

# INSTITUTE REPORT

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## Founders Day Parade

Cadets march before an unusually large audience during the Founders Day parade Nov. 11. That audience included nearly 1,000 viewers watching online during VMI's first live webcast of a parade. A DVD of the parade is available for purchase at [www.vmi.edu/videos](http://www.vmi.edu/videos). – VMI Photos by H. Lockwood McLaughlin and Brittany Woychak '18.



## Cadets Simulate 1979 F-16 Data in Energy Lab Wind Tunnel

By Mary Price

A historical simulation combined with a lab exercise may seem an odd assignment, but for the 14 cadets in Col. Joseph Blandino's flight mechanics class this fall, it's resulted in a kind of in-depth learning that bookwork alone couldn't replicate.

The cadets enrolled in the 400-level class have been asked to play the part of Soviet intelligence officers who are considering an invasion of Iran during the tumultuous period following the fall of the Shah in 1979. As part of their preparation, the Soviets would have sought as much data as possible about the United States' then-new fighter wunderkind, the F-16, which entered service with the U.S. Air Force in January 1979.

For Blandino, the chance to use a real-world scenario is too good to pass up.

"The tools that our students have coming out of this flight mechanics class, combined with their other mechanical engineering courses, are really what ... Soviet intelligence officer[s] would have had in 1979 at their disposal," he commented. "The idea is to make the project very practical and put it into a real-world context."

As part of the assignment, the cadets in Blandino's class were asked to test a model F-16 in the wind tunnel in the mechanical engineering department's energy lab to find out the aircraft's "drag polar." Blandino explained that the drag polar, which is specific to each aircraft, is the relationship between its lift and its drag.

See Wind Tunnel, page 16

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## Tapping the Cadence

### Cadet Drummers Drive the Corps' Days – and Meals

Some people may think VMI cadets are out of step with other college students today. That may be, but they are very much in step with one another, and their steps are regulated by the beat of drums.

"Drums are very important to the everyday life of the cadet," said Phil Crane '16, the drum major for the regimental band at VMI this year.

"The drums are the heartbeat," added Caleb Baldwin '18, who is a member of the percussion section in the Regimental Band. "We keep the rhythm for the band, and we really drive [the Corps]."

Incoming cadets are greeted by the daunting sound of those drums as they are introduced to their cadre, which slowly marches into their lives on Matriculation Day. Rhythmic cadences from those drums lead the Corps to breakfast roll call every morning and supper roll call each evening. Weekend parades. Football games. The list goes on, and so does the beat of those drums.

"There have always been drums here," said band director Col. John Brodie, noting that the first band at VMI, consisting of just fife and drum, was formed in 1839. "It's an everyday part of their life. It's one of the first things they hear in the morning, and [one of] the last things they hear at night."

As members of the Corps prepare to march, the drummers – members of the Regimental Band except on Thursdays when the pipe band takes over – bang out cadences. These rhythms are designed to help cadets stay in step and look good doing it.

"The Corps won't start until the drums start," Crane explained. "The drums will tap off the cadence, and then everyone will start."

"The bass drums make sure the Corps stays in step," added Jake Tyler '16, who plays snare drum in the pipe band. "Then the snares add that extra ... back beat."

The gig isn't without its perks. Drummers who bang out BRC and SRC are paid for their efforts, and the band recently snared a couple of awards. VMI was honored at the Labor Day parade in Buena Vista, Va., while the percussion section of the pipe band was awarded first place at the Scottish Games and Highland Gathering in Charleston, S.C.

"It's a very special feeling to be able to do something that unique for the school," said Crane. "It's something that we take very seriously."

– By Chris Floyd



Drummers marching the Corps to Crozet during a recent SRC are Caleb Baldwin '18 on snare and Cody Bottoms '17 and Erin Swinson '16 on bass. – VMI Photo by Stephen Hanes.

# Bands to Perform Before Millions in Rose Parade

By Chris Floyd

For folks at VMI, watching the Regimental Band in a parade is old hat; they see it nearly every week.

But now millions more around the world will get a chance to see the award-winning band in all of its glory.

The VMI contingent will be traveling to Pasadena, Calif., over the holidays for its second appearance in the annual Rose Parade on Jan. 1, 2016, a show that will be seen by hundreds of thousands on the parade route, viewed by millions more on television, and broadcast in China for the first time this year, adding even more eyes to those watching the band wind its way along the 5 1/2-mile parade route.

"It's a great honor to be asked to go play the Rose [Parade]," said Caleb Baldwin '18, a member of the drum corps that will be setting the pace for the other musicians. "It's going to be a great opportunity for the world to see what VMI is."

"You can't ask for a better PR vehicle for the school," added band director Col. John Brodie, who took the band to Pasadena once before, back in 2008. "Theoretically, more people will see VMI for a 30-second clip than have heard of VMI in the last 10 or 20 years. It's exciting."

With, literally, the world watching, the regimental and pipe bands, one of fewer than 20 marching units from around the world to be selected for the parade, have been working hard to make sure they will be at their best on New Year's Day. Extra practices have been added to the already busy schedule, and they have marched, marched, and marched some more, all in preparation for the long trek that awaits them on the West Coast.

"We've been doing a lot of extra practices," noted Kayla Ranger '18, one of a handful of women who tote drums in the band. "We've gotten a lot of weekend practices done. I practice in my room all of the time."

In addition to making sure they are physically ready for the parade, members of the VMI band have added a couple of new wrinkles to their routine. While they will be playing familiar tunes, including "Shenandoah," one of the band's signature songs, the musicians have spent the last few weeks trying to learn the selections by heart.

"We're trying to memorize all of the music so we don't have those obnoxious flip folders

December 2015



Lawrence Coles '19 is interviewed by Annie Andersen of WSET. - VMI Photo by H. Lockwood McLaughlin.

in our face and music blowing around," said Brodie.

One of the unique features of the Rose Parade is the big, 110-degree turn right at the beginning. To make it even more difficult, the VMI band has decided to negotiate the turn in a new way.

"We've been marching around the Parade Ground, practicing some nice Abbott-style turns, which will look really good since we are a military-style band," said Baldwin. "It's a timed movement, so that when every line turns, it looks like we're making a perfect 90-degree turn."

"It's a military turn, instead of that little wave you see most bands do," said Brodie, who noted that he named the turn after a

cadet who showed it to him several years ago. "We've done it before, and we have about six more practices before December. The cadets will be ready for it."

Most of them are ready already. Phillip Crane '16, this year's Regimental Band drum major, cannot wait to lead his group onto the route.

"In parade, it's a really cool feeling to be out front," he said. "I can only imagine what it's going to be like out front at the Rose Parade. It's going to be something I will remember for a long time."

Crane and the rest of the band will begin making those memories soon. The group will depart for California Dec. 28, and after some pre-parade festivities, including a beach party with alumni, the Rose Parade begins just four days later.

To emphasize just how short time is growing before the big day, the president of the Rose Parade, Mike Matthiessen, visited Lexington recently. He saw the band practice, and he presented the group with a Rose Parade banner for display. His visit made the goal of all this practice feel very real.

"It's a huge, huge thing," said Ranger. "I think the nerves are there, but I think we'll do a good job."

And when they do, all eyes, or millions of them anyway, will be on VMI.



Tournament of Roses President Mike Matthiessen addresses the VMI Regimental Band and Pipes and Drums before presenting the Rose Parade banner. - VMI Photo by H. Lockwood McLaughlin.

