

The Puzzle of Parkinson's Biology Head, Cadets Explore Causes and Cures for this Neurological Condition

By Mary Price

Research currently underway in the VMI biology department could someday yield promising treatments for Parkinson's disease, a neurological condition that causes a deterioration in motor skills and affects 7 million people worldwide.

Earlier this year, Col. James "Jim" Turner '65, head of the biology department, began studying the relationship between the hormone estrogen and nitric oxide, a gas that drives blood vessels to expand. Turner used zebrafish as his study subjects, as the fish reproduce rapidly in a laboratory setting.

In his early research, Turner found that fish deprived of estrogen developed arrhythmias and other heart problems, a finding that came as no surprise as scientists have known for decades that high levels of estrogen protect pre-menopausal women from heart attacks.

The research into fish, estrogen, and nitric oxide was still ongoing when Turner



Connor Culley '16 (left) and Derek Emerson '16 transfer zebrafish to a test solution. – VMI Photo by H. Lockwood McLaughlin.

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Chief of Staff, Combat Veteran Reflects on 27-Year Army Career

By Sherri Tombarge

On Wednesday, Nov. 11, Col. Jamie Inman '86 won't be leading an honors forum as he does most Wednesdays this semester. Instead he'll be observing Veterans Day and Founders Day with the rest of the VMI community, reflecting on the service of many and the mission of the Institute.

As chief of staff, Inman is aware of most everything that goes on. Chair of the Institute Planning Committee, he touches nearly everything that is reviewed or approved by the superintendent. Four administrative offices report directly to him. And cadets require his official attention when they're having trouble.

For Inman, it feels "wonderful" to be back at VMI, to have this additional opportunity to serve his alma mater after a career

of service in the Army. That career began soon after graduation, when Inman, as a lieutenant in the artillery, worked with Pershing nuclear missiles in Germany. As he moved up the ranks, Inman served in a range of positions – in the U.S. Army Cadet Command, as part of the military delegation to NATO, and deployed to war zones in Iraq and Afghanistan.

In Iraq he was wounded when the enemy detonated a rigged 155 mm howitzer projectile just as his Humvee drove past. It occurred the day before Thanksgiving 2005. Inman doesn't recall any fear when he felt the crack like a baseball bat over his ankles.

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went through the papers on his desk one day – and discovered a journal article linking estrogen to the regulation of nitric oxide.

“Both estrogen and nitric oxide have also been called protecting molecules in the brain,” explained Turner, who is also the Beverly M. Read ’41 Institute Professor of Arts and Sciences. His curiosity sparked, Turner then decided to see what would happen if the fish were deprived of nitric oxide.

What happened was a tankful of fish swimming on their sides, or in a corkscrew pattern – displaying motor irregularities eerily reminiscent of Parkinson’s disease, symptoms of which can include balance problems, tremors, and difficulty walking. Then, Turner found a second journal article, this one having to do with zebrafish as a new animal model for movement disorders.

“Oh my gosh, I think there’s a connection between nitric oxide, motor dysfunction, and Parkinson’s disease,” Turner recalled thinking at the time. “It’s hard to compare a fish with humans, but when you can think of the neurological problems of movement and balance, they were all there.”

Summer research seemed the logical next step. Last summer, Turner and four cadets – John McKelvey ’16, Brandon Barbery ’18, Luke Johnson ’17, and Vania Murcia ’17 – spent much time in the lab trying to induce a “listless” state in the fish, rendering them unable to swim well, and then trying to reverse that state, all the while hoping to find new and effective treatments for Parkinson’s.

In his summer research, which was funded by the biology department’s Dr. Fred C. Swope Summer Scholars Program, McKelvey dosed the fish with neuronal nitric oxide synthase inhibitor (nNOSI) to induce listlessness, and then tried to reverse that state by using a monoamine oxidase inhibitor, which inhibits the breakdown of dopamine. A lack of dopamine, a key neurotransmitter, causes the symptoms of Parkinson’s disease.

For McKelvey, who plans to attend dental school, the summer work was eye-opening. “I didn’t think I would like research, but after this summer I found out I really did enjoy the whole scientific method,” he said. “I came up with what I thought would happen and then seeing it actually happen, it was a cool feeling.”

Barbery, meanwhile, did similar work with the fish, but with a different substance. He used 6-hydroxydopamine (6-OHDA), a neurotoxin, to induce a Parkinson’s-like state in the fish.

“In Parkinson’s, patients start noticing the true effects of Parkinson’s disease after they lose about 75 percent of their dopamine-producing neurons,”

said Barbery, whose summer work was supported by a discretionary fund accompanying Turner’s Read professorship. “I’m trying to create that same kind of neuronal death in the fish.”



Lorenzo Stola ’16 transfers zebrafish to a test solution. – VMI Photo by H. Lockwood McLaughlin.

INSTITUTE REPORT

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When he attempted to rescue the fish by reversing the Parkinson's-like effects, Barbery discovered that all of the substances he tried were equally effective. In essence, he found that in order to get well, all the fish needed was for the toxin to be removed. To Barbery, this suggests that fish may be able to grow new neurons, which mammals cannot.

Both McKelvey and Barbery are continuing their research as student research mentors in Turner's biology capstone class this

fall. For both of them, science is a never-ending scavenger hunt, with new clues around every corner.

"I enjoy research a lot," said Barbery, who hopes to attend medical school after VMI. "You're not alone. You have a team. Everyone's contributing ideas, and that helps you critically think and come up with new ideas."

Turner, meanwhile, hopes to see the research published, possibly in the *Journal of Nitric Oxide Research*, with the cadets listed

as co-authors. Publication, though, isn't the only reward for Turner, a past recipient of the outstanding faculty award given by the State Council of Higher Education for Virginia.

"The joy is to involve undergraduates in this exciting realm and have them see how science sometimes comes together and works really well as you put pieces of the puzzle together."

To see more photos, visit VMINews.tumblr.com, post date Oct. 12.

Upper-Level Biology Mentorship Course Provides Hands-On Teaching and Learning

Imagine being in front of a classroom and expected to give a lecture to a class. Then imagine you've never taught a class before. Indeed, all of your life so far has been spent on the other side of the teaching equation – at a student's desk.

That's the situation some young alumni from VMI's biology department have found themselves in, as they either look for jobs as secondary school teachers or prepare to leave doctoral programs and go out on job interviews, explained Col. James "Jim" Turner '65, head of the department.

After years of fielding panicked phone calls from individuals in this predicament, Turner and other members of the biology department faculty decided to address the situation proactively by creating a class, Teaching Mentorship in Biology. This upper-level, pass/fail course allows cadets, with Turner's permission, to assist professors in lab classes.

"We realized that there was a leadership and mentorship opportunity here," said Turner, who noted that the class can help cadets determine if teaching is a good career choice for them.

This fall, Turner has three cadets – John McKelvey '16, Brandon Barbery '18, and Luke Johnson '17 – working as research mentors in his capstone class. All three have a good grasp of the subject matter – research into the role nitric oxide might play in treatments for Parkinson's disease – because they all did independent research with Turner this summer on that same topic.

"It helps me be more confident," said Barbery of his work with the capstone class. "They say the best way to learn is to teach it to somebody.

It helps me reinforce all of the ideas that Col. Turner has taught me."

While neither McKelvey nor Barbery has definite plans to teach down the road, each said he was glad to have the experience.

"I thought it would be a good leadership experience," said McKelvey, who plans to attend dental school. "I'm a First Class private," he continued. "I haven't had a lot of leadership experience in the Corps."

