Holiday Cheer

The Institute is getting into the holiday spirit as the semester wraps up before Christmas Furlough. Cadets enjoyed a Thanksgiving meal in Crozet Hall Nov. 14, where they were treated to carved meats, sparkling cider, and holiday pies, and the Corps was treated to a Christmas meal Dec. 7. —VMI

Photos by H. Lockwood McLaughlin and Kelly Nye.

Swim Team Breaks Records Under New Leadership

By Chris Floyd

When it comes to the VMI swimming team, it’s all about time.

And if that is the case, then the Keydets seem to be right on schedule.

Through five dual meets and one invitational this year, VMI has already seen three school records fall and individuals on the team are posting personal-best times at a furious pace. That has new head coach Andrew Bretscher beaming.

See Swimming and Diving Team, page 9
Campaign Success Celebrated at Institute Society Dinner

By Scott Belliveau ’83

On Nov. 10, the success of An Uncommon Purpose: A Glorious Past, A Brilliant Future: The Campaign for VMI was celebrated at the Institute Society Dinner, a celebration held in Marshall Hall. Throughout the evening, speakers addressed the audience next. He reiterated the news that the campaign raised $344 million from 15,000 donors—a staggering success that advanced the Institute and changed countless lives in the process.

Cadets Present Research at SURF Symposium

By Mary Price

Five cadets recently had a chance to share their research projects with the outside world when they traveled to the Southern Conference Undergraduate Research Forum, held Oct. 27-29 at Wofford College in Spartanburg, South Carolina.

This is the second year that SURF, as the event is popularly known, has been held, and the second year that VMI has participated. This year’s event attracted approximately 150 students, faculty, and staff from all 10 colleges and universities that are members of the Southern Conference.

Maj. Josh Iddings, director of the VMI Center for Undergraduate Research, accompanied the cadets and joined them for many of the presentations. “We had lots of great conversations about presentations that were given by students at the different schools,” he noted.

Before the conference, Iddings had coached the cadets on how to ask questions of presenters so they could participate more fully in the intellectual milieu of the forum.

Iddings also remarked that he was pleased to see how well the cadets presented their own research—and that while it’s easy to see athletic prowess on display, it takes a special situation such as SURF to see a high level of academic proficiency.

“The cadets are able to really shine,” said Iddings. “You get to see them take their academic world and perform really well. … I don’t think I’ve seen a cadet at SURF in the past two years get stumped on a question.”

Steven Foster ’18, who’s double majoring in modern languages and cultures and international studies, presented his honors thesis research on Mexican narcocorrido music, which Foster described in his presentation abstract as “Mexico’s equivalent of gangster rap.”

Foster explained that he’s been studying Spanish since middle school, and he’s delved into Mexican culture by seeking out friends from that nation. Those friends introduced him to the narcocorrido music that glorifies the sicario, or drug cartel assassin.

At VMI, he discovered that Dr. Sabrina Laroussi, assistant professor of modern languages and cultures, had written her dissertation on drug cartel assassins in Colombia, so he decided to team up with her for an independent study and honors thesis.

Heading into SURF, Foster had written up a script for his oral presentation, but wound up ditching it at the last minute so he wouldn’t be just reading to his audience.

“I played the first minute of the most brutal song I could find that’s really popular,” he noted. He then spoke to his audience of approximately 20 people about what he’s learned through his research before taking questions.

“People were really interested in this topic,” said Foster. “I got a lot of questions … They were definitely interested in the stark contrast that these songs have, kind of like the positive vibe these songs have. They have the traditional Mexican style, kind of like a mariachi band, but the lyrics are really dark.”

Foster said that he was grateful for the experience of presenting at SURF. “I was a little nervous, because I’d never done a research presentation like this,” he commented.

But once the jitters were over, Foster was very glad he’d gone. “This is an opportunity that not many cadets take advantage of, especially in the liberal arts,” he said.

Julia Logan ’18 also said she was glad she’d gone to SURF. Logan, a chemistry major, gave a poster presentation on the summer research she conducted with Maj. Susan Borowski, visiting assistant professor of chemistry, on how to identify ruthenium-based catalysts best able to lower the amount of carbon dioxide released into the atmosphere.

“This was another opportunity for me to get presenting skills down, and be around other people who are doing similar topics,” said Logan.

Logan also said she was happy to have had the chance to listen to others present their work. “I just think it’s very important to be knowledgeable, not only on your own subject, but to be well-rounded,” she remarked.

Putting together her poster also made Logan step back and come to an important realization. “Having it all laid out on a poster really made me see just how much I’d put into it,” she said, “and how much I’d learned over the summer.”

In addition to Foster and Logan, other cadets attending and presenting research were Sadie Sandifer ’20, Reid Wilkinson ’20, and Amber Woodard ’18.
Basketball

VMI scored the first eight points of the game and never trailed, sprinting past Presbyterian 78-58, for the team’s first victory of the season Saturday, Nov. 18, in Cameron Hall.