# Leadership Book Program Tackles Current Issues

By Mary Price

The lure of free pizza is almost always a powerful draw for college students – and that’s exactly what convinced Alex Bolt ’16 that he should come to a meeting of the Leadership Book Program.

But once he was there, he found not only his stomach filled, but his mind as well.

“How often, in the military environment or in the business world, can you sit down with a group of your peers and really discuss difficult leadership issues?” asked Bolt, who serves as the assistant cadet in charge of the program.

Members of the Leadership Book Program gather twice a month to discuss books about leadership written by leaders from all walks of life. The program is run under the auspices of VMI’s Center for Leadership and Ethics. Because of this, there’s a special emphasis on books that offer real-world leadership lessons from those who’ve been in the trenches, both in the military and in civilian life.

“We’re firm believers in the saying, “Those who can’t remember the past are condemned to repeat it,”” said Col. Pat Looney, deputy director of the Center for Leadership and Ethics. “We look for authors who can offer leadership traits, skills, and stories.”

The cadets in the group do more than just read books and discuss them – as much as possible, leaders of the group make an effort to bring the authors to post.

That’s what happened on Nov. 2, when former New York City Police Department Commissioner Ray Kelly arrived as part of the H.B. Johnson ’26 Distinguished Speaker Series. Cadets in the Leadership Book Program had already read Kelly’s recently

published memoir, *Vigilance: My Life Serving America and Protecting Its Empire City*, and they met with Kelly privately at a breakfast before his speech.

Both Bolt and Connor Morgan ’16, cadet in charge of the Leadership Book Program, found Kelly to be approachable, even-tempered, and surprisingly open to seeing both sides of the ongoing conflict over possible police misconduct in racially charged situations.

“It was very eye-opening,” said Bolt. “You see things in the media, but he came out with a very even keel and said, “This is why we did this, and I understand that there’s problems with it, but we are working to fix it.””

Morgan added, “He was never defensive when it came to acknowledging police misconduct. I was very impressed with how objective he was.”

Morgan likewise had high praise for Kelly’s book, saying, “That was easily one of the best books we’ve read in the Leadership Book Program. It’s so applicable to what’s going on in America today.”

That resonance with current events was a major reason *Vigilance* was chosen as the Leadership Book Program’s first selection of the 2015-16 year, said Maj. Jennifer Gerow, assistant professor of economics and business and faculty adviser to the Leadership Book Program.

“We wanted to pick a really attractive book for the first book,” she said. “We’re trying to pick things that cadets are going to be interested in.”

While pleased with the participation by cadets currently attending the program’s gatherings, Gerow, Morgan, and Bolt all said that they’d like to see a more broad mix of cadets in the program. Currently, there is only one female cadet participating, and very few nonwhite cadets.

“We’re trying to attract a diversity of opinions so we have ... more engaging discussions,” said Morgan.

As faculty adviser, Gerow also sees a critical need for ways to help cadets learn about leadership – a skill that can’t be picked up in a day, a week, or even a semester. Books written by people struggling with real-world leadership issues can only further knowledge of that subject, Gerow said.

“Leadership is a very complicated subject. ... It’s not easy in the real world. Leadership isn’t pretty.”

The cadets come for the pizza, of course, and a chance to stretch their minds, plus the possibility of meeting an author or two.

“Just being able to sit down and discuss leadership problems and dilemmas with a counsel of your peers is great,” said Bolt. “Getting the authors to come is a great addition, the icing on the cake.”



Ray Kelly speaks in Gillis Theater Nov. 2 as part of the H.B. Johnson ’26 Distinguished Speaker Series. – VMI Photo by H. Lockwood McLaughlin.



Cadets in the Leadership Book Program talk with Ray Kelly over breakfast. – VMI Photo by H. Lockwood McLaughlin.

# On LRC, Cadets Challenged to Lead, Follow, Evaluate

By Sherri Tombarge

During this year's Fall FTX Oct. 23-25, Marine Corps Capt. Shawn Ridings put a group of Marine-option Naval ROTC cadets through some exercises in the newest facility in VMI's Military Leadership and Field Training Grounds at North Post. The facility is the Leadership Reaction Course, part of a \$1.45 million project that included construction of a maintenance facility nearby and was completed over the summer. Ridings' mission: to evaluate the cadets on leadership and teamwork – how well they decide, communicate, and act in an uncertain environment.

These cadets were the first to use the LRC, located near the obstacle course across the Woods Creek Trail from Gray Minor Stadium.

Ridings, who spent part of last summer at Officer Candidates School evaluating candidates' performance on the Marine Corps LRC at Quantico, is one of a handful of VMI faculty and staff already certified to supervise training on the LRC. In the coming year, Ridings expects to help certify additional faculty and staff interested in running the course.

"The key to the LRC is that it's a free-flow exercise where cadets are given a mission statement to cross a bridge or to cross a series of obstacles without touching hazard areas and maybe to move a certain amount of personnel and equipment to the other side," said Lt. Col. Bill Bither, marksmanship and North Post Training Area director and NCAA rifle coach.

The LRC is a series of bays, each containing an obstacle and each displaying red and blue areas.

"They can't go in the blue because it's water – the scenario might say it's poisoned or has dangerous animals in it," said Bither. "The no-go area is red. They can't touch anything that's red."

VMI's LRC is a "dry" course, which can be used year-round depending on weather.

In a typical scenario, a cadet might be tasked to get a four- or five-person team with equipment through a culvert. Sounds simple, but it's not. Chances are they have to cross a blue area to get to the culvert and the exterior of the culvert may be painted red. The cadets are given tools, such as boards of various lengths or sections of rope, with which they may improvise bridges or ladders. These items, in addition to any equipment they're issued, must be transported to the other side.

Another scenario might involve crossing pylons over water, but without enough supplies to build a bridge all the way across.

"You've got to balance four or five people with a board, while you extend the board to the next platform," explained Bither.

A cadet is usually designated as the leader. That cadet has to communicate the problem to the team, come up with a plan of action, and direct the activities of the team to solve the problem.

"They fail if they did not get all of the equipment and personnel across," said Bither, "because they didn't complete the task to standard."

Bither said all 3<sup>rd</sup> Class cadets will run the course, usually supervised by 1<sup>st</sup> and 2<sup>nd</sup> class lane graders. Lane graders track a safety



Marine Corps ROTC cadets (from left) Andrew Gazzillo '17, fireteam leader Kailey Dixon '18, Carter McCausland '18, and Hunter Starner '18 execute a tactical scenario in VMI's new Leadership Reaction Course. – VMI Photo by Stephen Hanes.

checklist and provide spotters where necessary. They also conduct an after-action review of the cadets' performance. The lane graders have access to a solution, but as long as the cadets achieve the goal within the time limit, the team is successful, no matter what plan they pursued.

The course challenges the entire process of leadership and followership, as well as cadets' ability to evaluate performance.

"Sometimes you'll have people who do a good brief ... [but] the execution is poor because they haven't had many opportunities to be in charge of something; they don't know how to delegate," said Ridings. "Or you could have someone bungle the brief but execute well."

Although VMI's ROTC units are expected to use the course regularly – the Marine cadets who ran the course during Fall FTX were preparing for the course they'll face at OCS – all cadets will benefit.