Barbery, who plans to attend medical school, said he also valued the chance to lead and to continue the work he'd begun over the summer. "It's basically another reason for me to be in the lab," he noted. "I wanted a mentorship experience anyway, and doing something that will help me with my research is kind of a double whammy."

The benefits of the teaching mentorship accrue to faculty as well. The 2014-15 academic year was Maj. Ashleigh Smythe's first year at VMI, and when she sat down last spring to design a syllabus for Biology 104 class, which covers biodiversity, she found herself welcoming the assistance provided by Sierra Sell '17, a teaching mentor who'd taken the class herself the year prior.

"I'd never taught it, so it was valuable to get her perspective," said Smythe, assistant professor of biology.

Once the class began, Sell jumped in eagerly, helping the mostly 4th Class cadets in the lab and on the occasional field trip, such as when the class went to Woods Creek to study and sketch stream invertebrates. There, Smythe noted, Sell brought along her notebook from the previous year as an example.

"It was helpful to have someone in there who'd done it herself," said Smythe. "She was enthusiastic about the topic and about interacting with the cadets. She really relished the course."

Sell likewise said that she'd had a valuable learning experience, especially since she's thinking of attending graduate school and becoming a professor herself one day. "There's something about passing on knowledge and seeing students enjoy studying what you're teaching them, and it's very rewarding."

– By Mary Price



Biology mentor Brandon Barbery '18 goes over instructions for starting an experiment with Bridgette Pouliot '16. – VMI Photo by H. Lockwood McLaughlin.

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Private Funds Help Establish Ultrashort Pulse Optics Lab

By Mary Price

This fall, Will Johnston '17 quietly made history when he became the first cadet to work in the Department of Physics and Astronomy's newly established ultrashort pulse optics laboratory.

The lab, the result of an ongoing collaboration between a private investor and a VMI physics professor, opened its doors in the spring, although work toward its establishment began in 2013.

That year, Col. Stacia Vargas, professor of physics and astronomy, teamed up with Lexington resident Tom Chaffee and his company, Attochron, to develop an application of ultrashort pulse lasers for carrying voice and data signals between cell phone towers.

Now, Johnston is helping Vargas to get the kinks out so the technology can be proven. So far this year, he's been working with a digital communication analyzer, a tool that allows its users to find out if the laser is mode-locked. If the laser is mode-locked, then all of its pulses will be aligned, resulting in a strong signal.

"We need to make sure we have one strong beam coming out, versus lots of little pieces," said Johnston, a double major in applied math and physics who plans to commission in the Air Force with the goal of working in research and development.

"Since we're trying to send data on [the signal], it really does need to have a solid mode lock," Vargas added.

The process has not been without hiccups.

"It's very stressful, and very complicated," said Johnston.

Persistence, though, is the name of the game, and Johnston has that in ample supply. Already, he's committed to working in the lab until he graduates, and he's planning on writing an honors thesis next year about his work.

"I'd like to see [the project] through," Johnston commented.

Johnston is also making plans to write a computer program that would make it easier to calibrate the lab equipment. To do so, he'll use LabVIEW, a software package specifically designed for engineering and science applications. Already, Johnston has had training in the software from Col. Merce Brooke IV '94, professor of physics and astronomy.

Like Johnston, Vargas and Chaffee have had help along the way – and part of that help recently came from a dedicated gift.

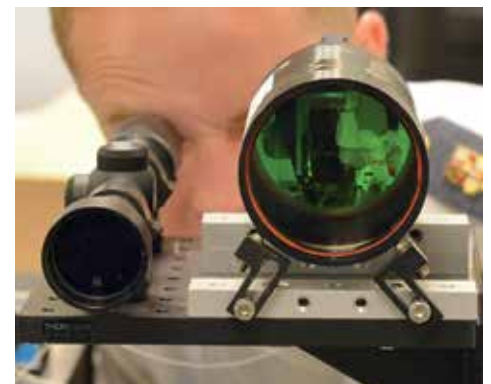
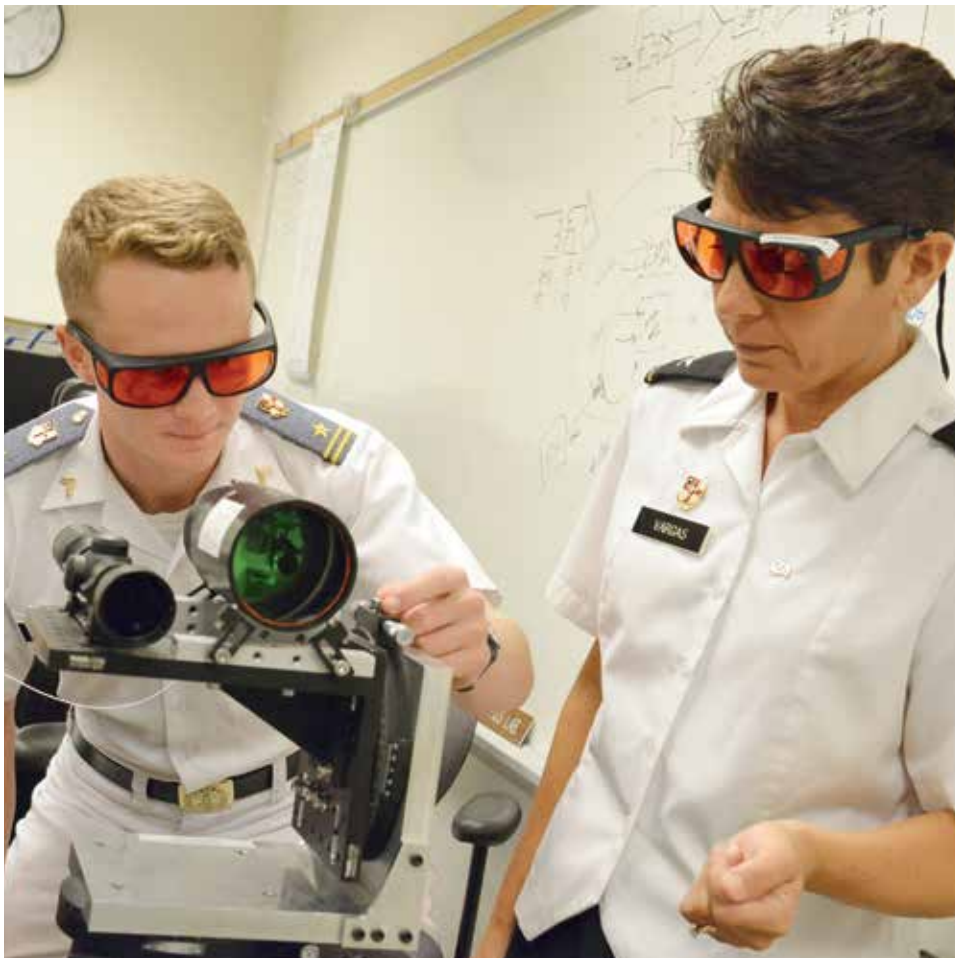
Earlier this year, the ultrashort pulse optics lab got a huge boost when an anonymous physics alumnus gave just under \$50,000 as part of the VMI Foundation's ongoing Uncommon Purpose campaign, to be used to support Vargas and Chaffee's work.

The funds have been used not only to buy much-needed equipment for the lab, but also to support a partial sabbatical for Vargas, so she could focus on the ultrashort pulse laser project, and to pay a small stipend to Johnston. Approximately \$78,000 in additional support for the new lab has come from the Jackson-Hope Fund.

