ian Horkan '18, Tyler Krug '18, Tripp Fitch '18, Christian Cartegena '18, Samantha Shepherd '18, Maj. Jochen Arndt, and Maj. John Matsui. ❁

Elizabeth D. Camp Becomes Honorary Alumna

By Scott Belliveau '83

Elizabeth D. "Lee" Camp was named an honorary alumna of the Institute by the VMI Alumni Association board of directors in a resolution passed Jan. 19.

She joins a group of 27 people whom the directors deemed "worthy of such distinction, either by virtue of special contributions to the Institute or for other reasons." Those who have been so honored include long-time professors John Barrett, Mike E. "Doc" Monsour, and George Piegari; legendary football coach John McKenna; former Secretary of the Army John O. Marsh; and current Regimental Band Director Col. John A. Brodie. She also is the second woman to receive the honor. The first was Mary Moody Northen, who received the honor in 1965.

The Alumni Association recognized Camp, widow of the late Paul D. Camp III, son of Paul D. Camp Jr. '24, for "her exceptional devotion to the Institute" as demonstrated by "avid service" on the VMI Board of Visitors from 2005 to 2013 and the VMI Foundation Board of Trustees from 2014 to the present, as well as for her generous financial support of VMI.

In the citation, the directors focused on her service as the chairwoman of the Board of Visitors' academic affairs committee. The first non-graduate of VMI and first woman to hold this position, she helped revise the Faculty Handbook, coordinated salary rates for incoming faculty at VMI, and provided "significant insight" into the revitalization of VMI's academic program. In this position, she applied her experience as an administrator and chairwoman of the history department at St. Christopher's School in Richmond, Virginia.

On the board of trustees, Mrs. Camp is a member of the property management and gift acceptance committee and is the chairwoman of the corporation and foundation relations subcommittee.

"Many of us at the VMI Foundation have known and worked with Lee for many years, well before she joined the Board of Visitors," said Warren J. "Buddy" Bryan '71, chief operating officer of the VMI Foundation. "We know her as someone who is thoroughly dedicated to VMI and believes deeply in the value of the Institute to Virginia and the country. So, to us, this is a well-earned honor."



Meade B. King '85, chief operating officer of the VMI Keydet Club, congratulates Elizabeth D. Camp on being designated an honorary alumna. VMI Alumni Association president Robert P. Louthan '82 (center right) presented the citation.—VMI Alumni Agencies Photo by Micalyn Miller.

Asked about the honor, which she described as "astonishing and fabulous," Camp said: "My life has been so enriched by my association with VMI—from my cousin Donald Blanchard '67 who died in his rat year to my daughter, Elizabeth Camp Hanson, who was a math professor before and after the women came, to the many, many Camp family members who are alumni. The loyalty, courtesy, kindness, honesty and character of all I have worked with on post and off has been superb. I am so proud to be an official member of that great collection of men and women who are VMI's alumni."

According to Robert P. Louthan '82, president of the VMI Alumni Association, "Lee Camp has been an avid supporter of VMI for many decades, and she has served it with enthusiasm and distinction. Every time we have asked her to do something, such as be a member of the search committee for the first Agencies CEO, she has answered the call immediately and joyfully. There is no doubt that VMI is a stronger college thanks to what she has done as a member of the Board of Visitors, a trustee of the Foundation, and a staunch friend and supporter of the Institute." ❁

ATHLETICS

Water Polo

The VMI water polo team spent Spring Furlough week in California, and the Keydets returned home with a 4-1 record on the trip and the Metro Atlantic Athletic Conference Offensive Player of the Week. For her heroics on the West Coast, Shelby Barkley '18 earned



Rebecca Serrano '18 competes against George Washington University during the March 17 match in Clark King pool.—Photo courtesy of VMI Athletic Communications.

the honor for the third time this season. In the five games, Barkley tallied 21 goals, including seven in a 16-10 victory over La Verne, tying the school record for goals in a game. Barkley, who has 92 goals for the year, is just one shy of the VMI record for goals in a season.

The Keydets returned to MAAC play April 7 and 8 for four conference tilts, winning three and solidifying their chances of reaching the conference tournament. Only four teams earn spots in the

tournament field, and at deadline, VMI held the fourth spot with a 6-5 league record, just ahead of Villanova University. VMI, now 18-9 overall, squared off with Villanova as part of a regular-season finale of three games in Philadelphia, Pennsylvania, April 14 and 15.

Barkley, Sarah Dolitsky '19, and Natalie Rivas '18 all tallied two goals in a 10-4 victory over La Salle University, which followed a 13-9 loss to conference leader Wagner College.