"The Leadership Reaction Course teaches situational leadership for both civilian and military positions," said Gen. J.H. Binford Peay III '62, VMI superintendent, who worked to get the course for VMI. "Situational leadership presents a challenge in how you organize your team, how you take suggestions from other people, how you use resources to accomplish your goal."

It differs from other VMI activities, he said, because it's run through the company chain of command rather than the class chain. Lane graders will be 1<sup>st</sup> and 2<sup>nd</sup> class cadets in the same company as the 3<sup>rd</sup> Class cadets they're putting through the course

"I think running the scenarios at the LRC will add to the bonding in the Corps of Cadets as they work together as teams," added Peay.

Ridings said the value of the LRC is "immeasurable" in developing leadership traits and principles that will translate well in military or civilian careers. But it's also invaluable for cadets headed to "summer camps" – training and evaluation under stress for careers as military officers.

"Every tactical scenario can be different," said Ridings. "You'll be leading a team you haven't led before, and I promise you, [at Quantico] they'll be even more tired than they were [at Fall FTX]."

To see more photos, visit [VMINews.tumblr.com](http://VMINews.tumblr.com), post date Oct. 25.

# ATHLETICS

As the fall sports seasons at VMI wind down, the winter athletes have begun to take center stage. However, for several teams, there was some unfinished business still to take care of.

## Cross Country Takes Second at Championships

The VMI cross country team wrapped up its season at the Southeast Regional meet recently, and, before that, the men's team turned in an impressive outing at the Southern Conference championships.

Avery Martin '16 and Sean Helmke '16 both finished in the top 15 to lead the Keydets to a runner-up finish at the championships, held Oct. 31 in Greenville, S.C.

Martin placed ninth in the field, while Helmke was 11<sup>th</sup>. Both runners earned second-team all-conference honors. Meanwhile, Kyle Sabourin '19 was named to the all-freshmen team.

Host Furman ran away from the field, placing seven runners in the top eight to tally 20 points. VMI, with 79 points, outdistanced East Tennessee State, with 90 points, for the second spot. Samford was fourth, followed by UNC-Greensboro, Western Carolina, Chattanooga, Wofford, Mercer, and The Citadel.

On the women's side, Bethany King '18 was VMI's top finisher, placing 32<sup>nd</sup> as the Keydets finished ninth in the team standings.

## Women's Soccer Falls After Advancing to Second Round

Demetra Protogyrou '19 converted a goal and goalkeeper Darien Dunham '19 made a dramatic save in the seventh round of penalty kicks as the VMI women's soccer team squeaked past Chattanooga in the first round of the Southern Conference Tournament Oct. 28 in Chattanooga, Tenn.

After fighting to a scoreless tie at the end of regulation and overtime, the game went to penalty kicks, and it appeared as if the Mocs were on their way to victory after scoring two unanswered. But Amy Horney '18 and Dunham both found the back of the net to tie the score again and set up the dramatics at the end.

Advancing after the shoot-out, VMI moved past the first round of a conference tournament for the first time since 2009.

The run ended soon after, however, as the Keydets fell to Samford 3-0 in the quarterfinal round Oct. 31 in Birmingham, Ala.

VMI finished the season with a 6-13-2 record, its best mark since 2009.

## Guerra Named Conference Goalkeeper of the Year

The run in the conference tournament was short-lived for the winless men's soccer team, but the squad did receive some postseason accolades.

Alex Guerra '16, who led Division I with 127 saves on the season, an average of nearly seven stops per game, was named the Southern Conference's Goalkeeper of the Year. Grant Austin '19 led the Keydets in both goals and points and earned a spot on the league's All-Freshman team.

## VMI Football Wins Away at Mercer

VMI's football team owned a 2-8 record heading into its Nov. 24 finale against Western Carolina. Included among the losses was a 35-14 setback at the hands of the Citadel Nov. 7 in Charleston, S.C.

But the Keydets did manage to salvage another victory out of the season, snapping a 30-game road losing streak in the process. Storming out to a 21-0 lead, VMI held on fourth down late in the game and eked out a 28-21 victory over Mercer Oct. 24 in Macon, Ga., to win away from Lexington for the first time since 2010.

Aaron Sanders '17 hauled in 16 catches for 218 yards to break the school record for receptions in a game and earn Southern Conference Offensive Player of the Week honors. Quarterback Al Cobb '17 completed 28 passes for 391 yards and a pair of touchdowns, while Derrick Ziglar '16 rushed 22 times for 104 yards and two touchdowns.

## Wrestling Season Starts Strong

The winter seasons are in full swing now, and some of the early results have proven promising.

VMI's wrestlers christened their new arena at Cormack Hall with a bang, pinning guest Franklin & Marshall 29-7 Nov. 15.

Seven Keydets posted victories over the Diplomats, including Neal Richards '19, who scored a pin in the 157-pound weight class. Three other VMI grapplers won by major decision: Dalton Henderson '17, 125; Shabaka Johns '17, 165; and Mark Darr '16, 174. Derek Thurman '16 and Urayoan Garcia '16 rounded out the VMI win with their victories at 184 and 197, respectively.

The victory over Franklin & Marshall came on the heels of VMI's stellar performance at the Hokie Open, held on Virginia Tech's campus in Blacksburg a week earlier. Seven Keydet wrestlers earned top-six finishes at the tournament.

Richards led the VMI contingent, placing second, while Stevan Smith '19 placed third at 149 pounds. Johns and Taylor Thomas '18 (184 pounds) both placed fourth. Bennie Pachello '19 at 133, Darren Ostrander '19 at 141, and Blake Hohman '19 at 157 all earned sixth-place medals.



Dominick Gallo '19 faces his opponent from Franklin & Marshall in the 133-pound division Nov. 15 during the first match in the newly renovated Cormack Hall. – VMI Photo by Kelly Nye.

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## Men's Swimming Splits Tri-meets

The men's swimming squad picked up a pair of early season victories with splits in two tri-meets. One of those was Nov. 14, when the Keydets topped Howard 158-68, but fell to host Loyola 164-75 in Baltimore, Md.

Christian Shaner '16 and John Kelly '16 led the Keydets. Shaner won the 100-meter butterfly with a time of 53.49 seconds, and he placed third in the 200 fly. He also swam a leg for the 200 freestyle relay team that finished second and included Kelly, Christian Purdy '18, and John Lancaster '17. Kelly was the winner in the 50 free (21.70) and finished second in the 100 free.

## Female Swimmers Break School Records

Natalie Rivas '18 won the 50-yard freestyle in three straight meets, and VMI's women's swimming team picked up its first victory of the season with a 114-54 win over St. Peter's Nov. 7 in Newark, N.J.

School records have fallen at a rapid pace, with McKenzie Raber '18, Rebecca Serrano '18, and Gabbie Galvez '17 all setting new marks for the Keydets.

## VMI Rifle Teams See Early Success

VMI's rifle teams continue to enjoy success early in the season, placing second in the most recent match in Morehead, Ky., and winning a contest with the University of the Sciences Oct. 31 in Philadelphia, Pa., after which the mixed team was ranked 19<sup>th</sup> in the nation, the first time a VMI rifle squad has broken the top 20.

Matt Lusardi '17 led the mixed team, scoring 568 points in the smallbore competition and 572 points in air rifle to pace the Keydets.

Katherine Watson '18 tallied 544 smallbore points and added 562 air rifle markers to lead the women's team to its runner-up effort.