Last year, Vargas and Chaffee took the first steps toward demonstrating the utility of ultrashort pulse lasers for telecommunications when they sent the first ultrashort pulse laser signal between an upstairs classroom in Mallory Hall and the press box in Foster Stadium, a distance of approximately 300 yards.

Earlier this year, the two were able to send the signal in a variety of weather conditions, a factor essential for commercial success, with a very small error rate.

"If you have a perfect signal, it's called a zero bit error rate," explained Vargas. "We were getting that zero bit error rate 95 percent of the time."



Col. Stacey Vargas observes as Will Johnston '17 aligns the receiver telescope for the free space optics experimental set up in the lab. – VMI Photos by Kelly Nye.

She continued, "At some of the poor weather conditions, we weren't at zero, but we were still at a reasonable bit error rate. We still had a signal that would be acceptable in telecom."

Now, with the 300-meter transmission successfully demonstrated, Vargas and Chaffee have set their sights on a new, higher goal: sending a signal from the greenhouse atop Maury-Brooke Hall to a small building off Randolph Street in Lexington, a distance of approximately 750 yards.

If that goal is met, the next step will be to send the signal from the roof of Maury-Brooke to the roof of Carilion Stonewall Jackson Hospital. That distance is approximately 1.2 kilometers – a distance that excites Vargas because one kilometer is considered the gold standard of industry acceptance.

Another goal for Vargas is to get more cadets and faculty involved, from a variety of disciplines. Col. James "Mac" Baker Jr. and Col. David Livingston, both professors of electrical and computer engineering, have already helped set up the receiver link that went into the press box at Foster Stadium.

"I loved that they came and were willing to talk about what we were doing," said Vargas. "I find myself very eager to have more people who know more, and are interested in learning more."

Johnston, too, is anxious to keep learning, even on the days when things don't quite go as planned.

"I'm getting a knowledge that I wouldn't get inside of a classroom."

To learn more about the ultrashort pulse optics lab, visit www.vmi.edu/usoptics.

Numbers Up in VMI Physics Department

For VMI's Department of Physics and Astronomy, an aggressive recruiting campaign during open houses for prospective cadets has resulted in what's likely a record number of physics majors this fall.

The department, which has traditionally had one of the smallest numbers of majors on post, began the 2015-16 academic year with 24 new majors, a number that Col. Tim Hodges, department head, believes is the largest ever.

That count has since declined to 23, but it still represents more than double last year's enrollment of nine 4th Class physics majors.

There are now 40 physics majors in all classes enrolled.

"We're doing a much better job of selling the program," said Hodges, who became chair in January 2014.

Hodges has added an additional section of the introduction to general physics class, required of all physics majors, to accommodate the additional 4th Class majors as well as engineering majors who typically take the course. Eventually, additional upper-level lab sections may be needed, since each can accommodate only about 10 cadets.

Despite these growing pains, Hodges said he was "very pleased" to see the number of majors increase so markedly this year. When he became chair just under two years ago, the department had approximately 35 majors. His goal as department chair is 60.

- By Mary Price



Parents Weekend

Tailgaters fill the Parade Ground on a beautiful fall morning during Parents Weekend, Oct. 16-17. Activities included a barracks tour, parades Friday and Saturday, a jazz ensemble and Glee Club concert, and a football game against University of Tennessee-Chattanooga. To see more photos, visit VMINews.tumblr.com, post date Oct. 17. - VMI Photos by Kelly Nye.



POST BRIEFS

Visiting Professors Take Up Positions on Post

Four visiting professors are on post for all or part of the 2015-16 academic year. Joseph Aufmuth is Friends of Preston Library Visiting Chair in Library Information Sciences. He will teach a class in the Computer and Information Sciences Department in the spring. In the Department of International Studies and Political Science, Dr. Bruce Frohnen is the Thomas Bahnson and Anne Bassett Stanley Professor in Ethics and Integrity. Also in the international studies department, Dr. Paul Hebert '68 is the Floyd D. Gottwald '43 Visiting Professor in Leadership and Ethics. Dr. Roy Henk is a visiting professor in the Department of Civil and Environmental Engineering.

VMI Applied Math Ranks Ninth

VMI's program ranks ninth in a list of top applied mathematics programs released last month by College Factual. In the value ranking, VMI applied math is fourth, with starting salaries for applied math majors listed at \$53,000 and mid-career salaries at \$108,000. The VMI program is the only one in Virginia in the top 10, which includes Brown, Harvard, and Johns Hopkins universities. In announcing the ranking, USA Today noted that VMI's applied math program "emphasizes an interdisciplinary approach [that] encourage[s] students to think about how math can be used to solve problems in creative ways." The article also noted VMI's low student-faculty ratio and high freshman retention rate.

New Robotics-Makers Club Tackles Driverless Vehicle

By Chris Floyd

Picture it.

It's a crisp fall day, and fans of VMI football have gathered on the Parade Ground for a little tailgating before kickoff. As game time approaches, they collectively groan, despairing over the prospect of the long trek down the hill, one that will feel even longer coming back.

Their worries are allayed, however, when suddenly a fleet of golf carts appears, without drivers, ready to bus them all to the field.

Sound like something out of a science fiction novel? Well, if a group of innovative cadets has its way, it could be reality someday.

Cadets Dominic Romeo '16 and Edward Olbrych '18 are leading a contingent that is currently working on creating an autonomous vehicle. Their work has started small, but by the end of this year, they hope to have one of those golf carts rolling.

"Before the end of this year, I want to see us get from Jackson Arch to Nichols," said Romeo. "I think it's something that might be attainable. We're definitely going to try to push it as fast as possible."

The work of Romeo and Olbrych, along with the more than a dozen others who have joined them, stems from a combination of other projects on which they have worked and a desire to resurrect the foundering robotics club at VMI.

"Edward had this idea that he wanted to get a robotics club started again," said Col. David Livingston, a professor of electrical and computer engineering, who worked with both Romeo and Olbrych on past robotics projects. "He took the ball and ran with it." The new club has a new name, the Robotics-Makers Club.

To ensure that the club didn't meet the same fate as its predecessor, its leaders decided to make it a more hands-on experience, developing a project that would ensure participation by all of the members. That is the seed from which the idea of the autonomous vehicle grew.

"I really wanted to make sure we had something to work towards," said Romeo, who had been a member of the first robotics club. "This project came about after several club meetings. A lot of ideas bounced around, and we settled on this one. It kind of had a wow factor that everyone was excited about."

With Romeo noting that the venture is "an ambitious project," the club has decided to start small. The first item on the agenda is to create a vehicle that will be able to navigate the halls at the Nichols Engineering Building. After that, the sky is the limit.



Edward Olbrych '18 and Dominic Romeo '16 demonstrate the current state of the Robotics-Makers Club's founding project. - VMI Photo by H. Lockwood McLaughlin.

"From there, they will start scaling it up, turning it into a mobile wheelchair and eventually something the size of a golf cart that should be able to drive around post," said Livingston. "The idea is that they keep going, keep developing, and we supply the needed support for the projects in the form of getting the parts, mentoring them where it's needed and so forth."

"We're at the very beginning," said Romeo.

"In future years," added Olbrych, "it will be developing the system further, adding new features, enhancing its safety."

"It's a cool experiment on how we can apply autonomous vehicles to real-life situations," added Olbrych, saying that cadets of other majors could be involved. "There's a lot of room for lots of different skill sets to be applied."