Against Iona College, on Sunday, the Keydets pelted the Gaels with 30 shots on goal and rallied from a two-goal deficit with just over two minutes remaining to force over-

time. VMI scored early in the extra session and held on for the 13-12 victory. Barkley once again led the Keydets, netting four goals, while Rivas and Emma Perez '20 notched three and two goals, respectively.

VMI closed out the weekend in New York with an 18-10 win over St. Francis College, Brooklyn. Dolitsky led the way with a career-high six goals, and Barkley added four more to her season total. Rebecca Serrano '18 chipped in with three tallies.

Lacrosse

The VMI lacrosse team won its second game of the season, scoring an 8-3 victory over Hampton University Saturday, March 31, in Lexington. The victory was the third straight of the Keydets over

the Pirates, and VMI stands 2-7 overall, with four games remaining in the regular season. Wesley Sanders '18, John Daniel '20, and Ryan Perouty '21 all tallied for goals in the win.

Track and Field

The Keydets competed in the Gamecock Invitational in Columbia, South Carolina, April 7, and posted a number of impressive performances at the meet. Leading the way was Donovan Walton '18, who finished second in the javelin throw with a toss of 162 feet, 7 inches. Jahanzib Shahbaz '20 placed fourth in the 1,500-meter run with a time of 3 minutes, 56.68 seconds, and Josh Willard '18 placed eighth in the

same event. VMI scored a pair of fifth-place finishes in the pole vault, with Catrena Schumacher '18 clearing 9-2 1/4 in the women's event and Andrew Arlint '19 reaching 13-5 1/4 in the men's competition. To round out the Keydet effort, Bethany King '18 placed seventh in the 1,500, and Desmond Weinberg-Jones '18 finished 10th in the 400-meter hurdles.

Baseball

After a hot start to April, winning three of their first four games in the month, the Keydets cooled off a bit, dropping three out of four to East Tennessee State University in Johnson City, Tennessee. VMI did eke out a victory in the series opener Friday, April 6, outslugging the Bucs, 8-7. Will Malbon '18 did the bulk of the damage for VMI, going

3-for-5 at the plate with two home runs, including a grand slam that gave the Keydets an early 5-0 lead. ETSU battled back to cut the lead to one in the eighth inning, but Nathan Eaton '19 retired the last four batters he faced to record his first career save. Eaton also had two hits at the plate, and Matt Dunlevy '18 chipped in with a pair of hits. 🍀

Bass Fishing *continued from page 1*

tournament and several others had to be rescued. The weather was so bad that 110 boats didn't catch a single keeper on the first day."

Amidst the challenging weather, the largest catch of the team over the two-day competition was from Wyatt Novak—an impressive 4 1/2-pound largemouth.

Competing at this high level was a milestone for members of the club, which emerged last spring when Schultz asked fellow

cadets if they would be interested in starting a bass fishing team at the Institute.

"I decided it was the perfect time to start. I was only a fourth classman, so I knew I had time to mold the club," recounted Schultz. "I can't believe how quickly it fired up."

The new club gained more steam when Army ROTC instructor Sgt. 1st Class Clifton Sanders agreed to be faculty adviser. After generating

a budget and accumulating a dozen sponsors, members were able to conduct regular meetings and travel for competitions. The club currently has 53 cadets on its roster with a range of fishing experience.

"There are people in the club that have been fishing tournaments for years. There are people in the club that just like to go out with a bobber, worm, and a pond and catch fish all day, so we have a little bit of everything," said Schultz.

Within the larger club roster is a core group of cadets dedicated to the sport of bass fishing. Those cadets have the opportunity to travel and compete, representing the Institute in bass fishing tournaments throughout the region.

With practice being held every Sunday, many club members are able to get out and fish the local waters, including boat fishing on the James and Maury rivers. This is also a time for cadets to conduct boat maintenance and



Wyatt Novak '20 shows off two bass caught during the College Open tournament held on Kentucky Lake.—Photo courtesy of Jacob Novak '18.

to rig up fishing rods. Occasionally, cadets have the opportunity to practice fishing at Smith Mountain Lake, where cadets will take part in future competitions.

"This is our home lake and we have very high expectations," said Jacob Novak. "We have been practicing on this lake since late January and have been putting together a better strategy each time."

Club members are using that time on the water to hone their skills, in addition to developing the focus necessary to succeed in the sport.

"If you're not on it mentally, if you're not in it for those eight to ten hours when you're out there, you are not going to do well because that bite can come at any time and if you're not ready for it, chances are you're not going to get that fish in the boat," said Schultz. "You really have to be locked in when you're tournament fishing."