The Blue Hose rallied after falling behind early and tied the game at 10-10, but Austin Vereen ’19 scored the next 10 points of the game to put the Keydets ahead for good. Vereen led VMI with a career-high 22 points in the victory, while Tyler Creammer ’20 tallied 19 points and pulled down nine rebounds for the Keydets.

Will Miller ’20 chipped in with 12 points as VMI won its home opener for the third straight year.

Rifle

VMI’s mixed rifle team also picked up its first win of the year, scoring 4,494 total points to top Wofford and the University of Alabama-Birmingham Saturday, Nov. 11, in Lexington. John Pitman ’19 tallied 563 points to take top scoring honors for the Keydets, who placed four shooters in the top five individual scores.

Cross Country

The VMI cross country teams wrapped up their seasons at the Southern Conference Championships in Spartanburg, South Carolina, in late October.

On the men’s side, Kyle Sabourin ’19 paced all VMI runners, sprinting to a 17th-place finish in 25 minutes, 24 seconds. As a team, the Keydets placed fifth. Furman, which placed six runners in the top 10, took the team title.

For the Keydet women, Logan Luckett ’20 and Bethany King ’18 placed 26th and 27th, respectively, as VMI placed ninth in the team standings. Furman continued its cross country dominance at the meet, winning its fifth straight SoCon title.

Women’s Soccer

The women’s soccer team lost a heartbreaker in the quarterfinals of its Southern Conference tournament Oct. 29, falling to Western Carolina, 1-0, in Cullowhee, North Carolina. With the loss, the Keydets wrapped up the 2017 campaign with a 7-11-1 over-all record.

At the end of the season, VMI’s Amy Horney ’18 was honored by the SoCon, receiving second-team all-conference recognition. The Keydet record holder with 78 games played and started, Horney, a defender, finished the season with two goals and became the first VMI women’s soccer player to earn all-conference honors since 2011.

Wrestling

VMI wrestlers joined close to 500 other competitors from across the country Nov. 16 in Blacksburg for the annual Hokie Open, and several Keydets just missed opportunities to wrestle for medals. Hunter Starner ’18 (133 pounds), Taylor Tomas ’18 (197), and Clifton Conway ’21 (125) all won two matches for the Keydets at the prestigious intercollegiate event.

Football

The Keydets fell to Wofford, which claimed the Southern Conference title with the victory, 45-14, Saturday, Nov. 11, in Lexington. With the setback, the Keydets wrapped up an 0-11 campaign.

The Keydets, who averaged eight points per game in 2017, were led by Kris Thornton ’21, who finished the game with 12 catches for 108 yards and two touchdowns, all career highs. Reece Udinski ’21 became the third quarterback to start a game for VMI this season, and his first career start, he completed 24 of 40 passes for 207 yards.

Defensively, the Keydets were led by Allan Cratsenberg ’18, who finished the game with 10 tackles to move into third place on VMI’s all-time tackles list.
Seven cadets majoring in chemistry recently had the chance to get a much broader look at their field when they attended the Southeastern Regional Meeting of the American Chemical Society, commonly known as SERMACS, held Nov. 7-11 in Charlotte, North Carolina.

Attending SERMACS this year and presenting their research were McKenzie Raber ‘18, Samantha Shepherd ‘18, Daniel Chisner ‘19, John Dickenson ‘20, and MacKenzie Haley ‘20. Two other cadets—Julia Logan ‘19 and Matthew Rowe ‘18—attended but did not present.

The cadets were accompanied by Maj. Daniel Harrison ’05, assistant professor of chemistry, whose research centers on creating a carbon-neutral society through the synthesis of renewable fuels. While at SERMACS, Harrison gave an oral presentation on the stability of solar cells in a subsection of the meeting that was a joint symposium for the Solar Energy Research Center (SERC) based at the University of North Carolina at Chapel Hill.

Chisner, who’s been working in Harrison’s lab since his 4th class year, presented research he’s done on attaching ruthenium complexes onto an electrode surface to capture sunlight and convert it into energy that can be used to make solar fuels.

When he and the other cadets arrived at SERMACS, they discovered that they were presenting during the section of the conference attended by many graduate students. “It was pretty cool because a lot of the grad students would come up because they knew Maj. Harrison and they would ask us questions about our research,” said Chisner.

“They asked some questions where you get a little intimidated by them, but overall Maj. Harrison explains the research pretty well to us, so you know what’s going on,” he added. “It’s relatively complicated chemistry but he teaches it well.”

Chisner said that his time at SERMACS was well spent. “You get to see other people present their research and it gets you used to presenting and public speaking,” he stated. “And also you get a feeling for the scientific culture. It’s pretty cool seeing other people and what they’re doing, and you get an idea of where your research should go based on what they’re doing.”

Also getting much out of her trip to SERMACS was Raber, who, like Chisner, began her work with Harrison during her 4th class year. She gave a poster presentation on her Institute Honors thesis, which has to do with improving the stability and efficiency of solar cells.

Raber explained that the maximum efficiency of solar panels is 33 percent, but their working efficiency is closer to 10 percent.

