Scientists and Scholars

New Biology Capstone Offers Hands-on Research Opportunities

By Mary Price

In VMI’s new biology capstone course, learning by doing isn’t just a theory – it’s a practice. The goal of the course is to turn out professional scientists ready to step up and make significant contributions to the field.

That goal was at the forefront last fall, when Col. Jim Turner ’65, head of the biology department and the Beverly M. Read ’41 Institute Professor of Arts and Sciences, taught the first section of the new course, Undergraduate Biological Research: Real Science and Real Contributions.

The capstone course, a requirement for graduation, is designed to help 1st Class cadets pull together and apply all that they’ve learned in their major field.

“Others paradigm for … teaching upper level classes, particularly in the sciences, is that you can … engage your students in some type of real-world experience in the laboratory setting,” said Turner, who has long championed undergraduate research at VMI.

Such experience is particularly valuable for those cadets with summer commitments such as ROTC that prevent them from participating in the Summer Undergraduate Research Institute or similar opportunities, Turner added.

Seeking to provide all of his capstone cadets with an in-depth research opportunity, Turner had the group study zebrafish, a species often favored by scientists for its fast reproduction and development in a laboratory setting.

One group of cadets studied the role of nitric oxide in the fish’s neuro-muscular system, while the other examined the role of that substance in the fish’s cardiovascular system. The goal for both groups was to create a better understanding of human disease models.

But before his cadets could examine specimens under a microscope in the lab, Turner had to teach them the steps a scientist goes through when preparing to do research. Those steps include searching the current literature, formulating a hypothesis, setting up an experiment, collecting and analyzing data, and then interpreting that data before preparing the results for publication in a scientific journal.

“They get bits and pieces from these [upper level] courses, but it doesn’t come together,” explained Turner. “That's the whole idea of the capstone. It comes together and presents to the student the ultimate in their discipline.”

Very quickly, Turner saw his cadets begin to grow as scientists and scholars.

“They all bought into it,” Turner commented. “Their minds and hands took them places they’d never been. … The exciting thing was to watch them grow and develop, to watch them have insight that they never thought they could contribute.”

At the end of the semester, all of the cadets gave poster presentations to an audience that included Gen. J.H. Binford Peay III ’62, Institute superintendent.

Future plans include having the cadets present their findings at the Undergraduate Research Symposium held on post each spring, and also...
Leadership Reaction Course Construction Begins

By John Robertson IV

Ground has been broken and site work is under way for Phase II of the Military and Leadership and Field Training Grounds, which is composed of a leadership reaction course and improved physical plant facilities at North Post.

The new elements, both of which will be situated near the northern end of Anderson Drive across the Woods Creek Trail from Gray-Minor Stadium, are expected to be complete by late spring.

The $1.55 million project was largely funded through a donation from Mrs. Anne Lee Saunders Brown, whose contributions made possible several existing facilities at North Post.

The leadership reaction course consists of a single 86- by 94-foot structure divided into 10 bays. Each bay presents a unique mission that will put cadets’ problem solving, teamwork, and leadership skills to the test.

“They’ll have an opportunity at the squad level to practice not only leadership but also followership,” said Col. Dale Brown, director of construction. “Somebody’s got to take charge, but somebody’s also got to listen.”

Each mission has a predetermined time limit and specific parameters for success. Cadets will use provided materials such as planks and ropes to successfully accomplish their mission.

Users of the course, including the commandant’s office, ROTC departments, and the physical education department, will have the opportunity to observe and score cadet performance from an elevated walkway located above the bays.

The LRC is a variation of those at military training facilities in the United States and across the globe, and it will give cadets a sample of the types of courses they’ll encounter in future training.

“Most major military training installations have a leadership reaction course; all the services use them,” said Brown. “Our course won’t show cadets all the tasks, but it will give them some experience.”

To make way for the new physical plant facilities, obstacles once located alongside the old physical plant equipment shed have been removed and stored while sites are evaluated for their relocation.

A new 5,000-square-foot structure will provide physical plant with a place to store and maintain North Post maintenance equipment as well as office space to facilitate planning and execution of physical plant operations in the area.

“The idea is that they’re going to do field maintenance here. If a mower needs to be completely broken down, they’ll take it out to physical plant and put it in the maintenance shop. If it’s just changing oil, cleaning, changing mower blades, they’ll be able to do that on site here,” said Brown.

Landscaping is also included in the plan for the site, limiting visibility of the structures from the nearby Woods Creek Trail.

Additional features of the site include a storm water retention pond and landscaping bins to contain materials such as mulch and sand.
**VMI WINS SECOND SILVER SHAKO SHOWDOWN**

By Scott Belliveau ’83, VMI Foundation

VMI’s young alumni emerged victorious over those of The Citadel in the second Silver Shako Showdown.

Conducted during the weeks prior to the Military Classic of the South, the event is a competition to see which school can persuade the greater percentage of its young alumni — those belonging to the 15 most recently graduated classes — to donate to their alma mater.

When the 2014 results were announced during the football game on Nov. 21, they revealed another VMI victory, with 10.97 percent of the Institute’s younger alumni participating versus 10 percent of The Citadel’s young alumni doing so.

Furthermore, the 600 VMI alumni who participated gave a total of $202,994, and, of them, 26 were first-time donors whose gifts added up to more than $47,000. The Silver Shako Class Challenge was won by the Class of 2004, which had 21 percent participation.

“This triumph of the VMI spirit was rooted in many things,” said Brian Scott Crockett, the CEO of the VMI Foundation and who, in the company of VMI’s mascot, Moe, was on the field for the announcement, “but two that stand out are the strong cooperation between the VMI Foundation, the VMI Keydet Club, and VMI communications and marketing, and the generosity of our young alumni.”

Managing VMI’s campaign were two young alumni, Stewart Wilkinson ’12, the VMI Foundation’s assistant director of annual and reunion giving, and Andrew Deal ’12 of the VMI Keydet Club. As in 2013, VMI’s Office of Communications and Marketing provided important support, including producing a video that was placed in the Showdown’s website and a Web page that displayed the participation of young alumni by class, from 2000 to 2014.