## Third-Ranked VMI Dominates the Pitch

The VMI rugby team celebrates after the Cardinals Collegiate Rugby Conference championship, which brought 18 teams to VMI Nov. 7-8. VMI won the tournament, defeating Virginia Commonwealth University 56-0 on Saturday and Old Dominion University 50-26 on Sunday. VMI moved on to the Mid-Atlantic championships Nov. 21-22 in Richmond. To see more photos, visit [VMINews.tumblr.com](http://VMINews.tumblr.com), post date Nov. 9. - Photo courtesy of Col. Tom Trumps '79.

## Basketball Season Opens with Loss

The basketball team opened its season Nov. 14 in State College, Pa., with a 62-50 loss at Penn State, the alma mater of new Keydet coach Dan Earl.

The Keydets kept it close for a while, trailing by just five points early in the second half. But the Nittany Lions broke open the game with a 17-3 run and never looked back.

Julian Eleby '17 was the only VMI player to reach double figures in scoring, leading the Keydets with 13 points.

## Geary Selected For Three-Legged Stool Award

In other news, David Geary '16 became the first baseball player to win the Keydet Club's Three-Legged Stool Award. The award is given annually to the VMI athlete who personifies three important attributes of a VMI student-athlete: academics, athletics, and leadership.

On the diamond, Geary batted .285 with three home runs last season. He has also served on the Honor Court for two years, as president this year, and has been honored with a spot on the dean's list and academic stars.



## For Their Class Rings

Stewart Wilkinson '12, VMI Foundation assistant director of annual and reunion giving, presents a check for \$39,000 to Scott Frazier (left), Class of 2017 president, and Hamp Beddoes, class historian, on Nov. 13. Given every year as part of the Barracks Program, this gift represents the \$100 that members of the Class of 2017 received to support the purchase of their class rings. - Photo courtesy of Amanda Wilkinson.

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# Cadet Project Uses Infrared to Inspect Cameron Roof

By Kelly Nye

These days at VMI there is no shortage of construction sites, which makes it a great time to be a civil engineering major. It's especially convenient for Stephen Finlon '16, who is working on an independent study this semester on surveying roofs.

The major tool used for these surveys is an infrared camera, which was purchased with a grant from Dominion Higher Education Partnership. Finlon's adviser, assistant professor of civil and environmental engineering Maj. Paul Ackerman '93, and Thomas Campbell '14 wrote a proposal for the grant during the 2013-14 academic year. Then last year the camera was used by Phillip Frazier '15 to inspect the new Cormack Hall roof.

"The state requires on any new buildings that after a roof is placed it needs to be verified that the roof does not leak and does not hold moisture," explained Ackerman. "The infrared camera will detect changes in temperature, and if you have large changes in temperature, or what they call 'anomalies,' you know that you either have water damage or some insulation issues."

But the camera can also be used on an old roof to find where damage is occurring before it is replaced or repaired – which is

what Finlon is doing at Cameron Hall this semester. The Cameron Hall roof is over 30 years old and made of light-weight concrete, so it is due for replacement.

"With the survey at Cameron, we should be able to predetermine potential problem areas, before they replace the roof," said Ackerman.

First, Finlon participated in safety training provided by the VMI construction office and Branch and Associates, the company working on Cocke Hall.

Ackerman knows just how beneficial it is to have all of these projects at the cadets' fingertips. "With the VMI construction office and the contractors we're very lucky to have over 100 million [dollars] in construction right outside the classroom. ... It's been a great advantage. ... And [there are] definitely some complex projects that cadets can learn from."

Finlon is learning how to recognize structural problems in a roof – knowing, for example, the difference between a harmless air bubble and mold-harboring water damage. "Stephen will get trained in finding out what an anomaly looks like, then we'll take him through the stages of 'Can we rule out that it isn't water?'" explained Ackerman.



The infrared camera is used to assess the roof of Cameron Hall. – VMI Photo by Kelly Nye.

Finally, Finlon will research the difference between daytime inspections and nighttime inspections. The infrared picks up heat signals, so it is much easier to do a reading at night; however, being on a roof at night brings up safety issues.

"[In] some of this research we're trying to compare doing surveys in the day versus at night. It's a lot harder to do them during the day, but now with the technology we can detect smaller differences. I would say if the environment conditions are right, daytime surveys are an option. But we're still researching that," Ackerman said.

Finlon is no stranger to wet weather.

"I know I want to do something with civil engineering, but coming from Seattle obviously you deal with potential leaks a lot so this could be practical for getting a job outside. ... I've never done anything with infrared or thermal imaging, so I hopped on and thought it would be a good experience for me," said Finlon.

Ackerman sees in projects like this one an opportunity to help cadets get real world skills. "My goal was to get the cadets out and actually do stuff. ... They're not experts, but they just get a good working knowledge ... [and] experience they can put on their resume."



Stephen Finlon '16 and Maj. Paul Ackerman '93 inspect the Cameron Hall roof. – VMI Photo by Kelly Nye.



# POST BRIEFS

## VMI Receives Garden Club Award

Along with neighboring Washington and Lee University, VMI was awarded the Elizabeth Cabell Dugdale Award for Conservation by the Garden Club of Virginia at the club's 2015 Conservation Forum, held Nov. 4 in Lynchburg, Va. VMI was recognized for its commitment to conservation and energy responsibility, as demonstrated by the Institute's stewardship of the Chessie Natural Trail, along with its efforts to support recycling and energy conservation on post. In addition, VMI's hosting of the Environment Virginia Conference was noted as further evidence of commitment to environmental issues. Receiving the award on behalf of the Institute were Col. Jay Williams '83, post engineer; Lt. Col. Richard Fletcher, deputy post engineer; Larry Camper, chief of maintenance and operations; and J.B. Harris, grounds foreman.

## Flu Shot Exercise a Success

A new electronic sign-in procedure for influenza vaccines at VMI this fall resulted in shorter lines and more cadets electing to receive the vaccination. The new sign-in protocol was developed by the Department of

Information Technology. This year's exercise required all cadets to sign in, as part of a pandemic planning exercise, but receiving the vaccine was optional. As of mid-November, 908 cadets, or 53 percent of the Corps, had received the flu vaccine. During the 2014-15 academic year, 832 cadets had received the flu shot prior to Christmas furlough.

## Gerow Receives Early Career Award

Maj. Jennifer Gerow, assistant professor of economics and business, was recently named the recipient of the Early Career Award by the Association for Information Systems. The award, which was bestowed for the first time this year, recognizes individuals in the early stages of their careers who have already made outstanding contributions, through research, service, or teaching, to the field of information systems. In nominating Gerow for this award, Col. Robert Moreschi, department head, noted that Gerow is an "outstanding and energetic teacher," who has developed and implemented two new courses, Web 2.0 for Business and Business Leadership, since her arrival in 2011.

# Cadets Assist Family of Fallen Lexington Police Officer

By Chris Floyd

VMI boxing matches have never looked like this before.

With tuxedo-clad spectators watching from ringside and the team's national championship trophy on display, the Keydets battled each other and boxers from the University of Maryland in the first Andy Painter Classic Nov. 14 at Natural Bridge's Stonebridge Center. The black-tie event, the first of its kind in the area, was an effort to raise money for the family of Andy Painter, a Lexington police officer who died of cancer earlier this year.

