The Charles E. Via, Jr. Department of Civil and Environmental Engineering

CEE ALUMNI NEWS

SUMMER 2011

Virginia Tech CEE students gain hands-on experience in the lab of the world

- *(Above) Bryan Carey plays with children in Zambia, Africa.*
- *(Below right) Bryan Carey with his friend Pete in Peru.*
- *(Below left) Matt Capelli with a group of Haitian children at the dedication of the bridge in Ti Peligre.*

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Via Department of Civil and Environmental Engineering Annual Newsletter Summer 2011

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THE GROVE OF SHARING

We found a way for everyone to grow with us, and a way to recognize everyone who gives so generously…

Trees have a varying abundance of gifts. And, like most any institute of higher learning, the Via Department of Civil and Environmental Engineering largely depends on the gifts we receive from our alumni, students, faculty and friends. These gifts help us achieve our goals in the areas of undergraduate and graduate teaching, research and public service.

We have found a way for everyone to grow with us, as well as a way to recognize those who generously give through our "Grove of Sharing" expandable tree sculpture beautifully displayed on the lobby wall of Patton Hall for all to see.

Eventually, each leaf on the tree will recognize every annual gift of $250 or more by engraving the name of individual donors. Every gift makes a difference and enables us to do more, be more and give more to our students, our nation and our world.

Gifts provide critical funding for:

- Teaching
- Student fellowships and scholarships
- A distinguished lecture series and professional seminars
- Faculty and student achievements and awards
- Recruitment support
- Student chapter leadership
- Cooperative education activities
- …and so much more

AS OUR GIFTS AND FAMILY OF ALUMNI GROW, OUR TREE WILL BECOME A GROVE.

Not only does the unique sculpture recognize our donors, but it becomes a part of the heritage of the Via Department of Civil and Environmental Engineering and will remain a centerpiece for all to see for many years to come.

Pledge to make an annual gift of $250 or more and we will engrave the inscription of your choice on a leaf on the tree and you will become a part of the Grove of Sharing tree and the Department's heritage.

Contact Sam Easterling at seaster@vt.edu to make your pledge today.

Note from the Department Head

Greetings from Blacksburg!! I hope you are having an enjoyable and productive summer. It is always a pleasure to write this message for our summer newsletter. This publication provides a great way for us to share highlights of student activities and projects from the recently completed academic year, as well as give you just a snapshot of some of the many wonderful things with which your fellow alumni are involved. We also like to take the opportunity to share a few of the awards and honors that have been bestowed upon some of our faculty and staff.

Our Student Chapter of the American Society of Civil Engineers had a busy and productive year. You'll have a chance to read about some of their activities on campus as well as their participation in the annual Virginias Conference. **Our student chapter has the honor and responsibility of hosting the 2012 Virginias Conference on March 30-31 in Blacksburg.** A number of you will be contacted to solicit your help and expertise as judges for the various competitions. If you are, I hope you'll try to make time in your busy schedule to come to town to assist our students with this event. Feel free to contact us first if you'd like to volunteer! We expect to have over 400 students and faculty advisors from approximately 12 schools on campus. We are planning to provide networking opportunities for our sponsoring firms and individuals. Please seek out the ASCE Student Chapter web site if you're interested in learning more about sponsorship opportunities. I can hardly wait to watch the concrete canoe races in Claytor Lake in March!

W. Samuel Easterling

The interest in international experiences for our students among future employers and our faculty continues to grow. These experiences may take the form of formal coursework, research opportunities or providing important service projects. An article in the newsletter highlights some of the outstanding service related work in which our students are actively engaged. Students had the opportunity during the first summer session to participate in two courses, led and taught by Virginia Tech faculty and an alumnus in Punta Cana, Dominican Republic. In addition to the formal coursework, there were opportunities for field trips and interactions with local people and culture. By all indications, it was a very successful "experiment," and an opportunity we plan to offer again. Although not described in this issue of the newsletter, members of our faculty continue to be involved with a number of international research endeavors that give both the faculty and students an opportunity to interact and work with international colleagues. I see our focus and effort to provide opportunities for students to participate in international learning experiences continuing to increase.

As civil and environmental engineers, many of us have been deeply involved with the subject of sustainability for many years – long before the topic became as nationally visible as it is today. As an example, consider the nearly 30 year success story of the Occoquan watershed project focusing on sustainable water use. That said, our faculty are increasing the discussions about sustainability in as many courses as possible and appropriate. We are all continuing to learn about effective implementation of sustainability topics in the curriculum. I certainly welcome your input on this subject.

Finally, I want to call your attention to an article in the following pages that highlights a few of the many success stories of some of our female alumni. I believe it is important to tell these stories as testament for young women who may be contemplating a career in civil and environmental engineering. We collectively need to let them know that our field not only has a place for them, but provides an opportunity to enjoy success in a profession that provides enormous benefit to society. I hope you will look for opportunities to share these stories with young women with whom you interact. I believe this is a direct way for you to support our profession, and indeed I believe that the future of our profession hinges on being able to attract talented, dedicated and hard-working individuals regardless of their gender.

I look forward to seeing many of you on campus during the coming academic year. We will be hosting our third annual CEE Homecoming on October 8 prior to the Miami game and we hope to see you there. I also hope that you will feel free to stop by the departmental office when you're on campus. I welcome the opportunity to catch up with those I know as well as meet those of you I don't know. Likewise, I encourage you to correspond with me anytime you'd like to touch base.

Sam Easterling

Driven to service:

CEE students gain hands-on experience in the lab of the world

by Estela Moen

In the 2008 edition of the *CEE Alumni Newsletter*, a story on then-graduate student Chris Strock (MS '06, Ph.D. '10) was featured. Strock had just received the Virginia Tech Graduate Student Service Award, in recognition of his academic accomplishments (including a Myers-Lawson Fellowship and a Vecellio Fellowship), his service work in Nigeria, Haiti and Belize, and his establishment of the student organization PACE (Poverty Awareness Coalition for Equality). His numerous projects abroad included: a drinking water assessment and the development of a water distribution plan for multiple schools and hospitals throughout Nigeria, the design of a public latrine and waste treatment system for L'Hopital Sacre Coeur in Milot, Haiti, school improvement projects (including water storage, filtration and distribution, trash collection, and foot path construction) for a primary school in Bella Vista, Belize and a bridge over the Fonlafe River in Haiti.

Today, Strock works for Bechtel in Gabon, Africa and continues to combine his engineering expertise with his passion for service work. "Infrastructure is the foundation of social and economic rights," he says. "Service work abroad is an opportunity to share with others what you've learned in physical and tangible ways and to help bridge the gap between inequality and the larger world to which we are all connected."

While not directly attributed to Strock's work, the desire for students to gain engineering experience in underdeveloped areas of the world is a trend that is growing in the CEE department. Academic and career advisor Kara Lattimer said, "In general, all engineering students want to solve a problem, but it's not necessarily a social problem. This is one of the qualities that sets CEE students apart from the other majors. I have noticed that many of them have a genuine desire to help others and make the world a better place in a practical way."

Academic advisor Estela Moen added, "The trend for this generation in particular is one of service and social consciousness. The pervasiveness of social media has led to a greater visibility of national and international disasters. On top of that, these students grew up with the internet so images of living conditions in poverty-stricken areas are incredibly accessible. In this case, I like to think that students are using this 'information overload' as a powerful tool for change. Whereas previous generations may have SAID that they want to change the world, this generation BELIEVES that they can change the world."