“Oftentimes it takes more energy to build and implement solar panel energy than to use less natural forms of energy,” she noted. She and other cadets working in Harrison’s lab are looking for ways to improve the efficiency of solar cells, and thus solar panels, by finding more efficient catalysts to convert solar energy to electric energy. There’s another need, too: solar cells degrade over time, so anything that can extend their lifespan would be beneficial.

“By searching for a material that conducts the most current or the energy for the longest without degrading, you now have a source or material that is more feasible in the long run and actually has the potential to be capable of being cost-effective while also conducting more energy,” said Raber.

Because interest in renewable energy sources is so high right now, Raber found herself surrounded by listeners and questioners at SERMACS. “Everyone wants to know what you’re doing and the science behind it,” she said.

Some of the questions, she noted, were helpful in terms of a future direction for her work. “You get that outside perspective from scientists in the field,” Raber commented.

She described the massive conference, which attracted 2,500 people this year, as “a hub of learning” that opened her eyes to the huge amount of work being done by chemists to solve some of society’s most pressing challenges.

“You’re just surrounded by new ways of approaching problems that have been around for decades,” she said.

It’s experiences such as Raber’s and Chisner’s that drive Harrison to make cadet attendance at SERMACS a priority each year. “I knew we (the chemistry department) achieved our goal of opening their eyes to the scale and importance of chemistry research with the continuous visits from them telling me about posters or presentations that they had seen, asking questions about them, etc.,” Harrison wrote in an email.

“It also gives perspective on how excited folks are about our research,” he continued. “It is a really good opportunity to judge the level of interest in our research via post-presentation questions and conversation.”

Funding for the cadets’ travel to SERMACS was supplied by the VMI Center for Undergraduate Research.
From STEM to STEAM
English, Mechanical Engineering Departments Collaborate in the Visual Field

By Mary Price

It’s not very often that a humanities professor teaches a class of mechanical engineering majors in Nichols Engineering Building—but that’s just what happened on Monday, Nov. 13, as Maj. Julie Brown, assistant professor of English, rhetoric, and humanistic studies, gave a lesson in drawing from observation.

Brown’s lesson was part of FACE, or Fine Arts Collaboration with Engineering, a project newly undertaken this semester by Brown, a sculptor and painter, and Col. Jay Sullivan, professor of mechanical engineering and a weekend sculptor whose works adorn the Boxerwood Nature Center & Woodland Garden.

Supported by a $42,000 grant from the Jackson-Hope Fund, the project involves the purchase of portable 3D scanning equipment and software to be shared at first between the Department of English, Rhetoric, and Humanistic Studies and the Department of Mechanical Engineering. Later plans call for faculty outreach to all departments on post and additional broad interdisciplinary collaborations.

Sullivan said that he and Brown had met through membership in various committees on post and realized that despite their differing disciplines, they had a good amount of overlap in terms of skills. What’s more, they realized that STEAM—science, technology, arts, and mathematics—is a viable model for learning.

“A lot of the schools like MIT and other schools that are leaders—they’re going more and more into this kind of thing,” said Sullivan. “We’re trying to go in a similar direction, at least as much as it makes sense to do so.”

The mid-November drawing session brought together nearly 20 3rd class mechanical engineering majors enrolled in their department’s required statics class. “They’re just about to blossom into these practical engineering problems that are inherently three dimensional,” said Sullivan, explaining why this particular group of cadets could benefit from a drawing lesson.

At the beginning of the class, Brown handed out paper, small plastic cups, and plastic building blocks, along with charcoal for sketching. She then coached the cadets through a lesson that included segments on how to manage the compositional space of the picture plane and make an image “pop” from the paper in three dimensions.

Cadets attending the lesson said they were glad they came.

“I actually really enjoyed it,” said Jonathan Peace ’20. “I like drawing in 3D, although I’m not very good at it. After I came here, I realized it was definitely worth doing.”

Noah Enix ’20 admitted that while the lure of a free lunch—pizza and cookies—had brought him through the door, he wound up learning more than he thought he would.

“I think [engineers] can benefit greatly from [drawing lessons], especially if we’re doing three-dimensional things,” he commented. “Engineers are exact. If you don’t get proportionality correct, it’s going to make it extremely difficult to understand what you’re looking at.”

Cole Christian ’20 agreed that the hour-and-a-half lesson had been worthwhile.

“We’re learning something we can apply to our engineering that other schools might not necessarily have,” he noted.

Going forward, Brown is looking to begin including other disciplines such as art and photography into the curriculum.
departments in the initiative. During the spring semester, she and Sullivan will give a Pedagogy 400 forum on use of the scanners to their colleagues across post, and next summer they hope to write a proposal for a joint honors seminar to be offered during the 2019-20 academic year.

“Different departments are going to have different ways of using this technology,” Brown noted. She explained that in her department, a colleague teaching a Shakespeare class might create a digital archive of objects that would have been relevant to the text or create an interactive digital text with scanned objects.

Soybean Plants Focus of Faculty-Cadet Research

By Ashlie Walter

A team of cadets joined Lt. Col. Anne Alerding, associate professor of biology, in soybean fields across the state to find a way to increase the plants’ production. With their field work complete, the cadets are joining Alerding in the lab in an effort to breed plants with as much as a 20 percent higher yield.