In the Showdown, in 2013, the Institute was the winner with more than 13 percent of its young alumni making a gift as opposed to about 11 percent of The Citadel’s.

“For both schools, the experience in 2013 was positive,” said John J. Wranek III ’85, who as the VMI Foundation’s vice president for annual and reunion giving is responsible for VMI’s part in the Showdown. “We added an element of fun to the traditional rivalry; the young alumni enjoyed the competition, and the staffs of the VMI Foundation and The Citadel Foundation enjoyed engaging our younger alumni.”

Concluded Crockett, “Based on these results, perhaps it’s not too early to think in terms of a ‘three-peat.’”

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**CAMPAIGN FOR VMI PASSES $200 MILLION MARK**

By Scott Belliveau ’83, VMI Foundation

Strong giving in December 2014 advanced the Institute’s latest comprehensive fundraising effort, An Uncommon Purpose: A Glorious Past, A Brilliant Future: The Campaign for VMI, substantially toward its goal of $225 million. As of Dec. 31, the campaign had received more than $201.4 million in gifts and commitments.

VMI alumni and friends had donated $183 million during the campaign’s “quiet phase” leading up to the public phase announced Nov. 11. In the remaining days of November, donors gave another $1.4 million, putting the campaign at $184.4 million.

In fundraising at VMI, as elsewhere, December is a busy month because donors seek to make gifts before the end of the year. No one was surprised, therefore, when the pace of giving to the campaign increased in early December. By the middle of the month, however, the pace was such that it was clear that December would be an exceptional month in terms of money raised. All told, by month’s end, alumni and friends had come forward with an astonishing $17 million.

There were many reasons for this success. “For example, dozens of people took advantage of a federal law allowing the tax-free use of individual retirement accounts for charitable giving to make new or additional gifts to VMI,” said VMI Foundation CEO Brian Scott Crockett. “Some donors who had the potential to make major gifts to VMI decided to make them in December, and many of them were exceptionally generous. All of these sources converged to make ‘a December to remember’ in terms of philanthropy at VMI and the success of this campaign.

“So far,” continued Crockett, “more than 12,300 alumni and friends have made at least one gift or commitment to this campaign; many have made multiple gifts or increased already established commitments. Their generosity has given this campaign a magnificent start.

“The fact remains, however, that An Uncommon Purpose remains more than $23 million from its goal, and there are many important needs that still must be addressed. The ultimate success of this campaign, therefore, depends on the engagement and generosity of those alumni and friends who have not yet come forward in its support.”

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Chaplaincy Program Marks 50th Anniversary

Sacred Assembly is a Draw for Alumni and Cadets

By Mary Price

VMI observed the 50th anniversary of its chaplaincy program Jan. 23-25 with a Sacred Assembly, a gathering of cadets, faculty, and staff wishing to express their faith in God.

The Sacred Assembly, a creation of Col. James S. Park, Institute chaplain, has been an annual event since the late 1990s. It’s traditionally held in late January, a time of year that Park believes is attractive to cadets looking to make changes in their lives.

“Being ready for change, and ready for an improved life, I think is a good condition for people being open to faith if they haven’t examined it before,” the chaplain explained.

And while the Sacred Assembly in years past has had an evangelical Christian focus, this year Catholic and Jewish services were also held. A separate event for Muslim cadets is planned for later in the year.

For Park, the decision to cast a wide net at this year’s Sacred Assembly is an outgrowth of his day-to-day work, which includes ministering to all cadets who seek the services of his office.

“I’m respectful of every young person,” said Park, who has served as chaplain since 1994. “The chaplain, throughout the time it’s been a position, has been largely involved in supporting cadets of all faiths.”

Park’s job is definitely not a Sunday-only position, although leading the Sunday morning worship service in Jackson Memorial Hall is easily his most visible moment each week.

On a daily basis, Park and the associate chaplain, Maj. John Casper ’04, counsel cadets facing major life decisions or crises. They also respond to frequent phone calls from parents seeking to check up on their sons and daughters. It is often their duty to inform cadets when there has been a death in the family.

“We do a lot of one-on-one in very life-impacting circumstances,” Park noted.

Park, who is set to retire after the 2015-16 academic year, is only the third individual to hold the chaplain’s position at VMI since the post was created in 1965.

That year, Jack Camp ’40 presented a financial gift that produced an endowment capable of sustaining the work of a chaplain. Camp’s gift was made in honor of his father, John M. Camp, VMI Class of 1905.

Retired U.S. Navy Capt. Robert Wilson became the first chaplain during a time when attending Sunday worship services at VMI was mandatory. With a change in federal policy in the early 1970s, church and chapel attendance was made voluntary. Wilson, who served as chaplain until his retirement in 1979, taught academic classes for cadets and provided religious support and counseling.

The next chaplain was retired U.S. Air Force Col. Charles Caudill, who served from 1979 to 1994. “He was well-liked,” said Park of Caudill. “He was known as one who hugged cadets. He brought great credibility to the position of VMI chaplain. The cadets had a high regard for the chaplain.”

Now a resident of Florida, Caudill returned as a special guest to this year’s Sacred Assembly, where Casper said he received a warm welcome.

Other guests at this year’s Sacred Assembly included three alumni who are either serving overseas as missionaries or have done so in the past: Frank Louthan ’66, Michael Bellamy ’80, and Walt Wood ’80. Another missionary alumnus, Burr Powell Harrison ’99, now in France, attended via Skype.

Alumni leading worship services or giving testimonies over the course of the weekend included Gene “Ottie” Allgood ’10, Bellamy, Capt. Matthew Dussia ’05, Lt. Ronnie Ellsworth ’11, the Rev. Jessica Fulton Lee ’06, Brian Pettrey ’92, Brandon Porter ’96, and Col. Pete Sniffen ’85. Serving as chaplains were Col. Bob Phillips ’87, Capt. Chip Satterlea ’04, and Sniffen.

One week after the event, Casper said that he and Park were “extremely pleased” with the turnout. The Shabbat observance drew 53 people, he noted, and the Sunday morning service in Jackson Memorial Hall had an attendance of 250 people, including Gen. J.H. Binford Peay III ’62, Institute superintendent, and his wife.