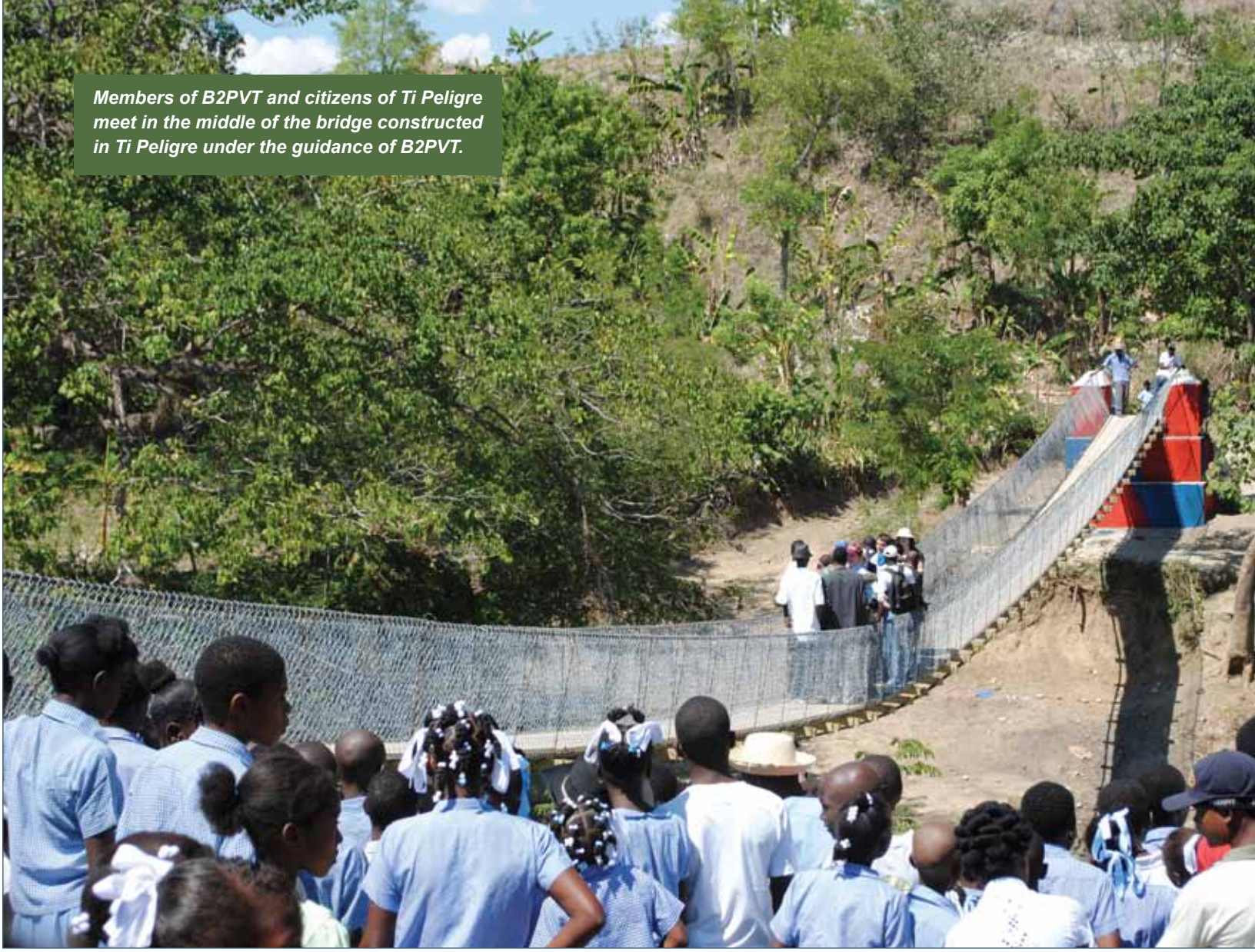
This year's graduating class featured some strong examples of students who were committed to using their engineering skills to improve the quality of life of others.

Sarah Ghali and Community Water Solutions

"Growing up I always knew that I wanted to 'see the world with purpose.' I wanted to live and work in a community, talk with the locals and really have the opportunity to experience a different culture," said Sarah Ghali (BS '11). When she was accepted into the Community Water Solutions (CWS) Fellowship program in the fall of 2010, she knew that she committing to spending the bulk of her final winter break in Ghana, but she was ready for the experience. Ghali said, "Preventable waterborne diseases caused by unsafe water are the third leading cause of death worldwide. There is a critical need for low-cost, appropriate water purification methods. CWS tries to address this, one village at a time."

CWS is a non-profit organization that partners with rural communities to establish sustainable water businesses, which are ultimately owned and operated by the communities that they serve. The techniques are simple and affordable methods to treat, distribute, and store clean, safe drinking water. The capital necessary to establish the water treatment businesses is generated from the fundraising activities of the CWS fellows, such as Ghali. However, the revenue from the sale of drinking water pays for the maintenance and operation of the businesses, thus making it sustainable.

While Ghali anticipated the "engineering" side of her work in Ghana, she was somewhat surprised when she learned that, "aside from translators, we [as CWS fellows] worked independently." In her first visit to her village of Yipela, she and her team learned that after taking water samples, they would need to schedule a meeting with the village chief and elders. "[It] was probably the most nerve racking day of the trip. At that point we did not know if the village would be interested in the water treatment center," Ghali said. "Thankfully, the chief had seen a water treatment center in another village and was so excited that we had come to his. He insisted that we not only have a meeting with the elders, but the whole village!" Today, the Yipela treatment center serves nearly 1,500 people who now have access to clean



Members of B2PVT and citizens of Ti Peligre meet in the middle of the bridge constructed in Ti Peligre under the guidance of B2PVT.

drinking water.

Ghali summarized her experience by saying, "As CWS fellows, we developed tangible skills such as fundraising, water quality testing, public speaking and project monitoring. More importantly, we had a direct impact in Ghana, empowering a community to provide for themselves a sustainable source of safe drinking water." However, it was the relationships she formed that she credits as her greatest take-away. She reflected, "My time in Ghana has opened my heart and mind. I have a greater understanding of African culture, I challenged my personal limits and I developed some great friendships along the way."

Bryan Carey fuses spirituality with engineering

Walking around campus, it can be hard to miss Bryan Carey (BS '11). Usually smiling, often barefoot and sometimes sporting a zip-up "onesie" with bright orange and red flames, it is far more than his dreadlocks that make Carey stand out. With such a large personality, it is no surprise that he has always been a little restless during his time at Virginia Tech.

"Going abroad and doing service work was something that I wanted to do for some time," Carey said. "I ended up doing a co-op in Newport News my second semester of sophomore year [spring 2006]. The plan was to work there through the summer as well, but I felt very strongly that if there was ever a time to go abroad, it was then." So instead of staying at his co-op through the summer, he ended up going to the Amazon jungle on a mission trip with his church. While his work there was primarily focused on the church, he took note of the severe lack of infrastructure.

Upon his return to campus that fall, Carey decided to switch his major from mechanical to civil engineering. "Once I saw all of the practical needs [of people in underdeveloped areas], I wanted to know how to help them meet these needs," he said. "So when I came back to Tech there was just no question in my mind. I wanted to do civil engineering so that I could return and really help out PRACTICALLY a lot more, in a lot of different ways."

That fall, Carey was also a mentor for some freshman engineering students. A group of them said that they were interested in service work abroad. As he discussed his experiences with them, he discovered that he still felt there was "unfinished business" for him to address, after seeing so much need overseas. After much soul-searching and real questions

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about his future as an engineer, Carey left campus again. This time, he did a co-op in Houston, Texas for seven months before heading back to the Amazon jungle. For the next year, he traveled throughout South America and then took an additional six months to return to the U.S., as he was travelling home by land (and often times, by foot).