An additional challenge for cadets looking to fish competitively involves the limited opportunity to pre-fish or practice amidst their busy schedules. Despite this, they have found a way to make it work anyway.

"Due to limited time on the water, we usually try to do as much research about the lake as possible," said Jacob Novak about Smith Mountain Lake. "We check daily fishing reports and try to mimic fishing patterns used by tournament winners in the past."

In addition to time constraints, the newly formed club currently has fewer resources than the more developed programs against whom they compete. The club currently uses and competes with privately owned boats, and members have been able to use alumni-owned property when setting up camp at Smith Mountain Lake.

"Everyone is chipping in and doing a lot of the things themselves to make this team work and I think that's what's awesome," said Schultz. "We don't have anything handed to us. We have to work for everything. When we do succeed, it just makes it that much better." ❄



New Cadet Military Training

Fourth Class cadets participate in exercises across post during the New Cadet Military Training sessions held in March. The members of that group received instruction in a number of areas, including weapons, first aid, survival and land navigation, at various venues around post and at McKethan Park. For the first time, the Corps Physical Training Facility was utilized during NCMT weekend, serving as an ideal location as cadets learned to dismantle and reassemble weapons and received safety training. "It was an excellent training site for our purposes," said Sgt. 1st Class Christopher Bean, the operations and training sergeant with the Commandant's Office.—VMI Photos by Chris Floyd.





National Security Simulation

Approximately 30 students from Bard College, Brown University, Connecticut College, Dickinson College, Naval War College, U.S. Military Academy, U.S. Naval Academy, U.S. Air Force Academy, Vassar College, Washington and Lee University, and VMI attended the National Security Simulation in Marshall Hall March 11. Students played the part of national security council members, attending a deputies' meeting with Gen. J.H. Binford Peay III '62, who played the part of national security adviser. Participants held a mock press conference, answering questions from faculty advisers acting as members of the press.—VMI Photos by Kelly Nye.



Fine Arts, Civil Engineering Collaboration

Col. Jay Sullivan, professor of mechanical engineering, and Maj. Julie Brown, assistant professor of English, rhetoric, and humanistic studies, employ portable 3D scanning equipment purchased with a grant from the Jackson-Hope Fund. The equipment scans the cadet's faces and creates a digital image, which cadets in Brown's visual arts course are using to draw self portraits.—VMI Photos by H. Lockwood McLaughlin.

VMI, W&L Partnership Develops Ultra-Strong Concrete

By Mary Price

In VMI's civil and environmental engineering lab, three cadets are working alongside students from Washington and Lee University to build a better bridge beam.

The ongoing collaboration had its roots years ago, when Lt. Col. Matt Swenty, associate professor of civil and environmental engineering, was earning his doctorate at Virginia Tech and met Dr. Kacie D'Alessandro. The two remained

in touch after leaving graduate school and both later took jobs in Lexington, where D'Alessandro is now assistant professor of physics and engineering at W&L.

Now, D'Alessandro is bringing her expertise in high-performance concrete and 3D imaging to VMI's laboratory, where the two groups of students are working together to test a way of strengthening concrete beams with an extra layer of higher-strength concrete with both a steel rebar and steel fibers embedded in it.

"The idea is that [D'Alessandro is] doing some of the material characterizations and we're doing some of the larger beam tests," said Swenty.

Swenty explained that while there is an ultra-high-performance concrete on the market, it's not commonly used for highway and bridge construction in the United States because it's a very expensive, proprietary product that has to be imported from Canada.

Seeking a way around this problem, Alexander Alvarado '17 worked in the lab last year to replicate this product—and he created a viable mix that could be applied as a laminate to regular concrete beams. Graduation, though, ended Alvarado's experiment just as he was getting to the point of having something to test. This year, Jon Kaiser '18, Devon Zappolo '18, and Paul Essigman '18 have picked up the work where Alvarado left off.



Devon Zappolo '18 and Jon Kaiser '18 prepare to test a concrete beam in a civil and environmental engineering lab.—VMI Photo by Mary Price.

"What we're trying to do is reinforce [a normal concrete beam] by casting higher-strength concrete on the outside of it," explained Kaiser. "Within this higher-strength concrete is steel fibers and there's also a piece of [iron] rebar on the side that runs down the center."



Paul Essigman '18 and Lt. Col. Matt Swenty look over data collected during concrete beam testing in a civil and environmental engineering lab.—VMI Photo by Mary Price.

Tests currently underway in the lab, Kaiser and Swenty explained, include comparing the concrete beam that's been reinforced with a higher strength concrete to one that merely has a steel rebar inside it, and using 3D imaging from W&L's lab to see if the smoothness or roughness of the concrete affects its ability to bond well.