"[From those] to whom much has been given, much is required," said VMI boxing coach Larry Hinojosa, who helped organize the event for his friend and supporter of VMI. "I feel like we've been given a lot with nationals, and my team, they know how important it is. That's just something we nurture."

Saturday's event wasn't the only charitable effort of the VMI boxing team. It recently sponsored a turkey drive to help feed needy families in the area on Thanksgiving. It completed a video project for a young cancer patient, and plans are in the works for a toy drive for the Christmas holiday.

"This is just a great group of guys," Hinojosa said. "They just want to keep on doing good. I couldn't be more proud of them."

Displayed in a glass case, Painter's uniform stood by the entrance to the arena while the VMI color guard and pipe and drum band ushered in the boxing portion of the program. With boxers and spectators alike pausing for a moment of silence, the ringside bell rang with a memorial 10 count.

"It's something that's customary for boxing if a famous boxer passes away," Hinojosa said. "I thought that was a nice way to [honor] Andy."

As far as the boxing is concerned, VMI's contingent posted a 2-2 record on the night. Jeremiah Sokol '18 defeated teammate John Winalski '16 by unanimous decision, while John Tartala '18 scored a technical knockout over Mitch McDonald '18

The University of Maryland boxers won the next two bouts. Jake Sato defeated Bryson Kelly '18, and Paul Neuberger remained undefeated with a win over Townsend Wilburn '18. Each winner received an Andy Painter Classic trophy for his victory.

But this night wasn't about the boxing.

"Andy wasn't here with us tonight," said Hinojosa, who noted that he and Painter had been planning an event like this before Painter's death, "but this is something I needed to continue with. I felt like there were a lot of positive things we could do in our community, and there was a lot of positive support."



Boxing coach Larry Hinojosa (left) and assistant coach Joe Shafer prepare boxer Jeremiah Sokol '18 for his match. - VMI Photo H. Lockwood McLaughlin.

# Aquaponics Project Provides Nutrition and Learning

By Mary Price

A project underway in VMI's Department of Civil and Environmental Engineering could someday bring better nutrition and improved health to people in the developing world.

Last month, in a once-abandoned greenhouse near the Natural Bridge Hotel in the southern part of Rockbridge County, Kyle Harrell '17 and Nate Whitmer '17 set up an aquaponics system designed to support the simultaneous raising of fish and plants. The word "aquaponics" is derived by merging the words "aquaculture," or the raising of fish, and "hydroponics," which is the cultivation of plants without soil.

VMI's aquaponics system is intended for use in the small mountain village of Pampoyo, Bolivia, where Keydets Without Borders has been working to improve water quality and sanitation for the past several years. Both Harrell and Whitmer were part of the group's 30-cadet delegation traveling to Bolivia last summer, and both hope to go back.

"Going down there the first time, people say that it's going to be life changing, and it is," said Whitmer of his desire to return.

Since the group's first trip in 2011, the villagers of Pampoyo have benefited from improved water quality and indoor

plumbing, said Lt. Col. Tim O. Moore II '97, associate professor of civil and environmental engineering.

Now, they are ready for help with another factor essential to good health: nutrition. Moore explained that because heavy metal contamination from mining operations has made the soils in the region highly acidic, only root vegetables grow well there.

"[The villagers are] not getting the right vitamins and minerals in their diets because they only eat meat and potatoes," said Moore.

The aquaponics system is designed to correct this. The base of the unit is a 275-gallon tank that's home to cold water fish – rainbow trout, in the case of the trial unit at Natural Bridge. Above the fish tank are two raised beds, made out of a 50-gallon oil drum that's been split down the middle and can be filled with gravel to grow vegetables.

Once the system is fully operational in Bolivia, villagers should be able to harvest vegetables on a daily or weekly basis, and fish at least once or twice a year. "Every six to eight months they'll wind up having a fish fry," Moore noted.

"It should be a fully self-sustaining system," said Harrell, who's worked alongside Whitmer this semester on a redesign of the system. While the two cadets did not begin

VMI's aquaponics project themselves – another cadet started it in 2013 – their major contribution has been a reworking of the system to avoid the use of electrical power.

"One of the biggest disadvantages of aquaponics is the dependency on electricity to pump the water to the system," said Whitmer.

Thanks to Harrell and Whitmer's work, the water in the system flows thanks to the use of a water ramp. "It's an old-style farming technique where they would use gravity and pressure to force water up a hill," said Whitmer.

The self-sustaining design of the system is likewise simple. Whitmer explained that the nitrogen in the fish waste is used as a fertilizer for the plants, and the gravel that the plants are growing in cleans the water.

The only maintenance the system needs, noted Moore, is the occasional addition of water to replace that lost by evaporation.

"Aquaponics uses 80 to 90 percent less water than your traditional irrigation on a farm," said Whitmer.

If all goes well, Moore hopes to implement the project in Bolivia next summer.

"We can actually get an in-the-field trial [at Natural Bridge] so we can perfect the design for what we need it to do when it's implemented in developing countries such as Bolivia," Harrell said.

The site at Natural Bridge was chosen, Moore explained, because the new owner of the Natural Bridge Hotel, Tom Clarke of Kissito Healthcare, hopes to have school children come on field trips to learn about sustainable agriculture.

Natural Bridge, the iconic landmark that Rockbridge County was named for, is already a popular destination for field trips. According to Sarah Rourke, project coordinator at Natural Bridge, approximately 8,000 students in grades kindergarten through 12 visited the bridge and nearby Monocan Indian village in 2014.

"We would like to create an educational facility [around the aquaponics project]," said Rourke. "It would be a good learning opportunity."

Moore concurred, saying, "The idea is to use it as a teaching aid in Natural Bridge and a supplemental source of nutrition in Bolivia. We're getting a lot of bang for the buck here."



Kyle Harrell '17 (foreground) and Nate Whitmer '17 install raised beds on top of the fish tank in the aquaponics project at Natural Bridge. – VMI Photo by Stephen Hanes.

## Keydets Without Borders Offers Service Opportunities Both Far and Near

The members of Keydets Without Borders don't stay idle long.

While the group is best known for its trips each summer to the small mountain village of Pampoyo, Bolivia, where cadets and faculty have brought clean water and indoor plumbing to households desperately in need, Keydets Without Borders doesn't limit its activities to South America.

In the works are a trip to Guatemala, planned for August 2016, and possibly a trip to China in the summer of 2017.

The trip to Guatemala is the brainchild of Vania Murcia '17, thanks to her friendship with a native of that Central American nation. Guadalupe Blevins, wife of a coach at the high school Murcia attended near Richmond, Va., is deeply involved with the Highlands Support Project, a nonprofit organization that helps the people of Guatemala overcome poverty.

Blevins will join Murcia and Lt. Col. Tim O. Moore II '97, associate professor of civil and

environmental engineering, on the trip to Xela, Guatemala, next summer. Others planning to make the journey are Tyler Brickles '15, who was president of Keydets Without Borders last year; Tommy Savarie '17; and Patrick Finn '16.

"We're keeping the numbers small because we're scoping it out for the future," said Murcia. She added that in years to come, Keydets Without Borders would like to take 10 to 15 cadets to Guatemala each summer.

Next summer's Guatemala trip, which will carry three academic credits for cadets, will involve building ventilated cookstoves for Xela's residents, as most still cook over open fires and the smoke from those fires has resulted in health problems.