"These two guys are leading the effort," said Livingston. "I'm just happy to let them do what they're doing and see how far we can bring things along here. We're really proud of the fact that these guys are taking it upon themselves to get this organized, to get accomplished what they are getting accomplished."

ATHLETICS

Women's Soccer Earns Sixth Victory

VMI's women's soccer team is on the verge of posting its best season in nearly a decade.

With a 3-0 win over rival The Citadel Oct. 16 in Lexington, the Keydets picked up their sixth victory of the season, and with two regular-season contests remaining, VMI has a chance to post its best mark since 2009. VMI has not won more than three games since the 7-9-3 finish that year.

Blake Cashin '19 and Sydnie Bligh '16 helped VMI double last year's win total by scoring first-half goals to stake the Keydets to a 2-0 lead at halftime against The Citadel. Olivia Cotton '19 put the game away with her tally after halftime as VMI improved to 6-10 overall and 2-5 against Southern Conference foes.

Bligh's goal was her sixth of the season, the most for a VMI player since 2011. As a team, the Keydets have tallied 29 goals, the most since 2008.

The Bulldogs outshot the Keydets 20-15 in the game, but VMI goaltender Darien Dunham '19 earned the shutout with nine saves.

VMI closed out the season with a pair of games at the end of October, at home against Delaware State and on the road at the University of North Carolina-Greensboro. The Southern Conference tournament was slated to begin Oct. 28 in Greenville, S.C.

Rifle Season Opens at Kilbourne

The VMI rifle team opened its season with a pair of third-place efforts and a second-place finish Oct. 10 on the range at Kilbourne Hall.

Hunter Cushman '19 led the VMI mixed team to that second-place outing, scoring 564 points in the air rifle portion of the competition. He finished tied for top team honors with Matt Lusardi '17, tallying 554 points in smallbore.

The VMI women's team placed third in that meet, paced by Katherine Watson '18, who posted a score of 563 in air rifle. Samantha Alexander '18 was the top smallbore finisher with 552 points.



The rifle team opened its season in Kilbourne Hall's state-of-the-art range.
- VMI Photo by H. Lockwood McLaughlin.

Men's Cross Country Earns Fourth Top-10 Finish

Buoyed by three top-10 finishes, the VMI men's cross country team placed second at the George Mason Invite Oct. 3 in Leesburg, Va.

Sean Helmke '16 was the top Keydets finisher, crossing the line in 25 minutes, 20 seconds, to take fourth place in the individual standings. Daniel De Nijs '16 and Avery Martin '16 placed eighth and ninth, respectively, for VMI, which finished sixth in a meet at Wake Forest University Oct. 16.

On the women's side of the course, Bethany King '18 finished 10th and Kennedy Flynn '18 was 15th to lead VMI to a third-place team finish at the George Mason University meet. Flynn later ran a personal best time of 23:22 in the meet at Wake Forest.

The two meets were the final regular-season tune-ups for the Keydets, who traveled to Greenville, S.C., for the Southern Conference Championships Oct. 31.

Close Scores Mark Football Losses

The VMI football team lost its fifth straight game with another close setback Oct. 16, falling to sixth-ranked Chattanooga 33-27 at Foster Stadium. Three of the Keydet losses during the streak have come by an average of five points.

The Keydets led 21-20 at halftime in the latest heartbreaker, but when the VMI offense stalled for most of the second half, the Mocs were able to rally with 13 unanswered points to take a 33-21 lead.

VMI tried to mount a comeback, and pulled within one score when quarterback Al Cobb '17 connected with Chad Jacob '17 on a 9-yard touchdown pass with 2:44 to play. But Chattanooga converted a fourth-and-six play in the waning moments of the game and was able to run out the clock on the victory.

Cobb completed 15 of 25 passes for 190 yards and three touchdowns, but he also tossed an interception that the Mocs returned for a touchdown. Aaron Sanders '17 finished the game with seven catches, and Greg Sanders '18 paced the defense with 13 tackles.

Two Win in Greensboro Swim Meet

The women's swimming team opened its season with a pair of setbacks, but the Keydets did boast a couple of individual winners in a meet against North Carolina Agricultural and Technical State University Oct. 15 in Greensboro.

McKenzie Raber '18 outclassed the field in both the 1,000-meter freestyle and the 500 free, winning the first race by over two minutes and touching the wall over one minute ahead of the runner-up.

Orla Jordan '19 was VMI's other winner, taking first place in the 100 backstroke.

Men's swimming opened its season Oct. 23.

Men's Soccer Falls in Two Overtimes

As the VMI men's soccer team continues to search for its first victory of the season, the Keydets failed to take advantage of their best offensive output of the year, falling to East Tennessee State University 3-2 in two overtimes Oct. 2 in Johnson City, Tenn.

David Wright '18 and Grant Austin '19 tallied the goals for VMI, which has been held scoreless on nine occasions this season.

'Doc' Carroll's Portrait Adorns Carroll Hall Once More

By Mary Price

A sad, mysterious chapter in the Institute's history came to a happy conclusion recently with the gift of a new portrait of the late Col. Robert "Doc" Carroll to replace one that was likely stolen.

On the eve of Founders Day weekend in 2012, a portrait of Carroll, a 40-year veteran of VMI's biology department faculty, suddenly and inexplicably disappeared from the foyer of Carroll Hall, where it had hung since the building was named in Carroll's honor in 1980.

The VMI Police was notified, but no perpetrator could be found, nor could any trace of the missing items, which included not only the portrait of Carroll but also two rugs and a framed black and white dedication photo.

Fast forward to the early summer of 2015 – and the VMI Museum's receipt of a painting by artist Dr. James Reed '59. Reed, a retired dermatologist now living in Waynesboro, Va., hand delivered his oil painting, "The Sentinel Box," which depicts a cadet on guard duty in the courtyard of Old Barracks.

Reed stopped to chat with Col. Keith Gibson '77, executive director of the VMI Museum System, while on post.

The conversation turned to Carroll, known for his mentorship of generations of pre-med cadets who became known as "Doc's boys," and when Reed began to reminisce about Carroll's influence during the two years he spent at VMI, Gibson told him about the missing painting.

"Why don't I replace it?" Reed recalled asking.

Soon, Reed was making a second trip to Jackson Memorial Hall, home of the VMI Museum, this time bearing an oil painting depicting a head and shoulders image of Carroll. The new painting was hung in Carroll Hall earlier this fall, but this time it's been placed deeper inside the building to discourage a second disappearing act.

"We are very pleased to have a portrait of Doc Carroll once again gracing the building that bears his name," said Gibson, who is also chair of the Memorials Committee, a project of which has been to create appropriate foyer displays for buildings on post. "The fact that

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What he recalls is his concern for the other soldiers in the Humvee with him.

Was the young soldier behind the M-240 machine gun in the open cupola OK? Was their convoy being overwatched by direct or indirect fire so that more injuries were likely? In the damaged vehicle, could the four others be gotten to safety?

The Humvee pulled over a few-hundred feet down the road, efforts to extricate Inman began, a medevac was called in, and less than 45 minutes later it was all over. He was safe in a Level I military hospital in Logistic Support Area Anaconda outside Balad, Iraq. Twenty-four hours later he was in Germany and the next week, back in the United States, at Ft. Campbell, Ky., where he received most of his care.

It was all over so fast – evidence of the extraordinary care received by U.S. soldiers wounded in the field – but in a way that was one of the problems.