Finally back on campus in the spring of 2009, Carey finished up his academic career in five semesters. This past spring, he graduated as the CEE class salutatorian and the CEE Outstanding Senior. He is spending the summer doing service work in Zambia, Africa before starting a job with Global Geophysical in Brazil where he hopes to continue doing humanitarian work when he's not doing his "day job."

He said, "Living Water is one of the main organizations I'm looking at getting involved with in Brazil. [The job with Global Geophysical] will be a good avenue for me to continue to do service work in slums overseas."

Ultimately, the idea of uniting his engineering aptitude with his spirituality is a natural one for Carey. "On a very practical level, civil engineering is a tool, but not the answer. I can try to meet some needs, but I can't think that I can go in and fix everything. Solving [the physical and spiritual problems] needs to happen in tandem in order to have a solution. It needs to be a spiritual fix for any of these other fixes to hold. Things [in slum communities] need to change in huge ways and we're not even part of the way there yet. But still, you can see little steps being taken and you think, '…but there's progress.' And it's just that attitude of gratefulness that really helps. When you reflect on how broken everything is, it can be daunting, but at the same time it's really good."

Bridges to Prosperity – the sum is greater than the parts

In March 2011, a group that included VTCEE students and Haitians walked across a 210-foot-long suspended footbridge connecting the village of Ti Peligre and the town of Casse in Haiti. The official bridge dedication was the culmination of a year and a half of work, and a true partnership between the Bridges to Prosperity Virginia Tech (B2PVT) student chapter and the Haitian citizens of the Ti Peligre area.

The village of Ti Peligre and the town of Casse are located in the rural Central Plateau of Haiti and separated by the Thomonde River. When the river level was low enough, the people of Ti Peligre could walk across it to access healthcare, school and the market. However during the rainy season, Ti Peligre citizens would often have to risk their lives crossing the river just to access these critical resources.

In the fall of 2009, Pamplin College of Business professor Bryan Cloyd contacted then-undergraduate Matt Capelli (BS '10) about an opportunity to build a bridge for a community in Haiti. Capelli said, "My experiences with the organization Appalachian Service Project showed me how much of a blessing my engineering degree was to the world and what it meant to give back and serve others with what I have been given. But when Bryan Cloyd contacted me about building this bridge, I had never even heard of the country of Haiti, I knew nothing about its history, and did not understand what pervasive third world poverty was at all." However, Capelli quickly got on board and recruited his friends, among them CEE seniors Chris Cooke and Tyler Welsh and recent graduates Maggie Mascaro, Katie Masoero and Nick Mason (all BS '11). That fall, a group of them went to Ti Peligre with Cloyd for a bridge feasibility study. Mason commented, "Once I got to Haiti, met the people, and saw the need, I was hooked. I then realized it wasn't about a project, it was about the people."

After the group's fall 2009 trip, they planned to begin construction in early 2010. However, the earthquake that January delayed the project. Their plans were on hold, but the group was not deterred. Quite the opposite, as Mason said. "When the earthquake happened, I realized that there were millions more people with even more need. I thought, if I can do something for this one village, in this one little area of Haiti, and if I can partner with Haitians to meet a small percentage of the need ... well then that would be a good start."

Groups of students from B2PVT returned to Ti Peligre in late 2010 over Thanksgiving break and again over winter break to work with a team of Haitians on the ground to ensure the on-time construction of the bridge. The project faced a number of obstacles and delays due to weather, land disputes and issues with materials, but the one consistent theme throughout the experience was the spirit, generosity and mutual appreciation between the people of Haiti and the students from B2PVT.

Mason and Welsh sacrificed the first few days of the spring 2011 semester to complete some critical construction tasks. On their last night, they found themselves chatting with villagers with a lone translator between them.

Welsh said, "Many of them began telling us one by one [their own reasons for why] they appreciated the bridge project so much, and how excited they were to see it completed. This was a very memorable night for me. Not only were we able to help with the construction of the bridge, but we were welcomed into a small community in the mountains of Haiti where we built relationships and shared life with one another, regardless of the language barrier. [The experience] has certainly shaped my world view and given me a learning experience not attainable in the classroom."

These testimonials prove that service-learning is something that is not just an ideal, but a very real and life-changing experience for many students. Capelli summarized, "Witnessing the transformation in our own lives led us, just a group of students, to found a chapter of Bridges to Prosperity at Virginia Tech. Our hope as a chapter is to provide an outlet for students to gain unique professional experiences while using the degree that they have been blessed with to serve others. We hope to not just bridge rivers, but also to 'bridge the gap' in students' lives to a life of service and the ultimate fulfillment of *Ut Prosim* (That I May Serve). We founded the chapter with the simple belief that everyone is blessed with special talents and skills and that every individual plays a role in making the world a better place. We want to encourage people to step out, develop relationships, and form partnerships with people across the world, and together, create something of greater value than what each can build individually. It's changed me and it's changed how I want to use my engineering degree."

From Terry to today: *the women of CEE*

by Estela P. Moen

A report from the American Society for Engineering Education states that the percentage of female graduates in civil and environmental engineering programs throughout the country is just under 18%. At Virginia Tech, the percentage in the College of Engineering and the Via Department of Civil and Environmental Engineering (CEE department) is slightly lower – closer to 15%.

Despite this seemingly large discrepancy, female CEE graduates overwhelmingly go on to be successful in many aspects of life. Whether they go on to work in consulting, business, government, academia or management of their home and family, the CEE department graduates some of the brightest and most powerful women in their chosen field.

While attracting women to STEM (science, technology, engineering and math) fields is a problem historically and nationally, federal and NSF-funded initiatives are working to draw more females to STEM degree programs in schools. Despite the fact that this growth is developing at a less-than-ideal pace, the CEE department is certainly doing its part to produce female graduates who rise to success. In fact over the past two years, nearly half of the top 10% of the CEE graduating class have been females, including the department's 2010 valedictorian Claire McKenzie White.

The first female CEE graduate

Professional success for female CEE alumnae is nothing new, although the road there has not always been smooth. The first five female students were admitted to Virginia Polytechnic Institute (VPI, now Virginia Tech) in 1921. According to the Virginia Tech archives, "administrators thought they would enroll in programs like horticulture, landscape gardening, and other branches of agriculture; instead, three majored in applied biology, one in applied chemistry, and one in civil engineering." The civil engineering student, Ruth Louise "Terry" Terrett (later Earle), graduated in 1925 as the first female CEE graduate from Virginia Tech.

Terry's time at VPI was a series of battles. She fought (among other things) exclusion in the school's yearbook, campus restrictions, and widespread open derision. She fought back by forming a women's basketball team and taking on some of the institution's most hallowed traditions. According to the publication,

Anne Ellis

Beth Turner

Generations of Women Leaders at Virginia Tech, Terry dressed in a cadet uniform and climbed to the top of the school's water tower, usurping a traditional test of cadet manhood.

She went on to work in the Washington, D.C. architect's office for six years where she met her husband. After her marriage and the birth of her two children, Terry took a nearly 20 year hiatus from engineering before returning to the profession in 1950 and ultimately retiring for good in the mid 1960's.

Since Terry's graduation in 1925, female graduates of the CEE department have continued her fine tradition of success both in and out of the engineering industry. But unlike Terry, who consistently had to battle her classmates, the more recent generations recall their time at Virginia Tech quite fondly despite the continued gender disparity.

Slow progress gains speed through the Vietnam Era

When Beth Turner (MS '73) entered Virginia Tech as a freshman in 1968, there were only about 1,100 women on campus, which represented less than 10% of the student population. In fact, while there were advances in the presence of women on campus in the 40+ years between Terry and Turner's time at Tech, progress was quite slow.