Noted Casper, “Alumni were floored at what’s available to cadets. . . . It was just a great weekend.”
Heading to Medical School

Faculty Mentors and Service Abroad Steer Cadet’s Career Choice

By Mary Price

With just three months to go until graduation, many VMI 1st Class cadets are still trying to figure out where life will take them after they wake up as alumni on May 17.

Not so Nick Platamone ’15 – by the end of November, he’d already been accepted at the Edward Via College of Osteopathic Medicine in Blacksburg, Va.

Platamone, who transferred to VMI after one year at George Mason University, credits the experience he gained in Col. James “Jim” Turner’s capstone biology course last semester with giving him the solid foundation in research methods that he’ll need in medical school.

“I feel 100 percent better prepared,” said Platamone in mid-January as he looked back on Turner’s class, which used the study of zebrafish to introduce 1st Class biology majors to scientific research.

Platamone was especially appreciative of the class because prior to it, he’d never had a chance to do undergraduate research. In the summer of 2014, he and Hunter Scothorn ’15 traveled to Haiti to shadow doctors working in a medical clinic there, and in previous summers Platamone had ROTC commitments.

“That trip really solidified my desire for medical school,” said Platamone of the Haiti experience.

Platamone is quick to credit Turner with helping him discover the path that would ultimately take him to medical school. He entered VMI with aspirations of becoming a Navy pilot, but then discovered that medical school was something he needed to pursue. Platamone transferred to VMI after one year at George Mason University, and in November, he was accepted at the Edward Via College of Osteopathic Medicine.

“I don’t think it would have happened if I hadn’t been here, with the guidance I’ve had from Col. Bell, Col. Turner, and Col. Rowe,” Platamone said.

Other cadets accepted to medical school so far this academic year include Katheryne Austin ’15, Mark Collie ’15, Hannah Dickinson ’15, A.J. Gross Jr. ’11, and Harper Niver ’15. Alumni recently accepted include Douglas C. Trask ’09.

Scientists and Scholars

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at the Big South Undergraduate Research Conference, to be held at Campbell College in April.

And with such momentum, four of the cadets – Connor Sullivan ’15, Brice Scott ’15, Brad Anuszkiewicz ’15 and Alex McCauley ’15 – have decided to continue their capstone work as an independent study project this semester.

“We’ve always hoped that we could reach this level of sophistication with our majors,” said Turner. “It’s been a revelation and it’s been a camaraderie of junior colleagues.”

In addition to the capstone cadets, two others, Vania Murcia ’17 and Jon Winalski ’16, were involved through their enrollment in Biology 340, Teaching Mentorship in Biology. This pass/fail course is designed to give prospective teachers an idea of what it’s like to approach a class from the instructor’s perspective.

In that capacity, Murcia and Winalski helped Turner and their fellow cadets in the lab as needed.

“Col. Turner has been the guy to point me in every direction to go,” Platamone noted. “He’s such a good guy. He’ll drop anything he’s doing to help [a cadet].”

Platamone was also quick to credit as mentors Col. Richard “Dick” Rowe and Col. Wade Bell, both professors of biology. He took Rowe’s morphology class last semester and is currently enrolled in his histology class. Likewise, he’s taking immunology from Bell, with hopes that both the histology and immunology courses will give him a leg up in the fall.

Over the course of his cadetship, Platamone has not only been pursuing his academic goals, but he’s also found time to take part in many of the extracurricular opportunities available to cadets. He’s been a member of the cadre as a corporal, played club soccer, and participated with Character Counts, a program which brings character education to local school children. He’s also a member of the leadership focus group run by the Center for Leadership and Ethics.

Last semester, Platamone even found time to tutor in the Miller Academic Center, helping his fellow cadets with their biology, chemistry, and physics assignments. That achievement is particularly remarkable when one considers that he was shadowing a family practice doctor in Blacksburg one afternoon per week as part of his preparation for medical school.

“I’m happy with the path I’ve set forth on,” observed Platamone. “I don’t think it would have happened if I hadn’t been here, with the guidance I’ve had from Col. Bell, Col. Turner, and Col. Rowe.”

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Professors Present at Foreign Language Convention

Three VMI faculty members from three VMI academic departments gave papers at the American Council on the Teaching of Foreign Languages annual convention, held in San Antonio, Texas, Nov. 21-23, 2014. Lt. Col. Howard Sanborn IV, associate professor of international studies and political science, and Col. Mary Ann Dellinger, professor of modern languages and cultures, presented “Institutional Assessment and Faculty Development in the Teaching of Culture.” Dellinger also joined with Col. H. Francis Bush, professor of economics and business, to present “Spanish for Business vs. the Traditional Paradigm at the Intermediate Level.”

Millions Have Visited Virginia Museum of the Civil War

Over 4.6 million visitors have walked on the original carpet at the Virginia Museum of the Civil War, which is part of the New Market Battlefield State Historical Park, since the museum opened 43 years ago. That carpet is now part of history. During the latter part of December, both the museum and the park were closed so new carpet could be installed. Maj. Troy Marshall, site director, noted that the visitor count was re-set when the new carpet was put in place. Both the museum and the park are owned and operated by VMI.

VMI Joins International Write-In

For the first time ever on Dec. 4, 2014, VMI joined the International Write-In, an event designed to show student writers that they are not alone and to foster a sense of community by sharing photos from school writing centers via social media. This event, which began at Swarthmore College, now includes 23 schools from three countries. In addition to VMI, schools participating in December included Swarthmore, Harvey Mudd College, Franklin and Marshall College, Kenyon College, and Oberlin College.

English Professor Publishes Linguistics Volume

Maj. Joshua Iddings, assistant professor of English, recently published his co-edited collection, *Genre Pedagogy Across the Curriculum: Theory and Application in U.S. Classrooms and Contexts* (Equinox Publishing) with Dr. Luciana C. de Oliveira of Columbia University. The collection presents research concerning the role of language in educational contexts across many disciplines and for various age levels, from primary school to college. This volume is the first of its kind to discuss the application of systemic functional linguistics in the context of the United States educational system.