Ultimately, his wounds led to the amputation of his right foot. Inman admits, "I wish I still had a foot," but he adds immediately, "it can always be worse." And what was most difficult for him was leaving his unit.

"I was a battalion commander [with 101st Airborne Division]; I had been with that battalion for 19 months, [and] I was pulled out instantaneously. I did not have an opportunity to even say goodbye," said Inman. "That was tough."

Inman's final active duty assignment was as commander of the National Capitol Region Warrior Transition Brigade at Walter Reed National Military Medical Center in Bethesda, Md., where he was responsible for all the nonmedical care for wounded, ill, and injured soldiers and their families.

"I found it very humbling to be able to observe, watch, help our men and women that have been wounded," said Inman. "I found that by and large they were extraordinarily resilient. I've seen quad



Col. Jamie Inman '86, when deployed with the 3rd Battalion, 320th Field Artillery, 101st Air Division (Air Assault), pauses in a Humvee near Balad, Iraq. – Photo courtesy of Col. Jamie Inman '86.

amputees that within six weeks were changing the diapers on their toddler daughters. ... And they had wonderful senses of humor."

It was, concluded Inman, "really, really meaningful work."

Inman's next stop was VMI and an opportunity to help guide the Institute as it teaches time-honored values to a 21st-century Corps of Cadets. He has much to share.

"I think the essence of being a leader is to selflessly serve others and to inspire them to attain a specific goal or achievement," reflected Inman. And VMI, he said, "is still a Spartan, rigorous, tough, demanding four years that ... produces a strong, resilient, intelligent, values-based young person who's ready to contribute in the world in a positive manner."

Institute Honors Forums Foster Engagement with Ideas

By Sherri Tombarge

An international humanitarian worker, a lawyer, a combat veteran.

Visiting faculty, VMI administrators, program heads.

These are the people, along with members of the teaching faculty, that the VMI Institute Honors program taps to lead honors forums each semester.

The forums tackle topics that cadets may never meet in the classroom, and they are led by facilitators who bring a wide range of experience to the discussion. Many have grappled with complex, unstructured issues in their careers.

And yet they're not the drivers. Honors forums are run by cadets enrolled in the Institute Honors program, and their leaders are called facilitators because they're there not to teach but to add perspective to discussions on topics selected by cadets, based on readings chosen by the day's cadet leader.

"I think, candidly, the challenge is not to overtalk," said Col. Jamie Inman, VMI chief of staff, who leads a forum each Wednesday this semester. "What I try to do is allow all the cadets to have an opportunity to share their perspective, ... to really flesh the topic out."

The forums cover a wide range of topics, with subscriptions to *The Atlantic*, a monthly magazine offering news and analysis on politics, business, culture, and technology, provided as a resource.

"Most of the topics we talk about don't have a solution," said Inman.

A recent meeting of Inman's forum addressed the relationship between tenure and academic freedom and how it affects teachers and students from kindergarten through higher education. The cadets reflected on how a teacher's political views can influence the classroom and affect their careers, the protections and dangers presented by tenure, and the value of student evaluations in assessing the work of teachers. Occasionally, the discussion touched on how these issues affect cadets and faculty at VMI.

"We depend on the faculty member learning who's in the room, what these people care about, what they want to explore as a group," said Col. Rob McDonald, who directs the Institute Honors program, now in its 15th year. The forums include cadets from all four classes

and provide a rare opportunity for 4th Class cadets to engage in real discourse with 3rd, 2nd, and 1st class cadets.

"It's intended to be a weekly stirring, keeping ideas percolating, reminding ourselves that there's a world outside VMI, people doing things that matter, that you're going to matter in that world," said McDonald.

Honors cadets participate in six honors forums, which are ungraded pass/fail classes, one each semester except during two semesters when they are enrolled in three-credit interdisciplinary honors seminars. They also complete an honors thesis and must maintain a 3.5 GPA.

"It's really quite a demanding program," said Inman, made up of "impressive men and women," and the forums are meant to challenge them to think critically and learn how to present ideas that may be controversial or confusing.

"Putting them [cadets] on the hot seat and making them respond in a way that is cogent, rational, thoughtful – ensuring a certain level of dialogue – is the facilitator's role," noted McDonald, adding that the forums require no homework and no tests.

Facilitators this semester include two professors, Dr. Bruce Frohnen, a professor at the Claude W. Pettit College of Law, and Louis Blair of VMI's international studies department. Dr. Paul Hebert, a career humanitarian, taught one during his first visiting professorship. VMI's dean, Brig. Gen. Jeffrey Smith, is teaching a forum, as are Col. Christina McDonald, head of the Institute Writing Program; Lt. Col. Scott Frein, associate professor of psychology; and associate dean Col. Rob McDonald.

For VMI staff facilitators, working directly with the cadets can deepen their sense of purpose as they face the daily realities of administrative office. "It's refreshing to remember why we're all coming to work. It is for the cadet corps, and it is for the student body," said Inman.

For cadets, the forum offers one more leadership challenge. Noted McDonald, "I can't think of another academic experience at VMI where they are truly in charge."



Col. Jamie Inman '86 (in foreground, at left) leads a discussion on academic freedom in his Wednesday morning honors forum. – VMI Photo by H. Lockwood McLaughlin.
November 2015

First Anniversary of Campaign for VMI Approaches

By Scott Belliveau '83, VMI Foundation

As of Sept. 30, 13,138 donors had made a gift or commitment to An Uncommon Purpose: A Glorious Past, A Brilliant Future: The Campaign for VMI, bringing its grand total to more than \$233 million.

That number includes 266 gifts and pledges of \$100,000 or more, including 44 of \$1 million or more, said Brian Scott Crockett, CEO of the VMI Foundation.

"Roughly half of this total is in the form of cash gifts," said Crockett. "Some of this has gone to the Foundation Fund and Keydet

Club Scholarship Fund, which makes it immediately available to VMI. Other gifts have gone to endowments which ensure the Institute's long-term financial stability and support such things as merit- and need-based scholarships, faculty support, and research."

As the first anniversary of the public phase of the campaign approaches, there is growing anticipation.

"Our donors continue to give generously. Almost \$2 million was raised in September, and, thanks in part of the Class of 2005's 10th

Reunion Campaign, October has been quite successful as well. The campaign cabinet and numerous volunteers, guided and inspired by our campaign chairman, Donald M. Wilkinson '61, have engaged many alumni and friends," said Crockett. "I am certain that the figure that we will announce on November 11 will be very exciting."

To learn more about the campaign, visit vmi.edu/campaign. To keep up with campaign events and news, search #VMICampaign on Facebook.

Campaign Vice Chairman to Receive Service Award

By Scott Belliveau '83, VMI Foundation

James E. Rogers '67 will receive the VMI Foundation's Distinguished Service Award during Founders Day Convocation Nov. 11. The award will be presented by Hugh M Fain III '80, president of the VMI Foundation, at the event, scheduled for 1:30 p.m. in Cameron Hall.

Rogers is a director of Owens & Minor Inc., New Market Corp., and several private companies, including Mohawk Paper Mills Inc., Printpack Inc., and Service Center Metals Inc. He has been the chairman of the board of BackOffice Associates LLC, a data management software and service provider, since 2011.

Rogers began his service to the Institute in 1997 when he joined the VMI Foundation's Board of Trustees. He was the Foundation's president from 2000 to 2002, resigning from the board to accept an appointment to the VMI Board of Visitors. He served on that board for eight years and, from 2007 to 2012, he was a vice president.