During the Vietnam era, however, change came quickly. Turner noted, "I attended Virginia Tech from 1968 – 1973 – a period of great change both

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Margaret Prehn Orr

Melinda Peters

Glenda Patron La Rue

at Virginia Tech and in society at large during the Vietnam War. The campus was growing and changing at a very rapid rate which made for a dynamic experience as a student." Over those five years, the female student population at Virginia Tech jumped from around 1,100 to approximately 4,000, representing a growth of over 250% in a very short period of time.

Turner cherished her time at Tech, worked hard for her success, and continued trailblazing throughout her professional career. Upon her completion of her master's degree in environmental engineering in 1973, Turner began working at DuPont and has been there ever since. Today, she is the Director of Global Operations Safety, Health and Environment (SHE) for DuPont. Recognized throughout the industry for her outstanding work ethic and leadership qualities, Turner has held numerous leadership positions. She is the past president of the Water Environment Federation, an international environmental engineering organization of 40,000 members, and she is also the founding chair of the Department of Homeland Security Chemical Sector Coordinating Council for the U.S. chemical industry.

As an alumna, she was the first female inductee of the Civil and Environmental Engineering Academy of Distinguished Alumni, has been a member of the College of Engineering Committee of 100 since its inception, and was named one of the Women Leaders at Virginia Tech on the occasion of the 75th anniversary of women at the university.

Turner reflected, "If anything, being a woman in the engineering field opened doors for me both at Virginia Tech and when I began work. My parents taught me to always be the best that I can be, so in many respects, the competition has always been with myself. I do think my own awareness that I was one of few, both in college and in the first half or so of my career, caused me to apply more pressure on myself to earn credibility and be perceived as truly deserving of opportunities. Today, I look back with satisfaction that the hard work made me a better engineer, a better manager, and a better person."

The numbers game

The number of females enrolled at the university continued to grow throughout the 70's and approached 40% by the turn of the decade; however, the percentage of females in the CEE program continued to hover under 10%.

Anne Ellis (BS '80) commented that she found the gender disparity less noticeable as her classes progressed.

She recalled, "[As an underclassman,] there were very few women in my dorm taking the same classes, so I really had to be proactive in finding and arranging time with study partners. But my junior year was transformational. Class sizes got smaller and the professors were so passionate about the subject areas and committed to supporting student success."

Still, Ellis says she could "write a book, maybe multiple books!" on the gender inequity challenges that she faced when she began her professional career in 1980.

Now the Vice President of Government Initiatives for AECOM, Ellis adds, "I am happy to say that women are far more common place today in engineering and the business world and on construction sites. Further, companies are recognizing the importance and value of diversity of thought and approach achieved when you have people of different perspectives. So I am hopeful that women entering the workforce today will not have to deal with the challenges my peers and I tackled."

Most would agree that Ellis's hard work has certainly paid off. She was recently elected vice president of the American Concrete Institute (ACI) and is the first female professional engineer and only the second woman in ACI's 107-year history to serve in this leadership position. She is a member of the Civil and Environmental Engineering Academy of Distinguished Alumni and her numerous recognitions for her industry knowledge include an appointment to the Environmental Technologies Trade Advisory Committee by the U.S. Secretary of Commerce.

Despite the honors and recognition that Ellis receives for her professional accomplishments, she counts her family, which includes three children and three stepchildren, as one of her greatest sources of pride. While two of

her children are Hokies, she notes that, "not a one chose engineering!"

To this day, Ellis values the mentoring relationships that she formed as a CEE student and is heavily involved with the CEE Alumni Board to continue to pay that mentorship forward. "An engineering degree seeds so many different career possibilities. [I tell students to] be agile and positively receptive to change and new challenges; you will have some amazing experiences and be well rewarded."

An environment that encourages success breeds confident leaders

Like Ellis, many female CEE graduates have continued to succeed personally and professionally, and have themselves become the mentors that they valued as students. By the 90's, the percentage of female CEE students reached approximately 15% where it hovers today. Despite the low percentage, female graduates from that time (and today) agree that this ratio challenges them in a positive way.

Margaret Orr (MS '90), now the Director of Plant Operations for the Central Contra Costa Sanitary District in California, stressed that during her time at Tech, the focus was always her research, rather than her gender.

"I found Virginia Tech to be a wonderful environment for learning. We were all busy working on very interesting real world environmental problems. The work was exciting and challenging and we collaborated often to solve problems." She added, "I was treated fairly and equitably at all times."

Melinda Peters (BS '95) noted, "I have never felt like I had to prove myself because I am a female. I did not have that experience at all in school or since I have been working. I have found that if you are honest and work hard, you will be successful. If you don't make it an issue, it won't be one."

After graduation, Peters began working for the Maryland State Highway Administration. She is now the director for the $2.6-billion, 18.8-mile Intercounty Connector (ICC) Project in Maryland, the largest highway project in the Washington D.C. area since Interstate 66 and one of the most significant.

Peters has been recognized numerous times for her work on the ICC including being named one of ENR's Top 25 Newsmakers for 2011. She was also featured in the cover story of the July 18, 2010 issue of *The Washington Post Magazine*.

However, Peters likes to keep things in perspective and takes care to balance her professional and personal lives. She finds tremendous support from her husband and two children, and enjoys competing in triathlons (including an Ironman race in 2010).

When asked what advice she would give a current female CEE student Peters said, "It is important to know that you can do anything you put your mind to. Set goals, set them high and strive for them in everything you do. Hard work is rewarded."

Orr agreed and also stressed the importance of developing a good support team. She would advise current female students to "work hard at collaborating with friends and colleagues because projects in the real world require thoughtful input from many directions to create cost effective, timely solutions."

Raising the bar... and the percentages

While some of the most successful CEE graduates are female, it does not eliminate the very real and persistent issue of the lack of females pursuing engineering majors.