Going forward, bonding capacity will be key. Most concretes do not bond well, Swenty noted,

but Alvarado's creation does.

"This newer mix has steel fibers inside, and a much different matrix—the crystalline structure has a different matrix," he commented. "It's been shown to bond better, but we're not sure how good 'better' is."

Testing the reinforced beams means, of course, putting pressure on them. The three cadets, all of whom are doing an independent study with Swenty, use a hydraulic press to apply varying degrees of force, and the results are sent to a computer which displays them in a tabular form.

"The pressure kind of varies," said Zappolo. It starts off around 5,000 [pounds per square inch]. "We're trying to find out if there's a way to use this in the real world."

Swenty noted that if one problem can be overcome, there's a good likelihood that their product could be used in the real world.

"Can we bond two concretes together?" he asked. "If so, there are possibilities to use this for either retrofitting or just building beams in a different manner with new materials."

Also this spring, a group of civil and environmental engineering cadets has been surveying and creating a topographic map for a new pavilion at the recently rebuilt Waddell Elementary School in Lexington. This site work is necessary before VMI's chapter of the Timber Framers can construct the pavilion next spring. 🌲

Making It Real

New Psychology Lab Courses and Space Enable Hands-on Learning

By Mary Price

Over the past year and a half, cadets in the Department of Psychology have had the chance to learn in a brand-new space outfitted with computers that can demonstrate instructional points by monitoring the cadets' own biological processes.

The 30-workstation lab, on the third floor of Carroll Hall, is part of the recent restructuring of the psychology department's curriculum

to put more emphasis on hands-on science and thus provide a more empirical learning experience.

Long considered a discipline at the intersection of art and science, the Department of Psychology for many years offered two options to cadets: earning a bachelor of arts degree or a bachelor of science degree.

Beginning with the 2014-15 academic year, the bachelor of arts option was dropped and the bachelor of science degree was restructured with new requirements, including the completion of three laboratory-based courses. Other changes have included the addition of an introduction to research methods class in the 3rd Class year and an in-house statistics class, statistics for the behavioral sciences. The Class of 2018 will be the first class to graduate under the new requirements.

"One of the resolutions we had in going [bachelor of science] only was to increase the number of lab experiences," explained Col. James Gire, department



Col. Keith Kline, professor of psychology, and Jacob Tomlinson '18 release the pendulums for cadet volunteers to visually track while the BIOPAC system they are attached to measures their electrooculography or EOG.—VMI Photo by Kelly Nye.



Jung Lee '18 demonstrates the BIOPAC system in the computer lab of Carroll Hall. The system records eye movement while he visually tracks a swinging pendulum.—VMI Photo by Kelly Nye.

head, noting that at one time, the department offered no labs at all.

Over the past few years, more and more lab courses have been added, and now there are seven: biological psychology, health psychology, abnormal psychology, developmental psychology, personality psychology, positive psychology, and cognitive psychology.

The new lab space is equipped with computers which are designed to interact with a variety of sensors capable of measuring factors such as heart rate and galvanic skin response, which is a change in the electrical resistance of the skin caused

by emotional stress. This allows cadets to do a bit of research—with themselves as the subjects.

For example, when Col. Scott Frein, professor of psychology, has been teaching in the lab, he's had cadets put on headsets that measure electrical currents in the brain and thus show how well they are focusing and paying attention.

"As they learn to focus their attention more, the programs do different things," said Frein. "If they are really focused, the movie keeps playing. If they are really kind of scattered, the movie stops."

Last fall, Frein also had cadets wear concussion goggles, which allow wearers to see the world through the eyes of someone who has recently suffered a concussion.

"What I do is have the [cadets] do two tasks that are pretty much well matched for difficulty," he explained. "They do one with the goggles on and the other with the goggles off."

It's Frein's way of bringing classroom lessons to life. "The idea of the lab is that in cognition we've talked about brain injuries, but in the lab we can actually mimic some of what we've been talking about."

It's this kind of experience, members of the psychology faculty believe, that can help cadets connect on a deeper level with what they are learning in the classroom.

"Without the labs, teaching class remains at a fairly superficial level saying, 'This is how research is done,'" Gire stated. "Because of the labs, we've been able for them to have a more experiential component."