The research project started six years ago, when Alerding and her cadets were looking for a way to turn the plant materials left over after harvest into biofuels. After retooling her hypothesis, Alerding received a grant from the Virginia Soybean Board to study how branching could affect production in soybean plants.

“Soybean farmers want to take a given amount of land and increase the number of seeds,” she said, explaining that plants with a higher proportion of stems or branches could be allocating resources to the stem structure that could instead be used to produce seeds.

Many soybean biologists tend to study how to increase photosynthesis, but few study stem growth.

“If you are a plant and putting more energy into branching, you won’t have much left for seeds. I estimated this could, for a given amount of land, produce 20 percent more seeds,” Alerding said.

Alerding connected with David Holshouser at the Virginia Tech Extension Office’s Tidewater Agricultural Research and Extension Center to use two farms for her field study. The two sites selected were in Suffolk and Orange because of the variety of planting soils.

In the summer of 2016, Alerding connected with Dr. Aryeh Weiss of the Bar-Ilan University in Israel to help with using ImageJ in her research. Weiss and Slone developed a mentor-student relationship via Skype to make improvements to ImageJ.

“At this point, I’ve definitely improved my skills on how to look at a problem just because of how difficult it is,” said Slone, “Right now it has been a good experience.”

Laura Davis ’17 started VMI as a chemistry major but switched to biology and Alerding was assigned as her adviser two years ago.
Cadets Keep Institute Traditions Strong

By Ashlie Walter

Some of the oldest traditions on post—the precise marching of the color guard, the sounding of bugle calls, and the firing of the Cadet Battery—have evolved since the Institute's founding, but they remain integral to the rhythm of the Institute. The responsibility for maintaining those traditions falls largely on the cadets who devote their time and talents to the effort.

Col. John Brodie, band and Glee Club director, takes pride in the fact that cadet musicians still play Reveille each morning and Retreat each evening.

John Dickenson ’20 became involved with the buglers based on his experience playing trumpet and through word of mouth. “From bugling, I have learned that confidence is key when you do anything because you can know the calls forwards and backward but if you get up there and doubt yourself, the notes won’t come out,” he said.

The highlight of the year for him was playing To the Colors every morning during Matriculation Week. “I enjoyed watching the whole rat mass circling the parade field at the end of the workout.”

Many of the same cadet musicians who sound bugle calls are also part of the VMI Herald Trumpets, which plays five to six events a year, including the Institute Society Dinner, sporting events, and the Marshall Foundation Awards in New York City. The cadets play trumpets donated to the Institute in the 1970s.

“It’s very nice to have a little mobile group of trumpets that can do that,” Brodie said.

Another source of pride for the Institute is the Color Guard. The cadets carry the three flags—the U.S. flag, the Virginia flag, and the VMI flag—in every parade and in many ceremonial events off post.

Ben Dixon ’19, regimental sergeant major, described the VMI color guard as a ceremonial, honor-bound group that guards and carries the colors. “You carry that flag with honor, you represent the Institute. When we march in a parade, you are supposed to have the best uniform,” he said.

The guard has also had the privilege of traveling to places outside the country, such as London, and next year they will travel to Italy.

Closer to home, the color guard opens many events at the Virginia Horse Center. In the past, the VMI color guard has been called to attend the reopening ceremony for James Madison’s historic home in Orange County. They have also routinely travel to NASCAR races and marched in Mardi Gras parades in New Orleans.

Dixon added the discipline he learned in the color guard will come in handy when he commissions into the Navy, hopefully as a Navy SEAL.

The color guard has a vibrant history as well. During a meeting with the Richmond Volunteers in early 1842, a VMI color bearer Cadet William S. Beale, Class of 1843, sprang onto the table, grasped the flag in his right hand and announced, “let him bear it who is able to defend it,” according to Col. William Couper’s One Hundred Years at VMI.

The volume goes on to say “it was a happy response and one which all VMI color bearers should take to heart. They are picked for their soldierly bearing.”

Brigitta Hendren ’19 said the most important things she has learned through supervising the 2nd battalion color guard are respect for the flag and pushing her boundaries. “It forces me out of my comfort zone. I like to be in the background; it’s a little bit nerve-wracking at football games having all eyes on me, but that’s okay,” she said.

Another tradition maintained by cadets is the Cadet Battery, which has the daily responsibility of firing the evening gun, signaling the lowering of the colors to everyone on—and for miles around—post.

The Cadet Battery’s big performance is Founders Day in early November, firing the four 105mm howitzers in a 17-gun salute. Matt Heinrich ’18, commander of the Cadet Battery, said his crew spent nearly 20 hours for this year’s event practicing the routines, the performance, and cleaning the guns.
Swimming and Diving Team

"I'm very pleased with how it's going so far," the first-year mentor said. "We've put up some very, very strong times. It seems like at all of the meets thus far, we're above the times from last year. We're right there. It's all about times in swimming."