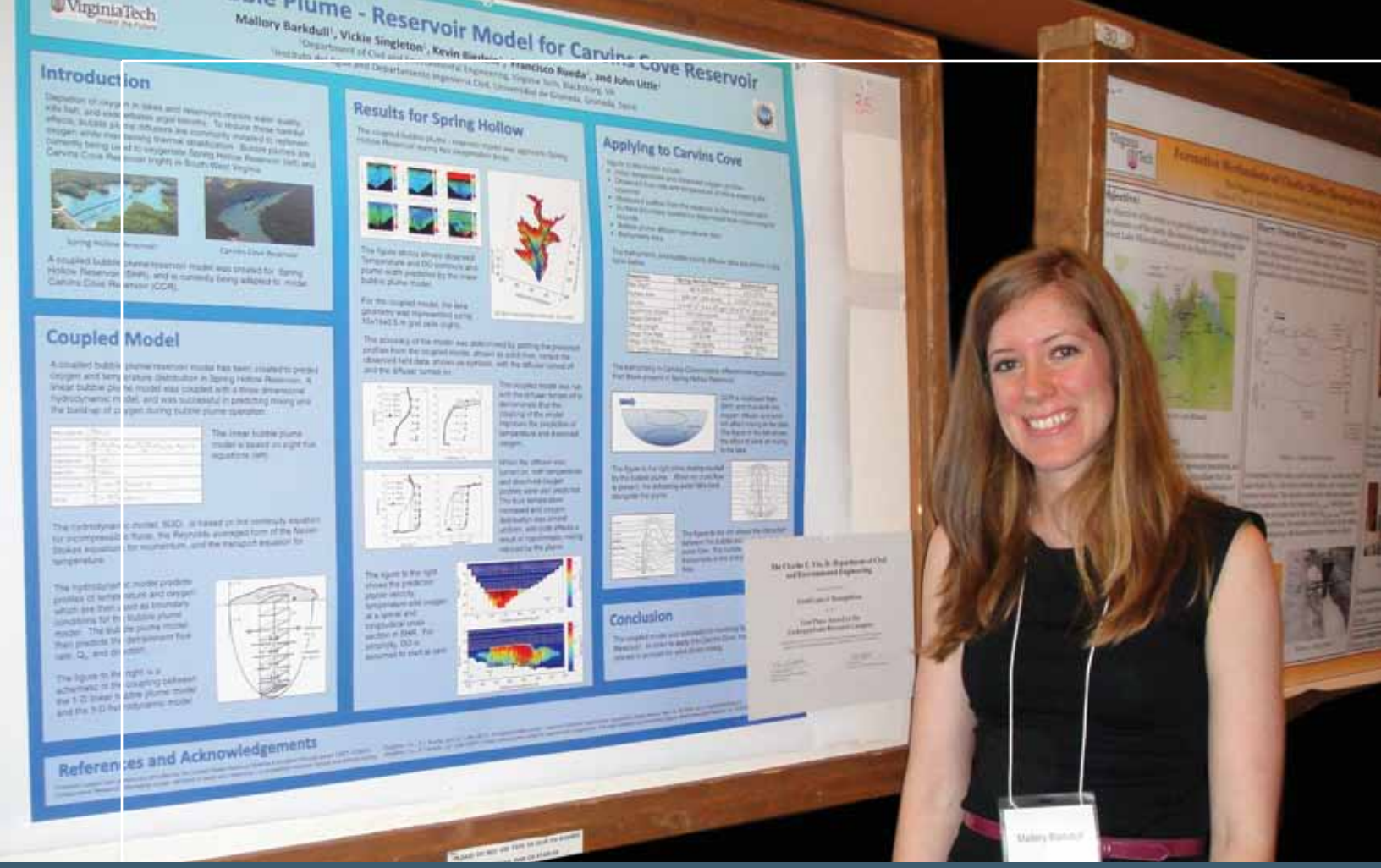
Bev Watford is the Director of the Center for Enhancement of Engineering Diversity and an alumna of both the mining and industrial engineering departments at Virginia Tech. In a *Collegiate Times* story published in January, she noted that females need to learn about engineering at age five or six, not at age 17 and older when it may be too late to change their mind.

Glenda La Rue (BS '91, MS '93) agrees that the process of "discovering" engineering needs to begin early. After working as a consultant and project engineer for the City of Columbus, Ohio, she decided to take a more active role in increasing the number of females pursuing engineering. She is now the Director of Women in Engineering for The Ohio State University where a significant portion of her job includes mentoring women and getting young (K-12) female students interested in engineering. She is also the current president of the Women in Engineering ProActive Network (WEPAN), a professional organization that aims to increase the capacity of higher education to advance the number and success of women in STEM fields.

La Rue said, "Introducing girls to engineering while they are young is absolutely necessary for the economic vitality of our nation. By middle school, most girls have formed attitudes about math and science, the building blocks of engineering. With not many role models, girls may have a tendency to overlook engineering as an exciting and viable career. Reaching out to girls as early as elementary school can help spark an interest that should be nurtured by parents and teachers around them. Ultimately, the quality of the products, solutions to problems and the technology of tomorrow will all be better if a diverse team of people are involved in the engineering that is behind them."

Looking ahead

With alumnae like the women featured in this article doing their part to serve as mentors and leaders for women in engineering, it is no wonder that the CEE department continues to produce some of the brightest graduates entering the workforce. In a department and profession that are still dominated by males, it is encouraging, though not surprising, to see female CEE Hokies making their mark on the civil engineering industry.



CEE Senior Mallory Barkdull's poster won the top prize for undergraduates. Her poster was titled "A coupled bubble plume-reservoir model for Carvins Cove Reservoir." Her advisor is Dr. John Little.

Undergraduate research provides opportunities beyond the classroom

While the concept of undergraduate research is nothing new, it has historically been an option, rather than a requirement, in the civil engineering curriculum.

The civil engineering undergraduate curriculum at Virginia Tech is challenging. Whether it is because of the sheer number of required credit hours, the coursework itself, or both, a BS degree from the CEE department at Virginia Tech is seen as a "badge of honor" by many in the civil engineering community and beyond.

It should come as no surprise, then, that the challenge of undertaking undergraduate research in the CEE department is never approached lightly. But once this decision is made, students and faculty alike agree that it is a very enriching and rewarding experience.

While the concept of undergraduate research is nothing new, it has historically been an option, rather than a requirement, in the civil engineering curriculum. Anecdotally, one of the main reasons that students go on to pursue graduate studies straight out of school is because of their involvement in some type of undergraduate research work. For Bill Knocke, W.C. English Professor of Civil and Environmental Engineering and Associate Vice President for Research Programs, the experience in undergraduate research certainly shaped his future. "I got [a job] in a lab working on a research project and that morphed its way into my graduate master's thesis," he explains. "I started out running experiments on hourly wage and then I began to meet with the faculty and [went over some ideas for the project]. He took those ideas back to the [project] sponsor and got the funding extended, and it became my graduate master's thesis." It is this valuable experience that drives many faculty members to take on undergraduate research students, and what motivated Knocke, with the help of the Chi Epsilon student chapter, to direct the Inaugural CEE Research Day. In this first year, eleven undergraduate and thirty graduate students' participated in the event.

The undergraduate CEE Research Day participants said that their research experience provided them with significant opportunities that they would not have had otherwise. Senior Sabina Fedrowitz, whose research topic was "The Crumbling of America's Infrastructure," was able to gain knowledge and perspective that she says she never would have gotten from the classroom alone. The intent of her research was not only to investigate the issue at hand, but also put together a comprehensive interactive presentation to be recorded and used as educational materials for middle and high school-aged children. She noted that the presentation aspect of her project improved her "soft" skills considerably. Indeed, the Research Day itself was cited by undergraduate and graduate students alike as a unique opportunity for them to work on their presentation and communication skills. As an added benefit, students could "practice" their poster presentations within the safe confines of a department-sponsored event rather than a large national or international conference.

While the opportunity to improve communication and presentation skills are appreciated, most students credit the act of research itself as being the most valuable. Graduating senior Mallory Barkdull, who received the undergraduate top prize for her poster titled "A coupled bubble plume-reservoir model for Carvins Cove Reservoir," cites undergraduate research as a key aspect of her time at Virginia Tech. Her first research opportunity came in the summer between her sophomore and junior year. "I was having difficulties finding a summer internship when I starting [hearing about] REU [research experiences for undergraduates] summer programs. I was never really interested in research, but I felt it would be a good chance to gain some hands-on experience during the summer. I was accepted to an REU [program] at Purdue, and after a couple weeks…I knew I was so lucky to have gotten the opportunity to start my research career. In my classes I was solving questions that had been asked before, but in my research I was given the chance to ask new questions that no one knew the answer to. After that summer, I started pursuing every research opportunity I could find."

Mallory went on to do undergraduate research for the remainder of her time at Virginia Tech and credits it with shaping her future plans. "I am where I am today, starting my master's and Ph.D. at Stanford in September with an NSF graduate research fellowship, because of my undergraduate research experiences. I think my research helped me stand out against the other applicants."