Funding for the new lab space came from a variety of sources, among them the Equipment Trust Fund, the Dean's Discretionary Fund, the Class of '43 Academic Excellence Endowment, the Nancy H. and Bruce C. Gottwald '54 Academic Excellence Endowment through the Jackson-Hope Fund, and the Bruce Barclay Cameron Foundation, in honor of Elmon Gray '46 and George Ramsey '48B. 🦋

Commissioning Class to be Largest in Recent History

By Ashlie Walter

Commissioning numbers are up across the board for ROTC with the Air Force expecting almost a triple jump in its commissioning class size.

Last year, 15 cadets commissioned into the Air Force, according to Col. Steven Biggs, commander of the Air Force ROTC at VMI. Not including cadets needing summer classes, the commissioning class of 2018 will have 42 cadets, the largest group in recent history.

"It makes me feel good, as a commander. The previous commander and his staff laid the foundation," said Biggs.

The increase is largely due to a programming change from the U.S. Air Force headquarters, which has allowed cadets to join the Air Force ROTC program later than the previously required three years.

VMI was fortunate in the fact that cadets are required to do all four years of ROTC, regardless of a commission, which made it easy for them to join for just one year, he said.

"They still had to cover the other curriculums, like cramming in four years of programming. The beauty of VMI is all cadets are required to have four years of ROTC. They are already caught up, and very easy for us to accept their training already," he said.

However, after this year, the one- or two-year program will be done. Cadets with high qualifications who still want to join the Air Force by their 2nd or 1st Class year may be admitted on a case-by-case basis.

The temporary program was instituted when the Air Force Officer Training School reached capacity and couldn't take any more people. That's when the ROTC programs stepped in to "widen the pool and fill that potential," Biggs said.

Next year's commissioning class will be fairly large as well with two years from now being closer to average, he said.

Meanwhile, Army ROTC is also on track to have one of the largest commissioning classes, at 130 cadets.



Army ROTC cadets review procedure during Field Training Exercises at Fort Pickett April 7.—Photo courtesy of Army ROTC.

"There's a lot of interest in terms of commissioning," said Army ROTC commanding officer Col. Michael Wawrzyniak. "Currently, there's no constraint on numbers, as long as we are able to keep the quality high and cadets physically and academically able to do what we need them to do."

The Army asks for a certain number of officers each year and VMI has been able to often exceed that mission. This year's mission was 125 officers in the Army.

The last five years have shown a steady increase in commissioning numbers for the Army. With only 22 cadets commissioning in 1997, the recent numbers show the change in direction Army ROTC has taken over the past two decades.

In addition, this year's class will include 46 Distinguished Military Graduates—about a third of the class. The Army ranks all graduates intending to commission across the country, and those in the top 20 percent are given the honor of Distinguished Military Graduate.

Wawrzyniak said scholarships can be a big incentive for cadets to join the Army. Currently, about 80 percent of the 2018 commissioning class is receiving some form of a scholarship, either for all four years or less.

Another recruitment tool is cadets learning about the Army's job requirements through other cadets.

"Everybody's able to talk about what goes on, as well as the system here. Cadets are in touch with cadets out in the real world or they hear from their dyke about it" he said.

The VMI Class of 2018 is one of the largest in recent years, and the increase will correlate with the increase in commissions. The class of 2018 is expected to graduate about 380 cadets, more than 200 of whom will earn commissions.

According to Cmdr. Dan Turbeville, Naval ROTC executive officer, the Naval commissioning class is the largest since 1991, at 62 cadets. For Naval ROTC, the numbers are a continuation of a recent trend of small but steady increases over the past five years.

Commissioning ceremonies for the class of 2018 will begin at 9 a.m. May 15 in Cameron Hall. 🇺🇸



Naval ROTC cadets and midshipmen walk up the brow aboard the aircraft carrier USS George H.W. Bush (CVN 77) for a tour in Norfolk, Virginia.—U.S. Navy Photo by Mass Communication Specialist 3rd Class Joe Boggio.



Cadets Join with VT Corps in Remembrance

VMI cadets formed up with the Virginia Tech Corps of Cadets Sunday, April 15, to honor the memory of Cadet Matthew La Porte, who was among the 32 killed in the April 16, 2007, attacks on the Virginia Tech campus. After presenting a wreath symbolizing the unity of the two corps, Regimental Commander Finn Swenson '18 spoke to the cadets assembled and recalled the actions of La Porte. "As the shooter was coming into a classroom, Cadet Matthew La Porte of the Virginia Tech Corps of Cadets seized the opportunity to charge at the shooter," said Swenson. "This act of courage enabled others to get away and saved lives that could have been lost that day." The group, organized by the VMI running club, participated in the 3.2 for 32 Run in Remembrance, laid gifts at Matthew La Porte's memorial stone, and joined their peers for other activities throughout the weekend.—VMI Photos by Stirling Martin '20.