VMI in Top 10 Nationally in Game Day Challenge

VMI placed ninth in the nation in the diversion rate category of the Game Day Challenge 2014, a national effort by colleges and universities to reduce the waste generated by tailgaters at football games. The diversion rate measures the amount of waste recycled that would have otherwise gone into a landfill. It was the highest placing the Institute has achieved since joining the Game Day Challenge in 2012. VMI also placed second in the recycling category in Division I, outpacing schools such as The Citadel and Harvard University. The Game Day Challenge is run by a partnership of the College and University Recycling Coalition, RecycleMania, Keep America Beautiful, and the U.S. Environmental Protection Agency’s WasteWise program.

Rugby Team Ranked Nationally

VMI’s club rugby team has achieved a national ranking for the first time in the program’s history. The rugby team won this year’s Cardinal Collegiate Rugby Conference Championship for Division II, the highest division of rugby in the Conference. Next, the Keydets advanced to the USA Rugby playoffs, where the team was defeated by Towson University 34-23. VMI moved way up in the rankings after that performance and is currently ranked eighth in the nation by *Rugby Today*. Towson was ranked second at game time. The team finished the season 7-1 in conference play and 7-2-1 overall.

Economics and Business Department Reaccredited

VMI’s Department of Economics and Business has been recently reaccredited by AACSB International — the Association to Advance Collegiate Schools of Business. As of February 2014, 694 business programs were accredited by AACSB. Of those, just 60 are undergraduate. Word of the reaccreditation came in December after an on-site visit by AACSB accreditors in October, which involved numerous interviews with both faculty and cadets. VMI’s Department of Economics and Business was first accredited by AACSB in 2009.

Eltoweissy Attends Conference, Serves as Visiting Scholar

Col. Mohamed Eltoweissy, professor of computer and information sciences, took part in a major conference in December, and also served as a visiting scholar. Eltoweissy co-authored a paper that was presented at the 7th IEEE/ACM Conference on Utility and Cloud Computing, which was held in London, United Kingdom, Dec. 8-11. During the last week of December, Eltoweissy was a visiting scholar at King Fahd University in Saudi Arabia. His plans for 2015 include participating in the International Conference on Information Reuse and Integration, to be held Aug. 11-15 in San Francisco, Calif. VMI is a co-sponsor of that conference.

Ring Figure Gift

In December the Class of 2016’s Ring Figure Committee accepted a check for $40,000 from the VMI Foundation’s assistant director of annual and reunion giving, Stewart Wilkinson ’12. Made annually by the VMI Foundation to the 2nd Class, this gift reflects the $100 that 388 Brother Rats of the Class of 2016 and 12 cadets in other classes received to help them purchase their class rings. Accepting the gift were Carter Chatwood, Daniel Warner, Bridgett Pouliot, Zane Mitra, Joe Lamagna, Jacob Norris, Leo Szalkowski, Shawn Gardner, Connor Chow, Dillon Wright, and Scott Beasley. – VMI Foundation Photo by Stewart Wilkinson ’12.
Thin Films, Deep Learning
Cadets Hit the Physics Lab for Independent Research Projects

By Mary Price

Four 1st class physics majors got a taste of life as working scientists this past fall when they wrote a grant proposal, received the funds necessary to buy their supplies, and carried out experiments in the thin films lab. What’s more, one of the cadets, Ching-Hung Tseng ’15, is now pursuing an independent study based on his work in the fall.

Because the cadets had done only general lab work for required classes, Lt. Col. Daniela Topasna, associate professor of physics and astronomy, designed this year’s capstone to include work in the thin films lab, where she does her own research.

Under Topasna’s guidance, the cadets learned the ionic self-assembled multilayers (ISAM) technique of thin films creation.

Topasna explained that thin films are coatings used for a variety of surfaces, including scratch-resistant lenses and corrosion-resistant coatings. The thickness of a thin film is measured in nanometers. A nanometer is one billionth of a meter.

“You end up with layers of cake, almost, but you do it one layer at a time,” Topasna said of the process of creating thin films.

But before the cadets could get under way in the lab, they needed materials, including lab coats and gloves so the dyes they’d be using wouldn’t stain their uniforms. Topasna thus coached the cadets through the process of writing an application for a $300 Wetmore Fund grant through the VMI Center for Undergraduate Research.

“Having four students, I wanted each one to be hands-on with a set of materials,” she explained. “I thought it would be a good experience for them to work together as a team and write the proposal.”

Tseng’s project complements a Summer Undergraduate Research Institute initiative undertaken by Cadet Hunter Liu ’15 last year in preparation for writing an honors thesis this year.

Liu’s project was to create an optical pH sensor using the ISAM technique, with the goal of producing an instrument that could be used in the biomedical field.

“For medical purposes, the pH sensor is based on voltage change; . . . it’s not biocompatible, and it’s very big,” said Liu. The model he attempted to create would be much smaller, and nontoxic to the body.

By the end of the summer, Liu had produced a sensor that would work, although only in a narrow pH range. In the fall, Liu took a break from the project to study abroad at the Japanese National Defense Academy.

Now he’s back in the lab, where he’s working on finding the optimum number of film layers for his sensor.

“If you make too thick of a film, only the few top layers respond to the pH changes, and the layers closer to the substrate are not affected,” explained Topasna.

This semester, Tseng is working to find out how temperature and time affect the sensitivity of the films in Liu’s sensor.

“I just think it’s interesting that you can transfer this material to a substrate,” said Tseng. “It’s really useful in a real-world application.” A native of Taiwan, Tseng came to VMI with a strong interest in physics that he’d picked up while in high school.

“I’m just really fascinated about what Albert Einstein did in the field of relativity,” said Tseng. “That inspires me.”

Said Topasna of Tseng, “He has a very inquisitive mind. I like how he poses questions. . . . When you get the right question, that makes you think a little bit more and explain it a bit more.”

The other cadets enrolled in the capstone course in the fall all had the chance to select and carry out their own projects in the thin films lab.