But not every Keydets Without Borders trip requires a passport and airline travel. Last month, four members of the group traveled to Columbia, S.C., to help a homeowner rebuild after torrential rains resulted in flooding in that state earlier this fall.

The trip was a pilot effort for a new Keydets without Borders concept – a rapid response team capable of stepping up and pitching in whenever a natural disaster strikes in the United States.

The rapid response team was the idea of Sean Knick '16, president of Keydets Without Borders. Knick, though, was quick to deflect praise, saying, "I don't want to take credit for it because this is truly a team effort. And it's a thought that just came into my head."

Over the course of 2 1/2 days of work, Knick and three fellow Keydets Without Borders members – Murcia, Finn and Nate Whitmer '17 – worked to repair drywall and subflooring.

Knick found the opportunity after calling a church in Columbia to inquire if anyone in the area needed help. He said that the church's motto is one that he'd like to adopt for Keydets Without Borders: "You do for one what you wish you could do for all."

– By Mary Price

## James E. Rogers '67 Given Distinguished Service Award

By Scott Belliveau '83, VMI Foundation

Richmond-area businessman James E. Rogers '67 received the VMI Foundation's Distinguished Service Award during the Founders Day Convocation Nov. 11 at Cameron Hall. The presentation was made by Hugh M. Fain III '80, president of the VMI Foundation.

The VMI Foundation's Board of Trustees presented this award to Rogers for his many decades of service to VMI, which began in the late 1990s when he was appointed to the VMI Foundation's Board of Trustees. He served as a Foundation trustee for seven years and as its president from 2000 to 2002. Starting in 2004, he gave eight years of service to the VMI Board of Visitors and was a vice president from 2007 to 2012.

Rogers also was on the Executive Committee of VMI's fundraising effort, *Reveille: A Call to Excel*, from 1998 to 2004. He currently serves as a vice chairman of the *An Uncommon Purpose: A Glorious Past. A Brilliant Future: The Campaign for VMI* and is a member of the Jackson-Hope Fund's Board of Overseers.

The award citation notes that through this service, Rogers has made "innumerable

contributions" to the advancement of VMI and provided an example of dedication.

In his remarks, Fain described Rogers as someone who, "feels a special responsibility to do everything in his power to make VMI stronger to ensure it will enjoy a brilliant future, ... and the Institute he deeply loves is better for it."

He went on to say, "Many have admired Jim's service to the Institute, and many have drawn inspiration from it. If anyone here, especially among the Corps of Cadets, wants an example of leadership in support of VMI, you need look no farther than the example provided by Jim Rogers."

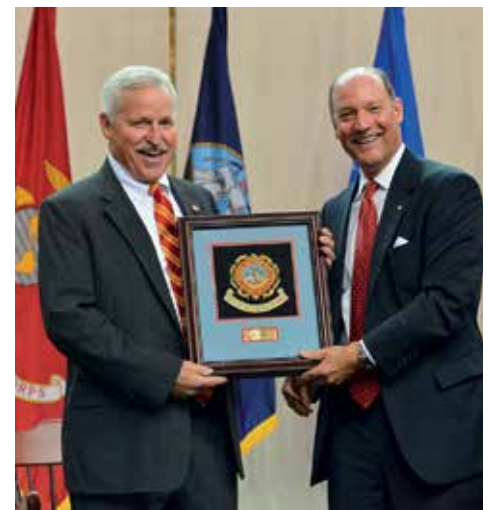
In his remarks, Rogers provided advice to each class of cadets. He also thanked the faculty and staff, telling them, "Your influence on our cadets is profound and will last a lifetime. The transformation that you bring about in them during four short years is nothing short of amazing."

He also paid tribute to the two members of his class who lost their lives serving in Vietnam, Brent Bell and Larry Scalin.

At the Founders Day parade, Rogers took the review with Gen. J.H. Binford Peay III

'62, VMI superintendent, and, afterward, met with several cadets. Earlier in the day, he met with the faculty and cadets of the Department of Physics and Astronomy, from which he received his degree.

To see more photos of Founders Day events, visit [VMINews.tumblr.com](http://VMINews.tumblr.com), post date Nov. 11.



James Rogers '67 receives the Distinguished Service Award from Hugh Fain III '80. – VMI Photo by H. Lockwood McLaughlin.

# A Sandwich and a Side Dish of Possibilities

## Chemistry Majors Talk Career Options With Alumnae During Networking Lunch

By Mary Price

What do you get when you put together three accomplished alumnae, a dozen or so chemistry majors, and a platter of sandwiches? Well, if you're Col. Daren Timmons and Maj. Kyle Bantz, you get a networking lunch designed to help chemistry majors see the many options available to them after graduation.

Timmons, professor of chemistry and department chair, teamed with Bantz, assistant professor of chemistry, to bring back three women who graduated from VMI with degrees in chemistry and are now putting those degrees to use in different fields.

"I've been thinking for a couple years about how to get the alumni more involved," said Timmons, explaining that he's wanted to see both male and female chemistry majors become aware of their post-baccalaureate options. With that end in mind, Timmons decided to invite back three alumnae and open the event to all cadets majoring in chemistry.

Returning to share their insights were Kacey Hall '13, who is pursuing a doctorate in chemistry at Duke University; Carolyn Lanier Kupper '07, who is working for Boeing Corp. in Charleston, S.C.; and Jill Hafer Berry '04, who is working for a defense contractor in King George, Va.

During the luncheon, the cadets listened as the alumnae described the sometimes winding paths they'd followed. For both Kupper and Berry, a career path that seemed appropriate right after graduation required tweaking as the years passed by.

Kupper admitted that she wasn't sure what she wanted to do after VMI, so she enrolled in graduate school at Virginia Tech. Unhappy there, she left for a job at an environmental lab and eventually accepted a position in Boeing's research and development division.

In her conversation with the cadets, Kupper stressed that a chemistry degree doesn't necessarily mean a job working with test tubes and Bunsen burners.

"You can take your lab experience ... and work in a factory or someplace else," she said. "Because you have that chemistry and technical background, you understand the different waste streams and different pollutants and hazards. You can have a job where you're never in a lab."



Col. Daren Timmons and cadets majoring in chemistry talk with chemistry alumnae (from left) Carolyn Kupper, Jill Berry, and Kacey Hall. - VMI Photo by Stephen Hanes.

Berry likewise didn't want a job in a lab. After VMI, she earned a master's degree in chemistry from the Massachusetts Institute of Technology before moving to King George with her husband.

"Having a technical background has really helped my career out," said Berry. "I put not my chemistry to use every day but what I learned as a chemistry major - my ability to research a topic, learn about it, ... and be able to explain it to someone in layman's terms."

Hall, now in her second year of doctoral studies at Duke, stressed the need to work with an adviser who won't let his or her students get sidetracked as they move toward a degree. She also talked about the need to develop writing skills, as scientists must write proposals in order to get funding.

"Learning how to explain your project is so important," said Hall.

Perhaps not surprisingly, the cadets wanted to know about real life after VMI. Zachary Kibler '16, who plans to commission in the U.S. Army, asked about options for life after the military and expressed some concern about going back to school several years down the road.

"You're light-years ahead of your counterparts going into the Army, because you're thinking about what happens after those

four years," Berry reassured him, after mentioning that the GI Bill would likely pay for some undergraduate refresher courses if he wanted to pursue graduate study later.