He is also a member of the Board of Overseers of VMI's Jackson-Hope Fund and serves as vice chairman of VMI's comprehensive fundraising effort, An Uncommon Purpose: A Glorious Past, A Brilliant Future: The Campaign for VMI. He was a member of the executive committee of its previous campaign, Reveille: A Call to Excel.

"The criteria for the Distinguished Service Award are 'exemplary dedication to VMI and commendable dedication to the mission of the VMI Foundation,'" said Fain. "Jim has demonstrated both qualities, and his contributions to VMI's advancement have been important and numerous. It will be my honor to welcome him into the select company of the recipients of the VMI Foundation's Distinguished Service Award."

Prominent in civic and charitable affairs, Rogers was the founding president of the Richmond Historic Riverfront Foundation, and he is a trustee of the Virginia Institute of Marine Science Foundation and a former vice chairman of the Chesapeake Bay Foundation. He is also a member of the George C. Marshall Foundation's Council of Advisors.

Rogers, who graduated with a bachelor of science degree in physics, has been prominent in Virginia business for decades. From 1982 to 1987, he was the senior vice president of corporate development for James River Corp. and group executive of the corporation's specialty business from 1987 to 1991. He was the founding president and chief

executive officer of Specialty Coatings International from 1991 to 1993 and the founding chairman of the Board of Directors of Customs Papers Group from 1993 to 1996. In 2003, he became the chairman of the board of Carastar Industries Inc., a position in which he served until 2007.

From 1993 to 2011, Rogers was president of SCI Investors Inc., a private equity investment firm specializing in venture capital and early stage private companies.



Goal Surpassed

The Class of 2005 presented the initial proceeds of its 10th Reunion Campaign at the Oct. 10 Reunion Parade. With more than 43 percent of the class participating, the effort raised more than \$255,000, beating its goal of \$205,000. The presentation was made by Timothy M. Johnson, chairman of the Class of 2005 Reunion Campaign Committee, and two committee members, Paul T. Bryan and Shore A. Stokes. The gift was accepted by Warren J. Bryan '71, vice president of the VMI Foundation; Robert P. Louthan '82, first vice president of the VMI Alumni Association; and Gen. J.H. Binford Peay III '62, VMI superintendent. – Photo courtesy the VMI Foundation.

Chemistry Short Courses Introduce Advanced Topics

By Kelly Nye

VMI has a bigger job than simply educating young men and women. The Institute's mission is to create citizen-soldiers. And within the four-year cadetship, professors and cadets must learn to balance a tight military and academic schedule. The high demands on time add a strain on cadets who want to pursue more depth in their academic field.

The chemistry department's short courses are designed to address just that problem, offering a range of advanced courses with little additional burden to the cadet schedule.

As Col. Daren Timmons, chemistry department head, explained, each one-credit class lasts a third of the semester. The Tuesday-Thursday time slot is the same 75-minute length as a regular class, but each course lasts only about a month, with cadets having the option of taking up to three during a semester.

"We were dealing with the issue of how do we get more advanced chemistry into the life of our students with all of the external constraints from the VMI system," said Timmons. "Some of what we've done is take existing three-credit full semester courses and pull out segments. ... Instead of giving them a one-day or two day-lecture on [symmetry and spectroscopy, for instance,] now we get to spend a third of the semester on this very specific topic, so it's allowed me to take it more in depth."

In addition to symmetry and spectroscopy, short course topics include



Col. Daren Timmons teaches a chemistry short course on symmetry and spectroscopy. – VMI Photo by John Robertson IV.

organometallics and biosensors. Some are more popular than others, such as the course on toxic elements taught by Col. Dan Pharr, also known as the "chemistry of murder." The classes are advanced and require prerequisites, but they are not limited to chemistry majors.

The classes do not include a lab, but they do address real-world applications. For Maj. Kyle Bantz's November short course on biosensors, she is looking forward to delving deeper: "We know the standard

instrumentation; [now] let's talk about the new and emerging instrumentation."

Cadet Ryan Miccio '16, who is taking all three short courses offered this semester, offers this assessment of the classes: "The short glimpse ... allows us to broaden our horizons in the chemical field, especially as many of us need to choose a niche or find something that we enjoy doing for graduate school or entering into the chemistry work force."

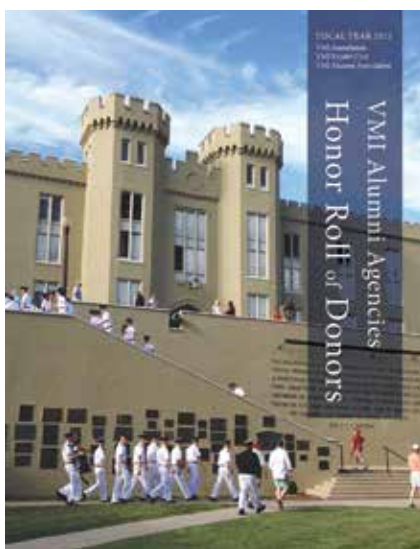
Timmons has heard universal enthusiasm for the classes, including some from alumni.

"In some cases we've had reports from cadets who have gone on to grad school who have said, 'Wow, that material made me more prepared than my peers once I got into this particular class in grad school.' So we won't cover the entirety of what they will do, of course, but they are ready to go and already a couple of weeks into it on day one because of the advanced training that they've had here," said Timmons.

Ultimately, the courses turn cadets' attention toward future learning opportunities in a manageable way. "We know that we're limited in the material that we can cover. Period. Whether it's general chemistry or special topics, there's always a limit," said Timmons. "And if we can continually remind them that there's more out there, ... it's a great impetus to keep learning."

Honor Roll of Donors

The thousands of donors to the Institute, including many of its faculty and staff, who were responsible for the \$56.2 million raised in support of VMI during Fiscal Year 2015, are recognized in the VMI Alumni Agencies Honor Roll of Donors. Available exclusively online at vmi.edu/honorroll, the document lists all of the individuals and organizations who made a gift to the Institute between July 1, 2014, and June 30, 2015, and includes information about fundraising in support of VMI during that time.



'One Thing to Kibitz, Another to Be at the Table'

Cadets, Heritage Foundation Fellows Time Travel to 1945 in Simulated Yalta Conference

By Mary Price

Born in the 1990s, today's cadets might be forgiven for thinking of the World War II-era Yalta Conference as ancient history.

But for 12 cadets, plus 13 George C. Marshall Fellows from the Heritage Foundation, a Washington, D.C., think tank, the Yalta Conference came to life on post Oct. 15-16.

In a whirlwind time span of less than 24 hours, the cadets and fellows convened and split into delegations to re-enact the famous gathering where U.S. President Franklin D. Roosevelt, British Prime Minister Winston Churchill, and Soviet Premier Josef Stalin met in February 1945 to make plans for post-war Europe.

The event, which is now in its second year, was organized by Heritage Foundation Vice President James Jay Carafano and Brig. Gen. Charles F. Brower IV, professor of international studies, assisted by Dr. Vera Heuer, assistant professor of international studies. Last year's inaugural event, said Brower, was "splendid."

"It was extraordinary in terms of the engagement of the cadets and the fellows." In some cases, that engagement continued afterward.

"One of the dividends of this is that the Marshall Fellows are young professionals," Brower said. Because of this, the cadets and the 20-something Marshall Fellows tended to talk easily, and one of last year's participants, Woody Plante '16, who graduated in December 2014, even found a job as a result of the connections he made at the Yalta Conference simulation. He's now working for U.S. Rep. Tim Huelskamp of Kansas.