It is this type of student testimonial that fuels faculty interest in undergraduate researchers, and turning stellar undergraduates into the next class of master's or Ph.D. students. Knocke said that knowing a student was a successful undergraduate researcher can be a great sign for their potential as a graduate student. "It makes you [more willing] to invest precious research funding into people if you know that there's a pretty good chance of it working out." He added that the presence of undergraduate research on an application can often shed more light on that applicant's potential than the "usual" metrics of GPA and GRE scores. "There are a lot of things in the application that you don't know. How willing are they to come in on the weekends?" Knocke also noted that undergraduate research can benefit the faculty's research group as a whole. "Part of [the draw] is the integration into the research continuum of the group so that from a day-to-day basis [the students are] doing better if they're working under the tutelage of a master's student, a Ph.D., a post-doc, etc. To me that goes into the professional development of that individual as a mentor."

It is clear that the benefits of a solid undergraduate research program are not limited solely to the undergraduate student; but for some, it can be the highlight of their collegiate experience. As Mallory noted, "I can't stress enough what a difference my undergraduate research opportunities have made in my academic career. I have had the chance to network and work with professionals from all over the world. More than that, I was given the opportunity to learn and gain experience not available in the classroom."

Students, faculty, staff and alumni board members mingle and chat at the Inaugural CEE Research Day held at the Inn at Virginia Tech this spring.

2011 CEE Alumni Achievement Awards Program

In 1998, the Via Department of Civil and Environmental Engineering and the CEE Alumni Board formally initiated the CEE Alumni Achievement Awards Program as a means of honoring both younger alumni and those who have graduated from the department years ago. Two award categories were created within this program: the Academy of Distinguished Alumni and the Outstanding Young Alumni Award.

Alumni may be selected for induction into the Academy of Distinguished Alumni (CEE Academy) based upon a review of their overall career accomplishments and contributions to the profession, their community, and service to Virginia Tech. Younger alumni within 15 years of their undergraduate BS degree may be selected to receive an Outstanding Young Alumni Award.

After this year's induction, there are a total of 84 members in the CEE Academy and 38 Outstanding Young Alumni.

The Inductee Class of 2011 Academy of Distinguished Alumni

Mr. Julian Bell, Class of 1962
Mr. H.D. Campbell, Jr., Class of 1969
Dr. Julio Davalos, Class of 1985
Mr. Jack Rinker, Class of 1960

Outstanding Young Alumni

Mr. Cameron Palmore, Class of 1995
Ms. Melissa Peters, Class of 1995
Mr. Derrick Shelton, Class of 1996, MS 1997, MBA 2002

Inductee Class of 2011, from left to right: Derrick A. Shelton, Dr. Julio F. Davalos, Melinda B. Peters, Jack E. Rinker, F. Cameron Palmore and H.D. Campbell, Jr. (not pictured, Julian B. Bell)

Each year, candidates for these awards come from nominations submitted directly to the CEE department by our alumni. If you are interested in nominating someone for the CEE Academy or the Outstanding Young Alumni Award, please follow this link to the nomination form: **www.cee.vt.edu/alumniawards/**

Forms can be completed electronically through the website or via email to **epmoen@vt.edu**, or printed and mailed with supporting documents to:

Estela P. Moen, Alumni Relations
Via Department of Civil and Environmental Engineering
Virginia Tech
200 Patton Hall
Blacksburg, VA 24061

McKinney honored for his career achievements

By Lynn Nystrom

Art W. McKinney, of Beaverdam, Va., who earned his bachelor's degree in architectural engineering from Virginia Tech in 1966, is an 2011 inductee into Virginia Tech's College of Engineering Academy of Engineering Excellence, joining an elite group of 105 individuals out of more than 55,000 living engineering alumni.

The Academy of Engineering Excellence was founded in 1999 by F. William Stephenson, past dean of the college of engineering, and the College's Advisory Board. The inductees are engineering graduates of Virginia Tech who have made continuous and admirable engineering or leadership contributions during their careers.

This year marked the 12th anniversary of the first induction.

McKinney was fathered by a pilot and instructor for the U.S. Air Force during World War II and quickly became well traveled at an early age. When barely a month old, his family moved along the east coast, from Florida to South Carolina, and then Georgia. McKinney completed high school in Virginia.

In 1961, McKinney began his freshman year at Virginia Tech and became a member of the leadership-oriented Corps of Cadets. His initial interests included architecture, but structural engineering was the educational track he would choose. McKinney noted his improved focus throughout college could be attributed to the four years he spent in the Corps.

One of his structural engineering professors, Don Garst recalled fondly, "For two years, Art was the Honor System."

After graduation and for the first 11 years of his professional career, McKinney was employed by J. Robert Carlton and Associates, located in Richmond, Va. There he

Art McKinney

was given the opportunity to operate as the lead engineer for the Market Square Arena project in Indianapolis. "We brought it in on time, and on budget using fast track, phased construction," said McKinney.

Completed in the early 1970's, the 364-foot-diamter dome had 21,000 seats, covered two city blocks, and spanned Market Street. The stadium served as the venue for the Pacers, the Ice, and rockers Motley Crue. On June 26, 1977, the facility housed more than 18,000 fans as they watched Elvis Presley perform a 20-song set, known famously as Presley's final stage performance.

Thirty years ago, McKinney began a new page in his professional career when he started his own full-service design and construction firm, McKinney & Company. "We did do some gee-whiz engineering and have built some really cool stuff," McKinney said.

One of McKinney's projects has contributed significantly to overall vehicle safety. They developed a profound engineering solution for the Insurance Institute for Highway Safety's Vehicle Research Center (VRC).

After 15 years of running his own business, McKinney turned his company in a different direction. Instead of big box manufacturing, he turned his facilities into complex cleaning facilities, clean room manufacturing, data centers, and life science centers.

McKinney & Company quickly grew and with international expansion in Panama, McKinney continued his work combining manufacturing with life sciences. His efforts include controlling insects and eliminating parasites. "Sterile Insect Technique, the mass rearing, sterilization, and release of such insects saves the citrus and cattle industries billions of dollars," said McKinney.

McKinney's projects have been challenging, inspirational, and necessary. "Don't let artificial boundaries set by yourself or other people limit what you can do. You should be defined by your character. There is no box," said McKinney at his commencement speech to Virginia Tech engineering students in 2009.

That same year, McKinney's company completed a $63 million, Bio-Safety, Level 3 (BSL-3) project, in Prince Edward County, Va. The Bio-Safety, Level 3 laboratory was designed to contain agents that

Continued on next page

"We did do some gee-whiz engineering and have built some really cool stuff."

may cause serious or lethal disease as a result of contact or inhalation. Currently, McKinney's firm has started work on their first Level 4 facility, one of five in the entire country.

As a Fellow of the American Council of Engineering Companies (ACEC), a group of 5,600 engineering firms, McKinney serves on four technical committees. He is an instructor for the American Concrete Institute (ACI), a technical and educational society dedicated to improving the design, construction, maintenance and repair of concrete structures. McKinney is also an active member of the American Cancer Institute Board, South Atlantic Division.

His faithful support for his alma mater, Virginia Tech, is both nostalgic and apparent. "When you go to Virginia Tech, you set down some serious roots. If you didn't, you missed an important fork in the road," commented McKinney. He recently attended his 45th year reunion in October of 2010.

His work at the university also continues. McKinney is a distinguished instructor in the Division of Continuing Education and Public Service Program and has served six years on the Via Department of Civil and Environmental Engineering Alumni's Board.

In 2009, McKinney was inducted into Chi Epsilon and was named the College's Distinguished Engineering Alumnus. He serves on the College of Engineering's Committee of 100 and is a past chair of the College Advisory Board.

McKinney and his wife Jerry have a daughter, Christine, and a son, Art; both Virginia Tech graduates. They also have a granddaughter who "is already Blacksburg bound," McKinney predicts.

From left to right: Sam Easterling, Art McKinney, and Virginia Tech's College of Engineering dean, Richard C. Benson.