Cadet Alex Falten ’15 also worked on a pH sensing project, while Cadet Nick Mahin ’15 worked with a copper phthalocyanine-based material that’s used in photo-voltaic applications such as solar cells. Cadet Dylan Bolden ’15 researched cerium oxide antibacterial films, which could someday be used to inhibit pancreatic cancer.

Topasna also noted that this year nine cadets are expected to graduate with the physics major, the largest number since she began teaching at VMI in 2002.

Ching-Hung Tseng ’15 (left) and Hunter Liu ’15 work on projects in the thin films lab. – VMI Photo by Kelly Nye.
New challenges and opportunities have never fazed Cadet Madeleine Julienne '15, drum major with VMI's Regimental Band.

As a child, Julienne sat with her next-door neighbor to watch reruns of *The Lawrence Welk Show* and was captivated by the trombones. When the opportunity to play in a band in middle school arrived, Julienne already had her instrument picked out. In high school, she thought about leading the band as drum major, but was never selected.

At VMI, Julienne saw that opportunity come around again – and this time she was sure not to miss it. At the end of the 2013-14 academic year, Julienne was selected as drum major, becoming only the second female to hold that position since women began attending VMI in 1997.

"It's definitely been a learning experience," said Julienne of her time as drum major. The most visible part of the position involves leading the band during the 30 parades that are held each academic year, but behind the scenes much of Julienne's job is motivation, as cadets who are already worn out from academic and military demands arrive in Shell Hall for rehearsals each Thursday night.

"[The members of the band] have a lot more time commitments and we don't necessarily always see the reward for that," said Julienne. "It's hard to motivate people and get them to give you their best."

For Julienne, having a relationship with her fellow band members has been key to securing their cooperation. She explained that since only a small handful of cadets in each 4th Class expresses a desire to be in Band Company, she and other members of the band must recruit musicians.

"Since my 3rd Class year I've been cold calling the entire rat mass to recruit for the company," she noted. Those phone calls did more than fill the ranks of the band – they allowed Julienne to get to know the individuals who would one day look to her for guidance on the Parade Ground.

"I knew [the other band members] personally," Julienne said. "I'd worked with them the summer before they matriculated and spoke with them a lot. … I felt comfortable with the people I would lead."

To prepare herself for successful leadership, Julienne took a trip to Washington, D.C., last summer to train with Master Gunnery Sgt. Kevin Buckles, drum major with the U.S. Marine Drum and Bugle Corps. It's an opportunity that many VMI drum majors have had, thanks to the efforts of Col. John Brodie, band director.

"It was great," said Julienne of her training with Buckles and his staff. "It was such an incredible experience that I never would have imagined myself having the opportunity to do. It makes me grateful for coming to VMI because it's an opportunity I wouldn't have had."

Last fall, Julienne had another opportunity present itself when Brodie approached her on the floor of Cameron Hall moments before the 175th anniversary Founders Day convocation and asked if she'd like to conduct the national anthem in front of a sizable crowd that included members of the Board of Visitors and Gov. Terry McAuliffe.

"It was exciting for me," said Julienne, adding that she didn’t feel nervous at all. "Music and performance have helped me in speaking to large groups of people and interacting with people," she added. "I’m used to sitting on a stage. … ‘All eyes on you’ kind of becomes the norm."

Parades, though, are easily the drum major’s most nerve-wracking assignment. While the commander of Band Company outranks the drum major, it’s the latter, more visible individual who wields the mace and leads the entire company on the Parade Ground.

"[Julienne has] got to be really on top of what comes next," said Brodie, adding that he gives his drum majors a "cheat sheet" attached to their white leather gauntlets that lists the songs to be played that day. It’s an insurance policy against what at worst could be a musical disaster, and at best, a miscue.

"The company commander might park in the wrong spot, or be off a little bit, or be too close or too far from the company in front of him, but he’s not making any noise," Brodie explained. "If the band doesn’t play, it is serious."

Julienne, meanwhile, just wants to keep on playing her trombone, as she currently does in VMI’s Jazz Band. "I think I need it," she noted. "During the Rat Line it was a great outlet, and I think I still need it. … I’m open to new musical experiences."
For the culminating event, rats charged over sandbag barriers and into barracks for a sweat party involving the entire Corps. – VMI

Photos by H. Lockwood McLaughlin, and John Robertson IV.
Digital Storytelling Reflects Foreign Language Experience

BY MARY PRICE

A group of cadets enrolled in a Spanish capstone course had a new assignment this past fall – to use digital storytelling as a means of exploring and explaining the paths they’ve taken in acquiring a second language.

The capstone course, which is meant to be the culmination of a cadet’s learning experience in his or her major field, was taught by Col. Mary Ann Dellinger, whose research focuses on second language acquisition.

“The metaphor for a capstone is this: you’ve gone four years in an undergraduate curriculum and you have all of these bricks,” explained Dellinger. “But you really don’t have the house. The point of a capstone, unlike a seminar, is to put it all together.”

To help her cadets put it all together, Dellinger asked them not only to create a five-to six-minute narrative with voiceover of them speaking, but also write a research paper outlining how current language acquisition theory explains the paths they’ve taken to mastering a second language.

Chantal Stark ’15, focused her personal narrative on how a mission trip to Guatemala last spring helped to increase her fluency in Spanish, a language she’s studied since eighth grade.

“It was a really neat experience,” Stark said of her trip to Guatemala. “I improved my Spanish-speaking skills, and it was just really nice to know that I was doing something for someone else. It’s been awesome that I’ve been able to focus on that trip through this project.”

In her research paper, Stark compared her experience learning Spanish with her experience learning German, a language she was exposed to from infancy. Growing up as the daughter of an American father and a German mother, Stark spoke English with her father and German with her mother.

“I chose this approach to highlight two different ways of learning a language,” Stark explained, “as well as to include various personal experiences, such as one week in a Spanish-speaking country and years of formal Spanish education versus six months of study abroad and countless visits to Germany and conversations with my German-speaking family members.”