Bretscher, who was a three-time All-American while swimming at Ohio State and turned around the swimming and diving program at Norwich University before coming to VMI, is ecstatic about his team's growth this early season, despite the fact that the Keydets have won just once in the early going. One has to remember, however, that is not what's important here. Remember, it's all about time.

"Putting up a lot of good times, breaking a lot of records, qualifying a lot of people for the [Eastern College Athletic Conference] championships are our team goals," the VMI coach said. "That's what I'm focusing on. Dual meets are just a way to train for championships. Win-loss in dual meets isn't nearly as important as how we're going to swim at championships."

The first step on the road to the ECAC Championships is the America East Championships, which will be held in Worcester, Massachusetts. The Keydets joined that league this year for swimming and diving and will compete in the first America East meet in February. It is then that Bretscher thinks his swimmers will really start to post cut times, or qualifying times, that allow swimmers to earn spots in further post-season competitions, including those ECAC Championships.

Most of our cuts will probably come from that meet," he said.

While his swimmers' times have been a big focus, that isn't the only time that has been on Bretscher's mind since he arrived on post in July. He has also had to figure out how to best utilize limited time in the Clark King Hall pool. It has not been easy trying to accommodate the swimming, diving, and women's water polo squads in those cramped quarters.

"We basically have three different teams using it," said Bretscher. "And obviously at VMI there's just a limited amount of time each day we can use for team practices. That's one of the biggest issues I have run into. It's a challenge, but [we're] making it work."

That pool, though small, underwent some renovations this summer, just like much of Cocke Hall. Bretscher said a new liner was installed, and the gutter system was redone. He also added that the pool received good reviews when VMI recently played host to its first home dual meet in July. He has also had to figure out how to best utilize limited time in the Clark King Hall pool. It has not been easy trying to accommodate the swimming, diving, and women's water polo squads in those cramped quarters.

"What we have works," he said. "I'm happy with it."

That does not rule out the possibility of future upgrades. Early planning is in the works to construct a new aquatics facility, which will include a pool with 50-meter lanes. Though most of the discussions about that venue were held prior to Bretscher's arrival, the coach hopes that it will become a reality in "the near future."

Until then, he is content with his cozy little pool in Clark King Hall, and with the program he is hoping to revitalize.

"I really, really enjoy working with this team because they are very motivated, very hard workers," the coach said. "They really push themselves and push each other. They are not afraid to go the extra step, and I have certainly asked them to push themselves harder than they have in the past."

"I think we are seeing the rewards from that," Bretscher added. "I'm very pleased with how it's going so far. We've put up some very, very strong times."

And remember, it's all about the times. ✦
The math is simply daunting: more than 1,700 members of the Corps of Cadets and only 12 women working in the VMI Tailor Shop to keep their coatees, overcoats, blouses, and pants looking inspection ready and parade sharp. Then there’s the chevrons indicating rank, the name tags on duty jackets, and the endless alterations required over a four-year cadetship. And let’s not lose sight of faculty and staff uniforms—those too fall under the purview of the tailor shop.

Altogether, the women handle over 40,000 garments a year—yet they seem to never lose their cool, and they very seldom, if ever, drop a stitch.

As of mid-November, working on coatees for 4th class cadets was the top priority, as those garments can be worn by new cadets after breakout. With over 500 rats, it’s a big job, but the quiet hum in the tailor shop as the women sew their way through the day doesn’t give a hint of the size of their workload.

“These ladies pull off the impossible,” said Jim Hudson, operations manager of the Military Store, as he visited with Cindy Dudley, manager of the tailor shop, and Donna Runkle, assistant manager, on an early November afternoon. Employees of the store and the tailor shop work together on a daily basis, as the military store is where all measurements and fittings take place.

Events such as Founders Day and cadet participation in the inaugural parade of a new Virginia governor, now less than one month away, make extra work for the tailor shop. Due to the needs of the Corps, working year-round is a necessity. “A lot of people think we’re off in the summer,” explained Dudley. “We’re not off. That’s our busy time.”

Not surprisingly, summer is a time to sew buttons back on and repair or replace errant zippers. It’s also a time when rank changes are acknowledged with the appropriate chevrons. The chevrons are manufactured locally by a company in Buena Vista and must be sewn on by hand. And while the workload isn’t daunting to Dudley, finding new employees can be. “Sewing is a dying art,” said Dudley, who learned her craft in a home economics class in high school. “There’s not many people that sew.”

Perhaps because of this, Dudley values her employees, many of whom commute from places as far away as Goshen and Craigsville. “It’s a good bunch of ladies in here,” she noted.

And Dudley, it seems, has happy employees. “I just like everybody I work with,” said Runkle, who is the tailor shop’s longest-tenured employee at 33 years. When Runkle arrived in 1984, cadets still owned their uniforms, rather than renting them as they do now. In those days, she recalled, keeping straight whose garments were whose was a major difficulty, and a hand-written ticket had to be drawn up for each item. Now, a bar coding system keeps track of thousands of look-alike garments.

Recycling garments—passing them down over the years as cadets graduate—has been another positive change, Dudley and Runkle believe. “There’s a lot of money to be saved by recycling garments,” said Dudley. “Any way we can save the state money, we can.”