Another cadet asked Hall how much free time she had. "Grad school is much less structured," she replied. "You make your own schedule. ... I make time for the things I want to do."

Cadets who attended the lunch said they were grateful for the insights they'd gained. Sam Shepherd '18 said she'd picked up a "new perspective" on her options after graduation. "I love research, but I really don't want to do it for five or six years," she commented.

Micah Gorman '16 likewise found himself reassured that his choices aren't as limited as he'd thought. Kupper's story, he remarked, offered him a glimpse into a career that he hadn't even considered. Who would have thought, he wondered aloud, that a major aerospace company would hire someone with a chemistry degree?

"I'm kind of at the point where she was, not sure where I want to go with my career in chemistry," he said. "There's hope. Even though I don't know right now exactly what I want to do, I'll find what I'm interested in. ... A lot of people actually need chemists."

## Air Force Cadets Hold Dining In and Serve Community

Information courtesy of Air Force ROTC

Air Force ROTC cadets planned, organized, and hosted a Dining-In, the opening event of this year's Fall Field Training Exercise, in Marshall Hall. The speaker, retired Chief Master Sgt. Michael Tanguay, a career agent with the Office of Special Investigations, offered entertaining and insightful remarks spelling out the expectations and responsibilities of future second lieutenants from an enlisted airman's perspective.

The event provided a memorable introduction into Air Force customs and traditions.

During the FTX, the Air Force Cadet Wing performed community service at 12 locations that included helping out the SPCA, building homes for Habitat for Humanity and a food drive for the Rockbridge Area Relief Association. One hundred fifty cadets performed almost 600 hours of community service and collected 1,700 pounds of canned goods for those in need. Cadets also helped out at Hoofbeats, a center that provides horseback riding for people with disabilities.

The unit was led in these activities by Col. Robert Webb, who took command of Detachment 880 in July. Webb, who began his career in the Navy, arrived at VMI directly from a deployment in Iraq. Influenced by his father, who flew P-3s, Webb began his aviation career as an instructor pilot in the A-4 Skyhawk, then transitioned to the F/A-18 Hornet and flew combat missions in Bosnia and



Air Force ROTC cadets work on a Habitat for Humanity house outside Lexington during Fall FTX. – VMI Photo by Stephen Hanes.

Afghanistan. Since transitioning to the Air Force in 2002 through the Interservice Transfer Program, Webb has been stationed at Cannon, Shaw, and Luke Air Force bases as flight commander, director of operations and finally as vice wing commander. He also commanded a squadron at Balad Air Base, Iraq.

Asked about his favorite assignment, Webb commented, "There is no such thing as a bad assignment – each is unique and brings different challenges, opportunities, and rewards."

## Founders Day Dinner Honors Leaders in Support of VMI

By Scott Belliveau '83, VMI Foundation

The VMI Foundation welcomed 583 alumni and friends to its annual Institute Society dinner on Founders Day, Nov. 11, in Marshall Hall. This event honors alumni and friends who give unrestricted support through their annual gifts to the Foundation Fund.

"Since the mid-1970s, the Institute has made it clear that, in order for it to meet critical needs, such as enhanced support of our faculty and staff, the Institute needs a significant amount of unrestricted money every year," said Brian S. Crockett, VMI Foundation CEO. "The alumni and friends we honor at this annual dinner are those who step up with significant annual gifts of unrestricted support."

After dinner, Hugh M. Fain III '80, VMI Foundation president, thanked the guests for their support toward VMI in fiscal year 2015.

"You have all taken a stand for VMI with your generosity. ... You have demonstrated to cadets that their education is important, you supported faculty innovation with more resources, and you gave the athletics program the funds it needs to attract cadet-athletes and coaches who honor the proud traditions

December 2015

of VMI," said Fain. He noted that the VMI Foundation and VMI Keydet Club received a record amount of gifts and commitments: \$56.2 million, of which \$32 million was in cash.

"The Institute Society's sustained generosity continues to be a significant force behind these impressive numbers," he said. He also recognized the classes, including the Class of 1965, which had conducted successful reunion campaigns, raising a grand total of \$14.6 million.

VMI's superintendent, retired U.S. Army Gen. J.H. Binford Peay III '62, acknowledged the Society's support, updating guests on the progress of An Uncommon Purpose: A Glorious Past, A Brilliant Future: The Campaign for VMI: \$239 million in gifts and commitments from 13,279 donors.

Peay provided guests the opportunity to see living examples of the power of private giving to VMI. On stage with him were three cadets, Derrick Ziglar '15, Mackenzie Harrmann '16, and Tyler Lighton '15, and two members of the faculty, Col. James Turner Sr. '65, head of the biology department, and



Hugh M. Fain III '80 addresses the near-capacity crowd during the Institute Society Dinner. – VMI Photo by H. Lockwood McLaughlin.

Lt. Col. Tim Moore '97, associate professor of civil and environmental engineering.

"Last year, we kicked off the campaign at the Institute Society Dinner by announcing that it had raised \$183 million in its so-called 'quiet phase,'" concluded Crockett. "It was fitting to make the announcement of the campaign's excellent progress in front of this audience as well as to show them the impact their generosity and that of other members of the VMI family is having on our cadets, our faculty, and the Institute as a whole."

# Thirty Employers, 450 Cadets Attend VMI Career Fair

By Chris Floyd

College graduates entering the workforce face a challenge finding their first professional positions.

VMI grads, of course, have a leg up on their competition with the Institute's unique alumni network, and, recently, about 450 current cadets got another boost.

The Office of Career Services held a Career and Internship Fair Oct. 27 in Marshall Hall, the first such event held on post in quite a while, and early reviews say it was a rousing success.

"Responses were very, very positive," said Col. Sam Ratcliffe '74, director of career services. "People from Wells Fargo said it was the best one they had been to in a long, long time. The feedback was positive from cadets, too."

One of those cadets was Myranda Emery '16, a psychology major who will be graduating in December. Like many getting ready to enter the workforce, she was not sure what she would be doing after receiving her diploma. She does not have to worry about that anymore.

"The career fair was extremely helpful to me," she said. "Because of the career fair I was able to get an interview and actually accepted a job offer. It is so nice that I have a job already lined up before graduation. I do not think that I would have had this opportunity if it was not for the career fair. So thank you, Career Services!"

If cadets like Emery landed job offers from any of the 30 employers who attended the fair, that was a bonus. The real goal of the fair was much simpler. Ratcliffe and his staff just wanted contact.

Ratcliffe said he knows that if he can get an employer on post, face to face with a cadet, that cadet is going to impress, and the career fair provided many such opportunities.

"The career fair itself provided an opportunity in a single day and in a single location to have that initial interaction opportunity with 30 organizations," Ratcliffe said. "You're not going to do 30, but if you do six or seven,



Caitlyn Jackson '16, Jackson Kim '16, and Sam Hudson '17 talk with Anthony McAtee '15, VMI campus ambassador for Peace Corps, and Peace Corps recruiter Tracy Borden. - VMI Photo by H. Lockwood McLaughlin.

it's a good day. You walk away with lots of contact information.

"[The cadets] also had a chance to practice their professional interaction with recruiting representatives," Ratcliffe added. "Cadets got to practice how to present themselves effectively either as candidates for internships or for employment opportunities. Career fairs provide a wonderful vehicle for doing that."