Like Stark, Taylor Rafaly ’15 has been studying Spanish since middle school – but for him, the motivation came from a need to communicate. A group of Hispanic players had joined the travel league soccer team he was playing on, and learning Spanish wasn’t just nice – it was necessary.

“My motivating factor was trying to communicate with [the Hispanic players],” said Rafaly, who went on to play as a forward on VMI’s NCAA soccer team. “They were the … reason that I first started learning Spanish. I continued with it because I liked it.”

Rafaly continued, “The idea is to figure out your motivation for learning language. … If you’re motivated to do something, you’re going to do pretty well, or at least continue with it.”

Continuing hasn’t been a problem for Cadet Schafer Wymond ’16.

The Lexington resident is fluent in both Spanish and Arabic, with two years of Arabic study under his belt before he even matriculated at VMI.

During his junior year at Rockbridge County High School, Wymond did an independent study in Arabic with Khadija Bentouhami, an instructor in the VMI Department of Modern Languages and Cultures.

The next year, he took Arabic 101 and 102 at VMI, before studying abroad in Morocco the summer before his 4th Class year.

For his digital storytelling project, Wymond chose to write in Spanish about the experience of learning Arabic.

“It was a little bit easier to look back because I started [Arabic] only three years ago,” said Wymond, who’s been learning Spanish since his freshman year of high school.

In his story, Wymond discusses the challenges he faced as an 18-year-old freshly arrived in Morocco, staying with a host family for a complete cultural immersion experience.

“One of the things I talk about [in the story] is that I was afraid to make mistakes,” said Wymond.

“In my first few weeks in Morocco I didn’t really progress,” he continued. “I was pretty stagnant. I was doing well in class and at my host’s home, … but I wasn’t confident in my skills, and I wasn’t comfortable speaking to other people.”

Time, and practice, got Wymond over the hump, and this past summer, he returned to Morocco with only a backpack as his companion.

Wymond marvels at the progress he’s made: “I go from a person without the capabilities to converse with other people to pushing myself outside of that comfort zone and forcing myself to make mistakes and learn in another culture.”

It’s self-assessments like that, Dellinger believes, that come through best in the digital storytelling model. “Digital storytelling is really big right now,” she noted. “[Language learners] need to talk. They need to speak. Just a research paper isn’t enough.”
It’s a great, big world out there, and while the Internet has allowed it to shrink a little, far away is still far away. The continent of Asia is one that many cadets have never visited, and VMI professors who are charged with teaching about it have worked to find interesting ways to convey information to their students.

“They are interested,” said Dr. Lunpeng Ma, assistant professor of modern languages, of cadets in his classes, “but sometimes they really need guidance. It’s our job to clear that picture.”

That is why Ma and three other faculty members—Lt. Col. Howard Sanborn, Dr. Vera Heuer, and Maj. Brent Hierman, all of the Department of International Studies and Political Science, traveled to Charlottesville, Va., recently. They were part of a panel at the Southeastern Conference of the Association of Asian Studies at the University of Virginia, illustrating methods they use to overcome numerous obstacles when teaching about Asia.

“It occurred to us that one of the issues embedded in all of this was building some empathy for the subject matter,” said Col. Mark Wilkinson, who is a history professor at VMI and served as moderator for the panel. “You have to constantly revisit how you teach.”

“Giving the students a sense of these places and connecting to them is one of the problems,” said Sanborn. “Some of it is just talking about cultures that are on the other side of the world. [The students] are in the middle of the Shenandoah Valley, and we’re talking about places that are, at best, 16 or 20 hours away by airplane. These are very complicated topics and very different places to our students here.”

To overcome these obstacles, the VMI contingent has implemented some creative ways to bring their students closer to the subject matter. Sanborn, for example, uses art and history in his Politics in East Asia and Politics in China classes to help give students a better understanding of the region’s culture, a must for understanding the politics.

“China is not something in a book or something on a website,” explained Sanborn, who soon will join the Southeast Review of Asian Studies as an associate editor. “There are cultural differences to take into account and understanding that … we have to facilitate.”

Sanborn balances discussion of arts and the humanities with that of “abstract things like institutions of government, elections or ethnicity.” Part of the process is having the students reflect on their own government and apply and extend their reflections to governments in Asia.

Heuer takes a different approach. Her classes, which focus on the Asian subcontinent, including India, often use role play and simulations.

“I’m hoping I can observe better learning outcomes by allowing the cadets to take on a role and develop empathy, thereby developing a better understanding of what’s really at stake for [these] populations,” Heuer said.

In this activity, Heuer will suggest a role — a rural farmer from low socio-economic status, for example — and place the cadets in situations their characters might face.

Hierman also uses role play in his classes about Central Asia, sometimes requiring students to research their roles.

“Central Asia is not well known, not just among the cadet population but also among the American public and among the American media,” Hierman explained. “As a result they don’t know much about what’s going on. It’s overcoming that before you can even get to the dynamics.”

In a blogging assignment, Hierman’s cadets are required to search for news stories that involve more that “just the sensationalist headlines.” They write summaries of the stories and, using concepts explored in the classroom, try to make connections between these current events in the region and the rest of the world. In addition, cadets have to comment on blogs posted by their peers.

“I’ve found that students over the course of the semester often refer back to … [their own] blog posts or other student’s blog posts for larger assignments,” Hierman said. “They are thinking beyond just the stale academic, which I love.”

Ma came to VMI from the College of William & Mary, where he taught a class about Chinese popular culture. He has taken those ideas and incorporated them into his language classes. He has his students complete popular culture projects, which can take on a variety of forms, from blogs to videos to interviews. One recent project focused on social media in China.

“I think popular culture is a great lens [through] which students can engage the current situation in China,” said Ma. “And what’s more, they can compare their own experience to what’s going on in China.”

But no matter what the pedagogical strategy or the discipline, all agree on the importance of teaching Asia. “Whether you are looking at the shelves at Wal-Mart or reading documents on defense strategy,” said Wilkinson, “Asia is a very important part of the economic, social and defense world [in which] all of our students will participate.”
New ECBU Professor Takes Up Operations Management Courses

By Chris Floyd

The newest member of the economics and business department, Maj. Benjamin Grannan is now in charge of teaching the operations management classes.