And throughout the academic year, the women in the tailor shop have the quiet satisfaction that comes from seeing their work on parade—quite literally.

“VMI Tailor Shop Employees

Tailor Shop employees stay busy mending over 40,000 garments a year. —VMI Photo by Kelly Nye.

Ruth Beard and Patricia Jack repair a zipper on a pair of pants in the Tailor Shop on Nov. 9. —VMI Photo by Kelly Nye.

VMI Institute Report
‘Thinking of Different Perspectives’
Leadership Conference Shines Spotlight on Civil Discourse

By Mary Price and Ashlie Walter

At the end of October, the VMI Center for Leadership and Ethics held its eighth annual Leadership and Ethics Conference—and this year’s topic, civil discourse, was particularly apt in today’s political climate.

Over the course of two days, nearly 300 VMI cadets, students from other colleges and universities, and members of the public came together to discuss “Speaking Truth to Power: Candid and Courageous Civil Discourse.”

“We chose the topic because the country is becoming more and more polarized,” said Col. Dave Gray, director of the Center for Leadership and Ethics. “How do we, as Americans, agree to disagree and still walk away in a respectful, we’re all on the same page as Americans, manner?”

A highlight of the conference was the opportunity for cadet involvement in the ethical leadership challenge, an activity that involved having six to eight individuals of varied backgrounds and ages gather to discuss how they’d handle a particular scenario calling for ethical or moral judgment.

“I came in having an open mind about other people’s political views, but I definitely learned some new ways to really sit down with other people and learn what they’re actually thinking,” said Richard Warren III ’18 of his participation in the ethical leadership challenge.

“We discussed morals versus ethics a little bit—ethics being rules, morals being more your own personal behavior,” noted Tyler Watts ’18.

Emory Lieber ’19 served as one of 30 cadet facilitators of the challenge. “As the facilitator, my job was actually to stay away from the conversation as much as I could,” he explained. “I was more of the devil’s advocate, I guess. At a military school, there’s a lot of like-minded individuals, so my job in a lot of cases was to pull out the other side of the argument and really get people thinking of different perspectives.”

Speakers at the Leadership and Ethics Conference brought a wide variety of perspectives and backgrounds to the topic of civil discourse.

Of particular interest to those pursuing a military career, Eliot Cohen, political scientist and the Robert E. Osgood professor at Johns Hopkins University, and retired Lt. Gen. Gregory Newbold spoke in a panel session, discussing the relationship between military and civilian leadership.

The keynote speaker, Judge Andrew Napolitano, a regular commentator on Fox News, argued that the inalienable rights of man as outlined in the Declaration of Independence and elaborated upon in the Bill of Rights safeguard personal freedoms. He noted that those freedoms are intrinsic to humanity and therefore should be the deciding factor when the judiciary determines whether or not laws are constitutional.

The following day, a panel of media professionals discussed the state of journalism. The panel included Washington and Lee University Media Ethics Professor Aly Colon; Matt Gertz, a senior fellow at Media Matters for America; and Seth Mandel, the op-ed editor at the New York Post.


Attkisson described the various networks that political operatives might use to control a story, such as Media Matters for America, which she traced to liberal political operatives. When asked how to find out the truth in a news story or which news organizations to trust, Attkisson said she doesn’t trust or recommend any organization.

“ Anything I see or read, I don’t think that it’s false but I don’t believe it’s true,” she said.

Gray, who’s already planning next year’s leadership and ethics conference, described this year’s event as “fantastic,” both in terms of attendance and enthusiasm.

“All in all, I thought from our perspective here at the center that we did a good job of integrating and synthesizing many of the key issues that are out there that are out there in the public sphere.”
Have Debris, Will Travel
Nematodes Hitch a Trans-Pacific Ride—and Provide Valuable Research Opportunity

By Mary Price

A VMI biology professor’s research into marine nematodes may someday provide clues about how these microscopic animals travel the globe.

Since the summer, Maj. Ashleigh Smythe, assistant professor of biology, has been working to identify and classify nearly 1,300 nematode specimens that made their way to the West Coast of the United States after a massive earthquake and tsunami struck Japan on March 11, 2011.

Smythe, who specializes in the study of invertebrates, has been studying nematodes since the late 1990s. Her expertise in the study of these small worms led a colleague from Williams College to send her nematode samples he’d collected from boats and even entire docks that washed up on the West Coast in the years following the tsunami.

This summer, Sadie Sandifer ’20 and John Sanders ’18 joined Smythe in the lab to dehydrate the nematodes and mount them onto slides so they could be examined under a microscope.

Sandifer, who hopes to attend medical school down the road, said she signed up for the nematode project to have a hands-on research experience. “I like to do actual, live study,” she commented. “Having your hands on with actual organisms really intrigued me.”

With 10 weeks ahead of her, Sandifer thought she’d have plenty of time, but in the end, she ran out of time because the nematodes were more numerous and the work more laborious than she’d anticipated.

Thanks to her time in the lab, Sandifer said she’d learned to expect the unexpected. “It opened my eyes to realize—research isn’t] a perfect little thing,” she said.