Carson named distinguished alumnus

By Lynn Nystrom

Dan Carson never had to stray too far from his roots to have a 40-year extremely successful career as a dynamic electric power industry executive who has also served on countless state, community, and economic development boards, as well as a stint as a chair of a United Way campaign.

Carson is the 2011 Distinguished Alumnus for Virginia Tech's College of Engineering and was honored at the May 14 college graduation ceremony.

"Dan is a long-time friend of the college, working on our Advisory Board as well as with his home department of civil and environmental engineering. He has orchestrated major industrial support for our Institute of Critical Technology and Applied Science. His legacy with the electric power industry is well-deserved, and we are pleased he has accepted our offer of Distinguished Alumnus for 2011," said Richard C. Benson, dean of the College of Engineering at Virginia Tech.

Born and raised in Pulaski, Va., some 30 minutes away from the Virginia Tech campus, his fate seemed predetermined. His father was an electrical engineering graduate of Virginia Tech, and a member of the Corps of Cadets. As a young boy, Dan quickly became a fan of his father's alma mater, and trips to campus propelled the Blacksburg university to his number one choice for obtaining his college degree.

Seemingly, his only indecisions occurred around his 18th and 19th birthdays. He entertained thoughts of a biology degree, and maybe pursuing dental school. But with the influence of his father, and his parents' engineering friends, Dan enrolled instead in architectural engineering in 1966, and was a member of the Corps of Cadets. A curve ball was thrown at him when Virginia Tech decided to eliminate its architectural engineering program after his freshman year, so he switched majors to civil engineering. He took this time to face another fork in his road, and opted out of the Corps, feeling the need to devote most of his time to his engineering studies.

During this time, fate was also unkind as his father died unexpectedly from a heart attack in 1967. But the executor of the senior Carson's estate, a close family friend, made sure that the remainder of Dan's college education was paid. The executor was also an employee of Appalachian Power, and the company "was in my blood, so to speak," Carson said today. It provided him with summer jobs as a member of a surveying crew during the summers after his first two years in college.

Dan Carson

Upon Carson's graduation, he accepted a position with Appalachian Power's Roanoke office. As he moved rapidly into a senior design role, he started to think about his long-term career path. Looking at management possibilities, he decided to enroll in business classes at Lynchburg College on a part-time basis for five years. He received his master of business administration in 1977 and the opportunity to work directly under the president of Appalachian Power in Roanoke.

After four years, the president, a mentor to Carson, recommended that Appalachian Power sponsor the budding executive for the master of science program in management at the Massachusetts Institute of Technology. With his family in tow, he moved to Boston for 12 months, and secured his third degree that opened the doors to just about any management position with American Electric Power. He returned first to Roanoke as an assistant manager for six months, and then moved to Abingdon, Va., to become a division manager.

In 1992, Joseph Vipperman, a Virginia Tech electrical engineering graduate and now a retired vice president of American Electric Power, appointed Carson to a vice-president position, with responsibility for the company's rates and contracts, accounting, and government affairs functions. The latter meant acting as a lobbyist, and Carson discovered the "government had a lot of influence on the well-being of the company, and the atmosphere was very competitive. As a lobbyist, and later as a manager of our lobbying corps, I understood that integrity and credibility were paramount. Without them, you were dead, so to speak, given that it's nearly impossible to recover."

In 1996, his accomplishments led him to the position of American Electric Power President for Virginia and Tennessee, and he later returned to a similar position with Appalachian Power, based back in Roanoke, when a regional operating structure was reinstituted across the AEP system. In 2010, at the age of 62, he retired from his Roanoke office, but he still dabbles in some speaking opportunities with the power industry.

His charitable work has been and remains very important to him, serving as the 2009 annual campaign chair for the United Way of Roanoke Valley, and currently in a leadership role for the March of Dimes efforts. In 2010, he successfully proposed and brought to fruition a $1 million gift from AEP to Virginia Tech in the name of his friend and colleague, Vipperman.

He is a member of the Virginia Tech College of Engineering's Committee of 100, a former member of the College Advisory Board, and in 2007 was inducted as a member of the Academy of Distinguished Alumni of the Via Department of Civil and Environmental Engineering at Virginia Tech.

Widdowson receives Certificate of Teaching Excellence

Virginia Tech's College of Engineering held its fourteenth annual engineering faculty reception, honoring two dozen of its faculty for various awards in teaching, research, service and outreach. Mark Widdowson, assistant department head and professor, was one of four recipients of the 2011 College of Engineering Certificate of Teaching Excellence.

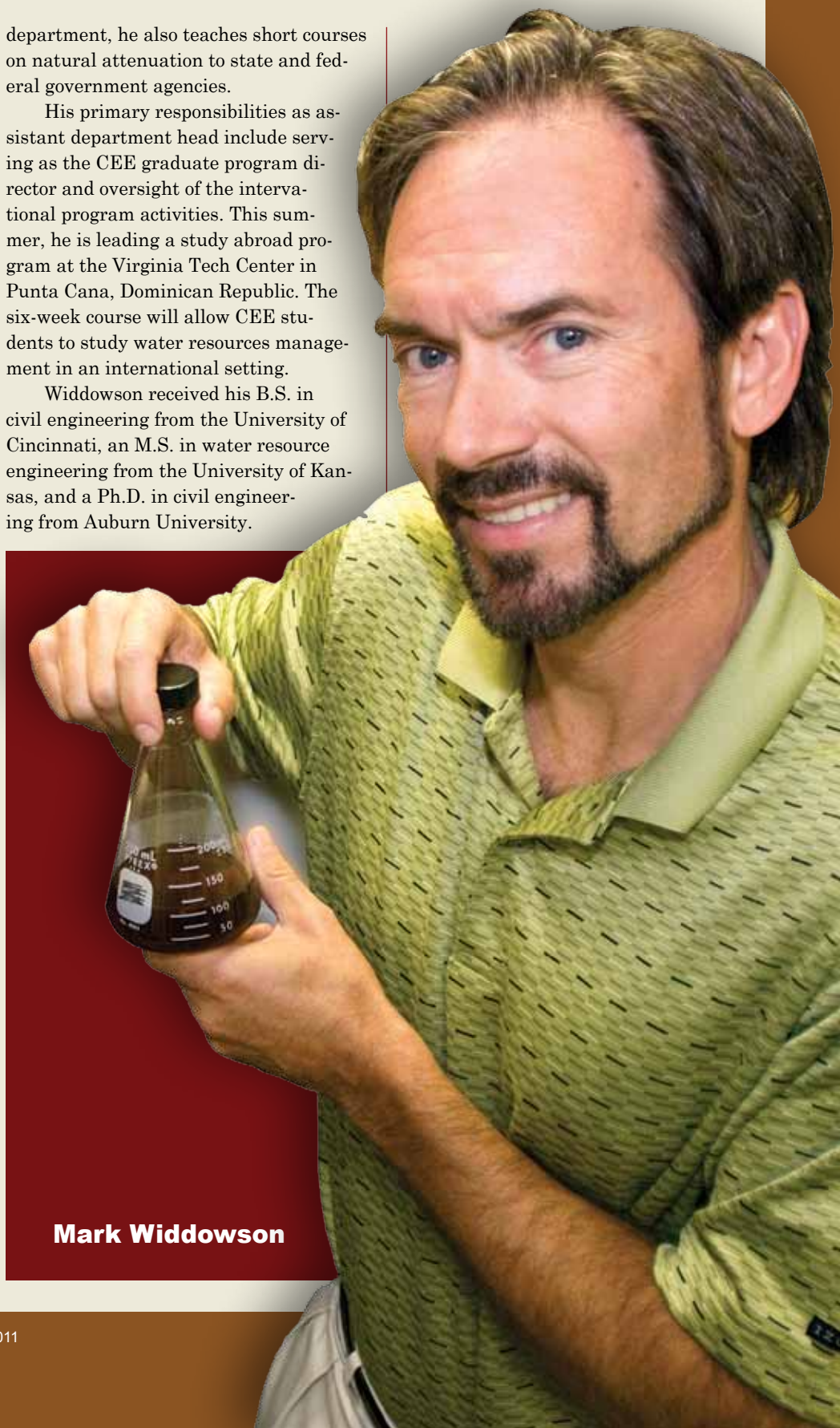
Widdowson also received the 2011 Samuel Arnold Greeley Award from ASCE for the paper "Stimulating in situ hydrogenotrophic denitrification with membrane-delivered hydrogen under passive and pumped groundwater conditions," published in the August 2009 issue of *ASCE Journal of Environmental Engineering*. The Samuel Arnold Greeley Award recognizes excellence in papers on the design, construction, operation, or financing of water supply pollution control, storm drainage, or refuse disposal projects. The award is given under the auspices of the ASCE Environmental and Water Resources Institute.