This year, Brower found much enthusiasm when he began recruiting cadet volunteers from the American foreign policy class he teaches. The dozen volunteers he selected were assigned in groups of four each to three teams, representing the United States, the Soviet Union, and Great Britain.

"The best part about this experience was meeting the Marshall Fellows, working with them as a team, and really getting to know them as people," said Selena Chiep '17, a member of the American delegation who played the part of adviser to Roosevelt's secretary of state, Edward R. Stettinius Jr.

Chiep said she came away with a sense of just how difficult negotiations can be, especially when the person sitting across the table has a point of view diametrically opposed to one's own.



Churchill adviser Ben Stewart '17 briefs a Yalta Conference plenary session on the British proposal for the western borders of Poland. Listening to the briefing are (from left) Aidan O'Connor '16, adviser to Soviet Chiefs of Staff; Marshall Fellow Nicholas Rodman, Gen. Antonov; Marshall Fellow Kyle Nappi, Premier Stalin; Marshall Fellow Matthew Zolnowski, Ambassador Maisky; and Emily Bierut '16, adviser to Premier Stalin. - VMI Photo by H. Lockwood McLaughlin.



The American delegation prepares for the Yalta plenary session on the postwar reparations policy for Germany. Seated around the table are (from left) Garrett Hendershott '17 and Joe Amato '16, advisers to the Joint Chiefs of Staff; Jon Bukowski '17, adviser to President Roosevelt; Marshall Fellow Chris McLachlan, Adm. Leahy; Marshall Fellow Brant Anderson, President Roosevelt; Marshall Fellow Lisa Cresce, Secretary of State Stettinius; Salena Chiep '16, adviser to Secretary Stettinius; and Marshall Fellow William Wolfe, Gen. Marshall. - VMI Photo by H. Lockwood McLaughlin.

"I learned that any negotiation process is much more complicated and in-depth than it seems," she commented. "To an outside observer, it is easy to criticize the individuals involved and the strategies/tactics that they used, but, as an active participant, I was able to see that negotiations aren't easy at all."

Jonathan Bukowski '17, who played the part of adviser to President Roosevelt, echoed Chieff's assessment, saying, "Negotiating's hard."

He added, "Can you imagine in real life making some sort of slip up, maybe contradicting something your head of state just said?"

It's just those sorts of realizations that Brower had hoped the cadets would have.

"It's one thing to kibitz; it's another to be at the table," said Brower, who had a ringside seat to negotiations himself when he served as military attache to President Ronald Reagan in the 1980s.

Garrett Hendershott '17 played the role of adviser to the Joint Chiefs of Staff for the American delegation. "Too often it seems that the decisions that were made there seem to be quoted as coming out of thin air, with little appreciation of the work that was put in," he said. "I gained a particular insight into the personality dynamics of the real conference, like Roosevelt's attempt to play off Churchill into a partnership with Stalin."

Brower explained that while the cadets and Marshall Fellows at the conference didn't have to come to the same solutions as the real-life Yalta participants did, they were not allowed to use information that wasn't available to the real participants in 1945.

"The trick is how to get to a different outcome and whether it's possible given the constraints that are in front of them."

Bukowski, for one, said that this was possible, but difficult. His American team wanted a unified Germany, and achieved that goal, but only by letting Germany and the Soviet Union take large chunks of land in Poland.

Noted Heuer, a comparative politics specialist, "We sit here judging political decision makers and the outcomes of political decision

making, but if you put [cadets] in the arena and they have to consider all of the different ramifications, they may actually learn to appreciate the complexities."

For Brower, the Yalta Conference cadets were uniquely poised to see history from two sides of the same coin. "The advantage of the historian is that they know how it came out," he observed. "The advantage of the policy maker is ... [that] they didn't have the opportunity to see ahead."

To see more photos, visit VMINews.tumblr.com, post date Oct. 20.



Research Symposium

Maj. Josh Iddings, program coordinator for the VMI Center for Undergraduate Research and assistant professor of English, rhetoric, and humanistic studies, addresses the fall undergraduate research symposium, held Oct. 8 in the Turman Room. During the event, cadets made poster and oral presentations on their research. To see more photos, visit VMINews.tumblr.com, post date Oct. 8. - VMI Photo by John Robertson IV.

Carroll *continued from page 8*

it was done by one of Doc's boys makes it doubly meaningful."

Doc's boys, now men with careers of their own, have their own memories of Carroll, a figure who loomed larger than life during his time at the Institute, which stretched from 1928 to 1968.

Reed, who went on to earn a bachelor's degree from Duke University and a medical degree from the University of Florida, recalled Carroll as "colorful" and "irreverent."

"He may have been both of those things, but I saw him as kind and supportive, words he never would have used."

Echoing this depiction of Carroll was Col. James "Jim" Turner '65, now head of the biology department and the Beverly M. Read '41 Institute Professor of Arts and Sciences.

"[Carroll] was a character plus," said Turner, who added that Carroll's

eccentricities included bringing his dog to work with him and chewing tobacco in every class he taught.

"In every room there was a spittoon," said Turner.

Underneath the exterior of a crusty old man, though, was a heart that had the best interests of cadets in mind.

"You couldn't help but be taken in by him," Turner commented. "He was a character, ... but he loved every one of his students as his own child. ... It was an experience I wish everyone could have had in terms of a mentor/professor relationship."

For Reed, the artist, the portrait is a thank-you letter without words.

"I was never able to thank [Carroll], so perhaps this portrait can be one small acknowledgment of what he meant to those of us who knew him."



This portrait of the late Col. Robert "Doc" Carroll now hangs in Carroll Hall. - VMI Photo by John Robertson IV.

Getting it All Done on the Hill

Naval ROTC Battalion Commander Plans to Become a Marine and Explore the World

By Mary Price

It's likely that no one has ever had to remind Amy Hardbower '16 about that old adage, "The only place success comes before work is in the dictionary."

Indeed, Hardbower just might be the one-woman embodiment of the word "work," with generous chunks of commitment, perseverance, and discipline thrown in for good measure. Those qualities, plus an adventuresome spirit, have certainly greased the wheels for Hardbower, who's the only female VMI cadet commissioning in the Marine Corps this year.

How else could Hardbower possibly manage her role as battalion commander for Navy ROTC, with nearly 500 Navy- and Marine-option cadets under her command, while also serving as one of three S-3 lieutenants in the Corps, in charge of issuing training schedules and orders for 1,700 cadets?

On top of these duties, Hardbower maintains a 3.9 grade point average in her double major of international studies/modern languages and cultures (Arabic).

Asked if she ever sleeps, or manages time to take a break, the home-schooled student from Manassas, Va., replied, "I do sleep, and I do have fun, ... but I have to schedule it."

As a testament to that need to schedule, Hardbower displayed a well-worn, spiral-bound daily planner, which enables her to keep track of her multiple commitments throughout the day.

In her role as battalion commander for Naval ROTC, Hardbower has had to learn to delegate, a lesson she admits she's found difficult.

"I'm an organizer and a manager, so I don't do a lot of the stuff myself," she explained. Instead, she works closely with Marine Corps Company Commander Caleb Prather '16 and Navy Company Commander Ethan Zebbron '16 to ensure that the battalion's training objectives are met. Each Wednesday, the three meet for a working lunch.