Sandifer also came to see unexpected beauty. “The anatomy of a nematode—that was really cool,” she stated. “Something can seem so boring, but it’s actually so pretty under the microscope.”

Like Sandifer, Sanders found what he was seeing under the microscope to be much more interesting than he’d imagined. “There is a surprising amount of detail and variation among nematodes,” he said.

Sanders, whose goals include veterinary school, said the research had helped him with feeling more like a biologist and less like a classroom-bound student. “It was really cool to be able to do what real biologists do,” he said. “It gave me the ability to grow my skills as a biologist.”

The end goal of Smythe’s research is to learn more about what kinds of nematodes could survive the more than 5,000-mile transoceanic journey from Japan to North America.

“There’s been very few documented examples of nematodes transporting this far,” Smythe commented, “let alone very far at all in the marine environment.”

The Japanese tsunami and accompanying nematode transfer provide a natural experiment of sorts, Smythe went on to say. “We know exactly when they left ... and we have a date at which the material washed up on shore, which was one to two to three years later,” she said.

Now, Smythe is working to make sure that these nematodes are truly Japanese in origin by identifying them to the fullest taxonomic level possible. “With some of them, we got to the family and genus level,” she said.

Identifying them to the species level, which is the most complete level of identification, is a task so complex that Smythe doesn’t feel comfortable delegating it. “Species level identification is hard because nematode species are very similar to each other, and often the distinction between two closely related species is found only by taking detailed measurements of particular structures,” she explained.

So far, she’s identified more than 30 different species. “There’s a lot of diversity, which surprises me,” Smythe stated. Identifying the nematodes, she added, will help scientists better understand how nematodes distribute themselves in marine environments, and how they use man-made objects to do so.

There’s almost a certainty that Smythe will discover a new nematode species—or more than one.

“There is so much free-living marine nematode diversity out there,” she noted, “and so few of us that study them, that we find undescribed species all the time and just have to pick and choose the particularly cool ones to describe, as it is just overwhelming.”

Sadie Sandifer ’20 presents her research on the nematodes that washed up on the west coast of the U.S. in the years following the 2011 Japanese tsunami. —Photo courtesy of Maj. Ashleigh Smythe.

Japan Tsunami in 2011
- 9.2 magnitude earthquake
- 16,000 people killed
- 20 million tons of debris

The mouth region of a nematode of the order Ironida is magnified 1000x.—Photo courtesy of Maj. Ashleigh Smythe.
Because of her chemistry background, Davis was the perfect fit to help Alerding with chemical tests on the soybean stems.

Davis worked on improving the chemical formulas to test for sugars in the stems, and performed a complete breakdown of all lab procedures.

Angela Mullins ’19 has also worked to improve the chemical tests, and found that identifying key data was vital to making progress on the team’s efforts.

“You have all this information, some of it matters, but some of it doesn’t. You have to pick out what helps and what can’t,” said Mullins.

In between the lab work, Alerding’s students joined her for the 3½-hour drive to Suffolk most weeks, where they took measurements of soybean plants. Their work culminated in a harvest of all plant material in mid-October.

Once the plants are weighed, cross sections of the stems will be shipped to a laboratory in Vancouver, Canada, to be placed in slides. The slides are expected to be returned in January when Slone can start using his program to identify the cross sections.

“It’s not easy. It’s fun when you are there commiserating, but it’s been hard work,” Alerding said while looking at six cadets who participated in the study. “We compared it to the Rat Line, because you had to be in the sun longer transplanting plants.”

She expects to wrap up the study in about a year, when Alerding hopes to see the research published in an academic journal with all the cadets who participated named as authors.
**Professor Applies Math Modeling to Zika Virus**

Maj. Deborah Shutt, assistant professor of applied mathematics, is studying the reporting rates of the Zika virus by applying math modeling to public health records. She had her work published in the academic journal *Epidemics* and presented her research to colleagues on post during a brown bag seminar. She has developed a mathematical model for the 2015 Zika outbreak dynamics in El Salvador and Suriname. Data were used from the Pan American Health Organization and biology data on the *Aedes* mosquito. From that data, she estimated only 16 percent of cases were reported to health authorities in El Salvador and 18 percent in Suriname.

“We have to be aware that we have this problem now of a huge amount of people not getting reported,” she said. Shutt started studying the estimated rates of the Zika outbreak and reporting rates during an internship at the U.S. Department of Energy’s Los Alamos National Laboratory in New Mexico.

**Cadets Place Second in Kentucky Debate**

Four cadets, Ryan Edsall ’19, Kelia Aardema ’20, Madeline Barrett ’20, and Aaron Kubat ’20, joined the University of Virginia competitive speech and debate team to travel to Lexington, Kentucky, for the Bluegrass Invitational Speech and Debate Tournament in October. Coached by English, rhetoric, and humanistic studies adjunct professor Tony Boese, the combined team won second place out of 21 schools, with both Edsall and Aardema placing in the top 10 of their division. The trip offered an opportunity for participating cadets to combine their academic and professional skills while meeting other students from around the country. “The debate tournament at the University of Kentucky had to be one of the best experiences I have had during my time here at VMI,” said Edsall. “I certainly hope to have the opportunity to participate in more events in the near future.”