“A lot of attention is being paid to analytics and big data right now,” said Grannan. “All of that is operations, and [that] is what we teach in this class.”

Operations management is related to operations research, which is taught in VMI’s Department of Applied Mathematics. “Operations research versus operations management is a matter of degree,” said Col. Bob Moreschi, ECBU department head. “OR is more quantitative than OM, but the area of study is similar.” Those whose area of interest is business applications, said Moreschi, gravitate to business departments.

“Management science best describes it because we look at quantitative methods to model business problems,” said Grannan. “It quantifies decision making, and it gives the cadets in the department a lot of tools to do that.”

Grannan, who received his doctorate from Virginia Commonwealth University in May, joined the VMI faculty shortly thereafter and was thrown right into the fire, first teaching the operations management class to those cadets who stayed on for the summer session. In the fall, he taught two electives, including a supply chain management class he developed; this spring, he is back in the operations management classroom.

While the class does, as one would expect, involve number crunching and deals with “everything from inventory models to manufacturing and production models,” Grannan said he tries to gear the class to cadets’ interests.

“We try to make it very real-world for the cadets here,” he said, “using as many real world examples as we can. It’s a very applied class.” And if the cadets are not sure if they can apply those skills, they need look no further than Grannan’s own research. He uses operations management techniques for his research projects, of which there are quite a few right now.

“I like to do projects that have tangible results,” said Grannan. Even though he has not been on post for a full year, Grannan has already joined two of his colleagues in research projects. He and Maj. Bing Jiang, associate professor of economics, have teamed up to study how to optimize the schedules of doctors and nurses in the hospital setting. At the same time, he has joined forces with Lt. Col. Jeffrey Smith, assistant professor of economics, to study how to quantify decision making in NASCAR.

But his passion is the research on which he based his dissertation. “I looked at the logistics of military medical decision making, specifically how to use medevacs most effectively,” Grannan explained.

In this research Grannan uses operations management techniques to determine how to best deploy medical helicopters used by the military to evacuate casualties. He is hopeful that his findings will be used to help save soldiers’ lives.

“One of my co-authors is a medevac pilot, so there is a strong connection to the military medical decision makers,” he said. “I love doing the medevac project because it is very impactful with saving lives or minimizing the impact of casualty events.”

That, added Grannan, is the sort of power operations management can have.
The ancient Greek philosopher Thucydides was on to something when he postulated, “There is no need to suppose that human beings differ very much one from another: but it is true that the ones who come out on top are the ones who have been trained in the hardest school.”

And when it comes to success at Marine Corps Officer Candidates School — which assesses the leadership capabilities and sheer desire of aspiring Marine officers — the statistics back him up.

Indeed, over the past three years, 100 percent of VMI cadets who begin OCS have completed it, compared to 79 percent overall. Typically, about 20 rising 1st Class cadets are sent to the program every summer.

One key reason for VMI’s enviable track record is the preparation Marine-option cadets receive from their ROTC instructors in the form of Bulldog Physical Training, or PT. OCS-bound cadets take part in Bulldog PT twice a week — Monday afternoon for two hours and Friday mornings for one hour during Physical Training Time, or PTT. The ROTC also has “control days,” or training time, on some Saturday mornings.

“We find that the more physically fit they are going into OCS, the more rapidly they’re able to recover from the physical exertion and they begin to apply the gray matter between their ears in order to successfully complete some difficult and/or potentially complicated problems that will be cast at them,” explained Maj. Paul Beeman, Marine officer instructor.

Every Bulldog PT session is unique, incorporating challenges meant to test not only a cadet’s physical prowess, but also his or her mental toughness.

With no idea what each session will entail, the cadets arrive ready for what Capt. Shawn Ridings, who leads the PT, describes as “constant movement.” It’s all designed to acclimate cadets to conditions they may find themselves in at OCS.

“Around post we’ve got the different obstacle courses, we’ve got the hills, we’ve got the stadium — so we use everything and anything that we can,” said Ridings. “We can also add in a bit of discomfort for them by putting them in boots and utes [utility uniform]. That adds a different level of training. . . . We can put packs on them and go on hikes; we can make them carry around gear.”

In the midst of a PT session, cadets will also participate in small unit leadership exercises. During these exercises, cadets must delegate tasks to members of their group in order to efficiently complete an obstacle, allowing them to become accustomed to making decisions when they are tired, hungry, and frustrated.

“We attempt to create an environment that most closely replicates what they will experience when they get [to OCS], so they’re used to making those decisions and operating under a lot of pressure,” said Beeman. These taxing conditions force cadets to look out for their group and not focus on their own discomfort. “We’re looking for someone that cares more about others than themselves,” said Beeman.

“We do a lot of hollering, and that’s to simulate that chaotic environment,” explained Ridings. “We’re trying to get them to respond to orders as quickly as possible without forgetting what it is they’re trying to accomplish.” In this sense, some elements of Bulldog PT are almost a “Rat Line refresher” for upper class cadets.

“We find that the Rat Line sets them up for success in our program,” observed Beeman. “They’re used to having someone in their face and the physical exertion.”

The small number of cadets sent to Marine OCS every summer is indicative of the demanding nature of the Marine-option ROTC, which has the fewest cadets of any ROTC at VMI. Those in the Marine-option come to VMI with the ultimate goal of becoming officers, and the ROTC staff set them up to accomplish this objective.

“It is a joy to see them realize their ambition through their hard work and perseverance,” said Beeman. “We’re very proud of their success rate.”
Heather Magill ’15 continued to rewrite the VMI women’s swimming and diving record book as she competed in the final home meet of her career Jan. 24. Magill set new record in 3-meter diving, a record she had herself set just the day before, with a score of 285.60 points as the Keydets split a pair of meets, defeating visiting Ferrum College but falling to neighbor Washington and Lee University. Also posting victories for VMI were McKenzie Raber ’18 and Natalie Rivas ’18 in the 1,000-meter freestyle and the 50 free, respectively.