"We work very well together," noted Hardbower. "I'm the details person, and I like to make sure every little thing is in place. Zebbron's a big picture kind of guy, and Prather's really good at getting stuff done. He takes a more laid-back approach and relieves some of my high-strung stress."

In her S-3 duties as well, Hardbower is grateful for the opportunity to delegate.

"There's a large staff, so we get it all done up here on the hill," Hardbower noted.

Academics, and languages in particular, come easily to Hardbower. "I just love to learn, so doing homework isn't a chore," she said. "I'm learning, so it's great."

Throughout high school, she studied Spanish, and in middle school, she dabbled in Russian. The experience of learning the Cyrillic alphabet came in handy when she enrolled in her first Arabic classes at VMI.

"I'm not a stranger to weird letters," she said.

Nor is she a stranger to overseas travel, thanks to her summer 2014 experience with VMI's Passage to Morocco, a program that



Naval ROTC Battalion Commander Amy Hardbower '16 confers with Steven Bolt '16 and Augustus Sortino '16. - VMI Photo by John Robertson IV.

provides cadets with linguistic and cultural immersion in that North African nation.

"It was a whole new world, literally," said Hardbower of her first trip outside of the United States. "It opened my eyes to a different culture and a different place. It was beautiful. I fell in love with the country, and I want to go back."

The language study aspect, though, proved challenging, even for someone with Hardbower's work ethic. While she could converse with her host family easily, because they spoke the modern, standard Arabic she'd learned at VMI, understanding the street dialect proved to be almost impossible.

What's more, Hardbower frequently found herself addressed in a language she doesn't even speak.

"They'd see a white female and think I was French [because Morocco is a former French colony] so they'd automatically start speaking to me in French, and I've never taken any French," Hardbower explained. "My Arabic's better than my French."

Growing up, Hardbower always had an interest in the military, thanks to the influence of her grandfather, Marine Corps Lt. Col. Frederick Matthys. Matthys, a resident of Fairfax, Va., will be Hardbower's guest for the Marine Corps birthday ball in November, and he's planning a return trip to post in May, to administer Hardbower's commissioning oath.

"Getting to lead Marines is going to be the most awesome thing," observed Hardbower.

Now, with graduation just seven months away, Hardbower finds herself thinking about the next stage of life. She's not sure where the Marine Corps will send her, but she admits her dream duty station would be Okinawa, Japan. What better place to learn a little Japanese, or Chinese?

"I just want to explore the world."

VMI Football, Basketball on ESPN3; Other Sports Soon

By Chris Floyd

Can't get out to Foster Stadium for a VMI football game? No problem.

Having trouble finding time to squeeze in a Keydets' basketball contest at Cameron Hall? Don't worry.

Thanks to a little digital magic and a lot of hard work from some very talented people, anyone can see VMI home football and basketball games anywhere, anytime.

Those games can now be viewed on ESPN3, the online branch of the popular 24-hour sports network, as VMI surges ahead to comply with the Southern Conference's mandate for all of the league's schools to be "ESPN3 ready" by 2017.

Right now, with new coordinator of athletic multimedia Tony Hermane doing much of the heavy lifting, VMI is one of only four SoCon members to have met that mandate. And at press time, VMI was one of only a couple of those schools to be doing everything in house.

"They send us all of the elements, graphics packages, but we do everything else," said Hermane. "We have our own crew. We create the pregame shows and the halftime content. We transmit everything to ESPN, and they put it on *WatchESPN.com*."

VMI has been in the video business for a while, producing content at a high level, according to Jamie Severns, associate athletic director for external relations, who saw a lot of productions during her tenure in the Southern Conference offices before she came to VMI last year.

VMI continues to broadcast content through the SoCon Digital Network, but as part of the league's contract with ESPN, more and more Southern Conference games can be seen via the network's streaming applications, including VMI's home football contests this fall and the basketball games when the winter season starts. For VMI, that means meeting the network's technical guidelines.

"For ESPN, we have to have four cameras. We have to have replay. We have to have a play-by-play and a color guy, and we have to have [that] different graphics package," explained Hermane. "Right now, it's a balancing act between ESPN and the SoCon Digital Network."

Including himself, acting as producer, Hermane has a nine-member crew that gets the games out and over the airways. That

group is composed of the director, the replay coordinator, the audio tech, the graphics designer, and four camera operators.

VMI produced its first game for ESPN3 when the Keydets played host to Morehead State University on Sept. 12. For the most part, Hermane has been pleased with the early results.

"Right after the [first] game, I was really frustrated," Hermane said. "It wasn't what I wanted, but at the same time it was much better than I expected it was going to be.

"I know I'm expecting more and more every game," he continued. "They've gotten exponentially better each time. By the time Western Carolina rolls around [Nov. 21], you are going to think you are watching Monday Night Football, minus the 20 cameras, of course."

Getting to this point has been a journey. Hermane did not arrive on post until July, leaving little time to get ready for the first ESPN3 broadcast. Then there was the matter of adding the necessary equipment to upgrade VMI's streaming capabilities.

"Some of the equipment we had and some of it we didn't," said Hermane. "We had the main things. We had to buy a switcher, and we got a new audio board after the first week. We'll be adding new things as we go along."

"A lot of that was purchased by the league," added Severns, "and donated to all of the schools in hopes that it would help the schools in their pursuit of reaching ESPN3 readiness."

In the future, Hermane and Severns are hoping to centralize all of that equipment in one control room. For now, the gear is housed in the press box above the football field. It can be moved if necessary, but moving that monstrosity is hardly practical.

"Yes, it's mobile, but it weighs 700 pounds," said Severns.

Once that control room, which will be located in Hermane's office in Cameron Hall, is completed, more and more VMI athletic events will make it to ESPN3. The Southern Conference requires member institutions to stream football, basketball, and volleyball

over the SoCon Digital Network, with football and basketball games being sent to the ESPN studios. Since VMI does not have volleyball, it has plugged women's soccer into its Southern Conference package.

And once again, VMI has surged ahead of the pack. On Friday, Oct. 16, VMI sent its first non-revenue broadcast to ESPN3, airing the women's soccer game against The Citadel. That marked the first time a VMI women's game had ever been seen on the network.

Hermane and Severns said they are not done there.

"Our hope is to eventually, once we have the control room, do every game from every venue on ESPN3," said Hermane.



Tony Hermane, athletic multimedia coordinator, prepares production equipment for streaming video. – VMI Photo by Steve Hanes.

"The centralized control room is going to be connected to each of our venues, including the track across the street when it's finished and Cormack."

Hermane said getting to this point and continuing to expand would not be possible without support at the highest levels.

"[VMI athletic director] Dr. [David] Diles has been huge," Hermane said. "He wants to make sure we are the class of the SoCon. I'm sure we have given him many headaches, but he has supported everything we do."

So one need not despair if one can't get out to Foster Stadium or Cameron Hall or Cormack Field House or Patchin Field or Grey-Minor Stadium or Kilbourne Hall. One can rest assured that a broadcast of VMI athletics is coming to a device nearby and that it will be of the finest quality.

"We never aim to meet minimum standards," said Severns. "We always strive to go above and beyond. We want to be best in the league."



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Pumpkin Launch

Civil engineering cadets learn the fundamentals with the help of a trebuchet and some pumpkins during one of several demonstrations in October. Cadets took measurements of the trebuchet's components and heard lectures from their professors before the demonstrations to better understand how the moving parts work together to transfer force to the projectile. To see more photos, visit VMINews.tumblr.com, post date Oct. 15. – *VMI Photos by John Robertson IV.*