**Computer Science Professor to Publish Paper on E-Health Applications**

Dr. Youna Jung, assistant professor of computer and information sciences, has had a paper accepted for publication in the *International Journal on Advances in Security*. Jung’s paper, “Usability Enhancement on the Privacy-Preserving Online Monitoring Framework for E-Health Applications,” addresses one of the largest barriers to the use of electronic health applications: making them secure enough for patients to trust them with their personal information. Jung explained that many e-health applications are currently using online monitoring services to improve the accuracy and quality of services by tracking patients’ online activities and medical data. Often, however, these online systems have the potential to expose patients to privacy risks. In her paper, which will be published by the end of the calendar year, Jung proposes a privacy-preserving online monitoring framework and presents an enhanced prototype that provides user-friendly interfaces.

**VMI Alumni Earn Ranger Tab**

Three VMI alumni, Sam Busche ’14, Nina Srikongyos ’15, and Travis Gordon ’16, graduated from Ranger School in early November. Srikongyos became the first VMI alumna and the eighth woman ever to graduate from the grueling training course. Col. Douglas Vincent, commander of the Airborne and Ranger Training Brigade and former head of VMI’s Army ROTC department, said, “The Ranger School teaches leadership and produces rangers by placing them in the most severe, challenging, and demanding situations possible, and then assessing how they lead in chaos. VMI does the same thing.” Vincent estimated that about 15 VMI alumni have earned their Ranger tabs in the year and a half since he took command of Ranger School.

**Neel Retires from ‘the Best Job in the Nation’**

By Kelly Nye

Post-9/11 VMI cadets have known only a military world overshadowed by the constant threat of terror. But they have also known just one sergeant major to the Corps. And through that time of uncertainty, Sgt. Maj. John Neel was the calm but firm influence on their military training.

Neel will retire from his position on Feb. 1 after nearly 17 years as sergeant major to the Corps. He began his career in the commandant’s office on Sept. 6, 2001, just five days before the attack.

“I retired from the Army just a little too soon, maybe or maybe not,” he said, reflecting that sometimes in life “just the smallest of decisions has a tendency to take you down a different path.”

That decision kept him and his wife, Kim, in Lexington for longer than they’d ever been in one place.

“Kim and I get itchy feet,” he laughed. “We probably moved like once every three years while I was in the Army.”

During his time at VMI he has accomplished many things, but his two proudest achievements are expanding the weapons training program for cadets, and the creation of the New Cadet Military Training program. Neel helped select North Post as the location for the indoor firing range built in 2010.
The close proximity to post gives cadets more opportunities to use the facility, expanding rifle and pistol familiarization qualifications for cadets. Neel also coached the trap and skeet club, which grew from three members to 15.

However, it was implementing a basic military training program for all 4th class cadets of which he is most proud. The New Cadet Military Training Program was the brainchild of Magnus Nordenman ’02. During his 1st class year at VMI he and Neel designed the program to include weapons, first aid, and land navigation training.

“That took a lot of work to get it started and it’s been growing ever since. It’s been a major focus of this job,” said Neel. “And I’ve tasked [Sgt. 1st Class Carmelo Echevarria and Sgt. 1st Class Chris Bean] to keep the New Cadet Military Training going no matter what.”

The Neels first came to Lexington in the fall of 1997 when Neel joined the Army ROTC staff here at VMI. At that time, Sgt. Maj. Al Hockaday served as the Corps sergeant major. After Neel’s three year tour here was up, the Army stationed him in Turkey and then sent him to Kosovo. His family stayed in Lexington so his daughter could finish high school.

It was on a chance visit to the Institute that he discovered the position as sergeant major to the Corps had opened.

“I showed up at exactly the right time,” he said. “That day Sgt. Maj. Hockaday announced that he was going to retire.”

Now it is his turn. Neel has seen a lot in his 17 years, including four presidential inaugurations and five for governor after the upcoming one in January. Training the cadets for the 2018 gubernatorial inauguration in Richmond will be one of his last tasks.

After Feb. 1 Neel will move closer to his grandchildren in Charlottesville. He plans to travel and learn more about astronomy, the guitar, and flying drones.

“I’m going to miss the people I work with. And that goes from Gen. Peay on down,” he said. “I work with a family here. When we say ‘this is family’ we ain’t kidding.”

He will also miss working with cadets.

“Suffice to say, working with these great young people who I believe are a cut above has been fantastic. And I tell people this is the best job in the nation, my job,” he said.

Founders Day

VMI celebrates 178 years since its founding during the Founders Day parade and Institute Society Dinner Nov. 10. Four howitzers were fired by the Cadet Battery during the parade for a 17-gun salute. Later that evening, over 600 people attended the Institute Society Dinner in Marshall Hall. On Saturday, VMI hosted Wofford College in the last football game of the season.—VMI Photos by H. Lockwood McLaughlin, Ashlie Walter, and Kelly Nye.