Those opportunities were not lost on Joshua Gutjahr '16, a civil and environmental engineering major who served as cadet in charge for the career fair. He realized such an event can be extremely beneficial for students, especially those who have numerous demands on their time.

"Being at VMI, it is hard to get out and meet different employers without having to overcome several obstacles," Gutjahr explained. "Having a career fair on post gave cadets an easy way to connect with employers without having to leave ... VMI."

Gutjahr also reaffirmed Ratcliffe's assertions that the career fair was a great way to practice skills he'll need to be selected for employment.

"Meeting with all these employers gave me a chance to practice how to make a good first impression, which in turn helps with the interview process," he said. "Having this career fair will help me as I prepare for graduation."

Naturally, Ratcliffe and his staff did not let these cadets wander into the career fair unprepared. Both he and Maj. Dorothy Hayden, the assistant director, spent time getting their students ready for the event.

"We had prep sessions on how to best utilize the career fair," Hayden said. "We spent a whole class period talking about how to do the research. It's not just about the day of, getting there and speaking. It's also about making sure ahead of time that you have a game plan."

The game plan seemed to work. Emery got the job offer. Gutjahr got to practice his presentation. Other cadets came out of the career fair asking about the next one. And there will be a next one.

"This was such a great event for us," Ratcliffe said. "Certainly I see this being at least an annual event. Now that we have the logistics hammered out, it will be easier to pull off."

# CEE Trip to Kiewit Opens Cadets' Eyes to Possibilities

By Mary Price

The old saying goes that there's no such thing as a free lunch. But what about an event that includes not only a free lunch, but also a free breakfast and dinner? For 29 engineering majors at VMI, that's exactly what happened last month when they visited the Cove Point, Md., site of Kiewit Corp., a multibillion dollar construction firm doing work all over the globe.

"[Kiewit does] the crazy stuff – the big rigs, the pipelines," said Capt. John E. "Ned" Riester '78, chair of the Department of Civil and Environmental Engineering, who accompanied the cadets on the trip.

Riester explained that VMI's relationship with Kiewit began several years ago, when Lauren Evans, manager of university relations for Kiewit, came to Lexington with her husband, Robert C. Evans '02, and took several members of the civil engineering department faculty out to dinner.

In the spring of 2014, Evans returned to the Institute, spoke to two sections of the production management class taught by Rear Adm. Wayne "Greg" Shear Jr., and then took a group to dinner. Thanks in part to her efforts, at least five alumni who've graduated in the last two years have gone on to work for Kiewit, and Evans knows of at least seven alumni overall employed by the company.

Two of those alumni – Jayson Schaufert '15 and Mason John '15 – flew in from Kiewit's Kansas City, Mo., design office to accompany the cadets to Maryland last month.

The overnight visit included a dinner with Kiewit engineers and a classroom briefing the next morning before moving on to the *piece de resistance*: a \$4 billion facility currently under construction by Kiewit that will liquefy natural gas so it can be exported. Riester termed the Dominion Cove Point Liquefaction Project "monstrous" in its scope.

Agreeing with Riester was Emmanuel Cooper '15, who said he'd seen construction on a scale so large it dizzied the mind. "It was

amazing, just huge," he said.

"The most interesting thing is that they've got over 2,800 people on the site at the peak and it's still so well organized," said Cooper. "Everybody's doing a specific job at a specific time. ... Personally, if they threw me into that situation managing 2,800-plus people, I'd go crazy."

Sean Knick '16 was likewise impressed with the scope of the work. Before the trip, he'd looked up Cove Point online, and that fueled a desire to see what a 40-acre job site really looked like. "I wanted to witness that," said Knick.

Knick was also impressed with the alumni who came back to share their insights on Kiewit. He'd known Schaufert and John when they were cadets, but when he boarded the bus with them, he discovered that much more had changed than their clothes.

"I could see that transition just through talking with them – mostly their professionalism and their knowledge of what they were doing," said Knick. "The conversations and the way they presented themselves were more mature and more professional."

It's that ability to glimpse the world waiting just outside the VMI gates that Riester wants for cadets majoring in civil and environmental engineering. He noted that while he can remember very little classroom work from his own days at VMI, he remembers the field trips vividly:

"It's very important to get out of the classroom and see how this stuff actually happens."

Lauren Evans agreed, saying, "We definitely believe in experiential learning."

There's also a multitude of possibilities within the construction industry – possibilities that cadets might not see if it weren't for trips like these.

"There's a ton of different disciplines and markets," said Evans. "We wanted to show [the cadets] how marketable their degrees are."



Cadets pose with Capt. Ned Riester '78, Lauren Evans, Jayson Schaufert '15, Mason John '15, John Newton '97, and others at the Kiewit Cove Point, Md., site. – Photo courtesy of Capt. Ned Riester '78.



## Wind Tunnel *continued from page 1*

“[The drag polar] is probably the most important parameter for predicting an aircraft’s performance,” said Blandino.

In previous years, Blandino noted, the flight mechanics class has been limited to paper-and-pencil calculations because the wind tunnel has frequently been inoperable due to maintenance issues. This year, thanks to the efforts of Mike Cullen, the department’s lab mechanic, the tunnel has been a viable option.

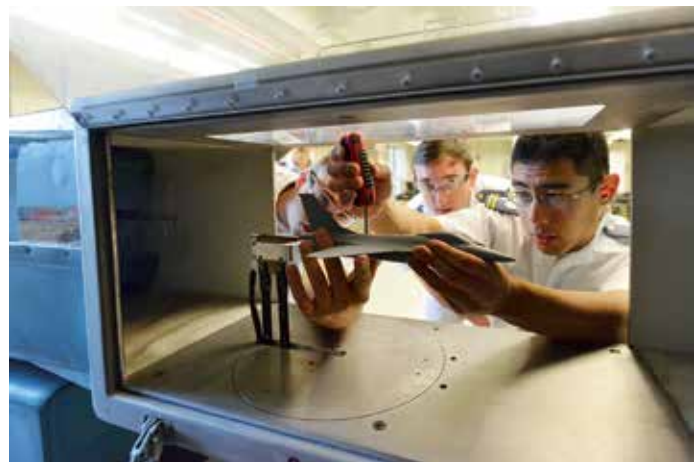
Not surprisingly, the cadets in Blandino’s class said they were grateful for the opportunity to perform real-world testing.

“Doing it this way is very intellectually stimulating,” said Mauro De Leon ’17. “This project is very much in tune with what I’d like to do in the future.” Fascinated with airplanes since middle school, De Leon hopes to work in the aerospace industry.

Gage Snowbarger ’16 noted that while the department has a large model of the F-16, being able to use the small model provided flexibility.

“It’s been interesting to be able to analyze its performance,” said Snowbarger, who plans to commission as a pilot in the U.S. Air Force. The flight mechanics class, he noted, has given him a “head start” on pilot training.

Mike Matthews ’16 is headed for the U.S. Army, not the Air Force, but he too was grateful for the chance to step out of the classroom and into the lab.



Gage Snowbarger ’16 helps Mauro de Leon ’17 position the F-16 model in the wind tunnel. – VMI Photo by H. Lockwood McLaughlin.

“All of the data for airplanes comes from wind tunnels,” said Matthews. “This is the kind of data they would have done when they were designing the F-16. Now we’re reproducing it, and that’s pretty awesome.”

To see more photos, visit [VMINews.tumblr.com](http://VMINews.tumblr.com), post date Nov. 13.