An extended road swing was tough on the VMI basketball team, but the Keydets won two of their last four games, including an 85-75 over archrival The Citadel Jan. 24 in Cameron Hall. The Keydets, who are 5-3 at home this season, placed five players in double figures, including Julian Eleby ’17 with 15 points.

The co-ed rifle team turned in a record-setting performance as well, setting a new school mark with 4,544 points in victories over The Citadel and Columbus State University Jan. 24 in Charleston, S.C. Jeremy Bolden ’15 led the way as the Keydets took the top six spots in the smallbore competition, scoring 573 out of a possible 600 points. Connor Sullivan ’15 was second, followed by Andrew Hickey ’17 and Kristen Voss ’15 to round out the scoring.

A three-match winning streak for the VMI wrestling team, all Southern Conference victories, was snapped recently, but 165-pound Shabaka Johns ’17 kept his individual string of victories alive. Johns scored a 2-1 decision over UT-C’s Justin Lampe to push his winning streak to eight straight, the longest winning streak for a VMI grappler since Matthew Brock ’12 emerged victorious in 11 consecutive matches during his senior campaign.

Former VMI basketball star Reggie Williams ’08 has made it back to the National Basketball Association, signing a 10-day contract with the San Antonio Spurs, his fourth NBA team since leaving Lexington. Williams holds 11 VMI records, including the career scoring mark. He left post with 2,556 points, an average of 22.8 points per game.
Air Force ROTC

Cadets Observe Air Refueling Mission

Air Force ROTC cadets got a glimpse of what their future may look like after commissioning when they visited the 151st Air Refueling Squadron, McGhee-Tyson Air National Guard Base in Knoxville, Tenn., Jan. 30. Fourteen cadets boarded a KC-135R tanker and observed an aerial refueling mission.

Lt. Col. Chris Jones ’96, operations officer at the 151st ARS, briefed the cadets prior to take off on the unit, aircraft history, and capabilities. Once airborne, cadets explored the aircraft from cockpit to tail, interacted with the crew, and took in all of the facets of the complicated mission. Cadets looked on as their aircraft refueled four F-16C Fighting Falcons from the South Carolina-based 157th Fighter Squadron of the Air National Guard and listened in on radio transmissions during air-to-air combat training engagements.

Following the mission, the cadets experienced aerial refueling in a brand new, state-of-the-art simulator. There, under the watchful eye and instruction of a boom operator, cadets practiced refueling virtual F-16s and gained an appreciation for the finesse and skill required to complete this complex maneuver.

Cadets also gained an appreciation for the way an operational flying unit functions, contrasting their expectations of a Spartan lifestyle full of regimented daily routine with the professionalism, teamwork, and proficiency they observed within the base facilities.

Naval ROTC

Cadets Prepare for Nuke Interviews

Thirteen 1st Class cadets in the VMI Naval ROTC program have been chosen to be interviewed for selection as U.S. Navy nuclear officers.

These cadets will face a challenging series of technical interviews, in which they are asked to apply their knowledge of mathematics and engineering to derive equations and solve problems to prove they have the foundation necessary for Nuclear Power School.

The next step is an interview with Adm. John M. Richardson, the director of the Naval Nuclear Propulsion Program.

Selection for the rigorous course of instruction required by Nuclear Power School is necessarily difficult. Although success in challenging engineering courses is preferred, non-technical majors may be selected if they show success in the calculus and physics courses required for all Naval ROTC scholarship cadets.

Correction

The article “Naval ROTC Marks a Birthday and an Anniversary” (November 2014), stated that the Class of 1978 was the first VMI Naval ROTC class to commission. In fact, the Class of 1978 was the first class to commission after having completed all Naval ROTC training at VMI. The Class of 1977 holds the distinction of commissioning the first officers through the newly established VMI Naval ROTC; however, members of this class completed some of their training off post.
New Head Coaches Hired for NCAA Sports

By Chris Floyd

There are plenty of new faces to be seen in the VMI athletic department these days.

In addition to Jonathan Hadra, named baseball head coach late last year, Dr. David Diles, VMI’s athletic director, announced the hiring of three other head coaches: Scott Wachenheim, the Institute’s newest football coach; John Freeman, who was tapped as the new men’s soccer coach; and Chris Bergmann, who will take over as VMI’s women’s soccer mentor.

“It’s certainly a strong endorsement of VMI that we are able to attract talented and experienced coaches and professionals to join our department,” Diles said. “Collectively, they bring exceptional skills and vision for their positions, and I’m certain that they will contribute substantially to the advancement of our department.”

Wachenheim comes to VMI from the University of Virginia, where he served as an assistant for the last five years. A graduate of the Air Force Academy, Wachenheim has 25 years of coaching experience under his belt, including three seasons at Liberty University, where he helped lead the Flames to two straight Big South Conference championships. As a player, he was a four-year starter for Air Force, earning first team All-Western Athletic Conference honors and honorable mention All-America consideration as a senior. He replaces Sparky Woods, who finished his VMI career with a 17-62 record in seven years with the Keydets.

Freeman did not have to travel very far to accept his new job; he served as an assistant coach at neighboring Washington and Lee University last year. A graduate of the University of Wooster, Freeman becomes the 14th VMI men’s soccer coach. He also had head coaching stints at Ferrum College in Ferrum, Va., and Ashland University in Ashland, Ohio. With Ashland, Freeman led the team to a top-20 national ranking and a Great Lakes Intercollegiate Athletic Conference title.

Freeman replaces Richie Rose, who resigned at the end of last season and finished his career with a 10-72-7 record.

Bergmann comes to VMI via Lake Forest College in Lake Forest, Ill., where he spent the last six years as the coach of the men’s soccer squad. Posting a 67-41-7 record during that time, Bergmann led the squad to a Midwest Conference title during the 2012 season and was named the conference’s coach of the year. Bergmann is no stranger to coaching women, however; he also spent a year as an assistant with the women’s soccer team at Northwestern University in 2008.

Bergmann takes the place of Bryan Williams, who was the VMI coach for 10 years, finishing his career with a 47-131-9 record.

The new head coaches have added to their staffs recently as well. For updates on coaching staff and other athletics information, visit www.vmikeydets.com.