Widdowson is an expert in reactive contaminant transport modeling and has 20 years of experience creating, developing, and applying computer models for subsurface remediation of petroleum hydrocarbons and chlorinated solvents. He is the coauthor and principal investigator of the solute transport code SEAM3D for simulating biodegradation and transport of contaminants with NAPL dissolution in aquifers and NAS.

Widdowson's teaching and research interests include bioremediation and phytoremediation, modeling groundwater flow and transport, hydrology, and hydraulics. In addition to teaching Hazardous Waste Management, Fluid Mechanics, Groundwater Resources, Dynamics of Groundwater and Numerical Modeling of Groundwater Flow and Transport for the CEE department, he also teaches short courses on natural attenuation to state and federal government agencies.

His primary responsibilities as assistant department head include serving as the CEE graduate program director and oversight of the intervational program activities. This summer, he is leading a study abroad program at the Virginia Tech Center in Punta Cana, Dominican Republic. The six-week course will allow CEE students to study water resources management in an international setting.

Widdowson received his B.S. in civil engineering from the University of Cincinnati, an M.S. in water resource engineering from the University of Kansas, and a Ph.D. in civil engineering from Auburn University.



Mark Widdowson

Moen receives 2011 CEE Alumni Teaching Award

Estela Moen, academic advisor and instructor, is the 2011 recipient of the CEE Alumni Teaching Excellence Award.

The CEE Alumni Board selects the recipient of this award based solely upon nominations received from the CEE alumni who have graduated in the past five years.

Moen joined the CEE department in 2008 as an academic advisor and alumni relations coordinator and began teaching the course Professional and Legal Issues in Engineering (often referred to as P&L) in 2009. She teaches this course each semester with class size ranging from 110-140 students per class.

In evaluating the course, Moen wanted to place a greater emphasis on professional development and communication skills of new engineers.

"P&L is a 'catch-all' course which brings together many sides of professional civil engineering that students aren't necessarily exposed to in their theory and design classes: law, contracts, ethics, contemporary issues and professionalism. I realized that some of the greatest lessons in my undergraduate degree that stuck with me over the years came out of my [P&L-type] class so I hope to give students that same experience."

"One thing that I heard repeatedly about this course is that no matter how it is presented, the material can be dry. It is critical information, but how does one ensure that the message isn't lost in the delivery?"

To keep the material engaging, Moen invites guest lecturers from academia and industry to give students a first-hand account of class examples and incorporates classroom debates and leadership exercises to encourage student interaction.

Moen received her bachelor's degree in engineering from Duke University and master's degree in civil engineering from The University of Virginia.

She worked for nearly six years in the civil engineering industry for Whitman, Requardt and Associates, Vollmer Associates (now Stantec Inc.) and Jacobs Civil, Inc. She received her professional engineer license in the state of New York in 2002, and worked for another year in engineering before shifting her career into the non-profit sector.

She was a program manager The Leukemia & Lymphoma Society for five years, where she focused on fundraising, event planning and motivational speaking, before coming to Virginia Tech.

In addition to teaching, Moen serves as an academic advisor to 150 undergraduates and works on departmental marketing and alumni relations, including composing and publishing the quarterly CEE alumni e-newsletter and annual CEE alumni magazine, planning and executing CEE alumni events, and supporting the efforts of the CEE Alumni Board.

Estela Moen

"Some of the greatest lessons in my undergraduate degree that stuck with me over the years came out of my [P&L-type] class so I hope to give students that same experience."

Mouras selected for Loganathan Award

The G.V. Loganathan Faculty Achievement Award for Excellence in Civil Engineering Education was presented to Vickie Mouras, assistant professor of practice. This award is given annually based upon the voting of current undergraduate and graduate students in the CEE department.

Mouras (B.S. '78, M.S. '97) is a CEE alumna who has been affiliated with the department for over 30 years. She returned to the department as a full-time assistant professor of practice in 2010 after working as a senior project manager on new construction in planning design and construction at Virginia Tech for three years. There, she was specifically responsible for managing capital projects, including dormitory, classroom, administrative, dining, faculty office, and lab space, from design through construction and warranty.

From 1996 to 2007 she was an instructor in the Via Department of Civil and Environmental Engineering. In that position, she established and managed academic and career advising programs for an undergraduate student body of approximately 500 students, served as ASCE student chapter advisor for five years and managed student/ employer and student/alumni board interactions.

Mouras is applauded for bringing her professional and military experience to the classroom and providing tangible, real-life examples to the numerous classes that she teaches in the construction engineering and management and the structural engineering and materials program areas. These undergraduate civil engineering classes include: Introduction to Civil and Environmental Engineering, Theory of Structures, Design of Steel Structures I, Reinforced Concrete Structures I, and Estimating, Production and Cost Engineering.

Vickie Mouras (left) receives a surprise visit during her Design of Steel Structures class and is presented with the Loganathan Award from Dr. Randy Dymond, ASCE faculty advisor, and Dr. Sam Easterling, CEE department head.

The years from 1979 to 2004 found Mouras serving in the U.S. Army with several leadership highlights. For example, in Enduring/Iraqi Freedom, she served as a project manager for over $204 million worth of power projects in Iraq, and was specifically responsible for daily coordination with large private contractors and U.S. military forces to ensure complex project success in a highly challenging physical and political environment. She was also responsible for the leadership, task management, logistical support, administration, and physical security of a 10-person government civilian contracting support team.

In addition to course instruction, Mouras leads the department's assessment activities in support of outcomes-based accreditation requirements. Her previous awards and recognitions include: Faculty Advisor of the Year, Zone II, American Society of Civil Engineers in 2006; Alumni Teaching Excellence Award from the Via Department of Civil and Environmental Engineering, Virginia Tech in 2005; Legion of Merit for exceptional career service, U.S. Army in 2004; Bronze Star for performance of duties in a combat zone, U.S. Army in 2003; and the Excellence in Career Advising Award, Virginia Tech in 2003.

The G.V. Loganathan Faculty Achievement Award for Excellence in Civil Engineering Education, presented by the Virginia Tech chapter of the American Society of Civil Engineers (ASCE), was previously named the CEE Faculty Achievement Award. The name was changed in 2008 in memory of G.V. Loganathan, who won numerous teaching awards in the department and university, including the University's prestigious Wine Award in 2006, the Dean's Award for Excellence in Teaching in 1998, and multiple College of Engineering Certificates of Teaching Excellence.

Lisa Decker

Note from the Alumni Board Chair

By Lisa Decker

Ut Prosim, "That I may serve." This motto truly represents what makes the students, alumni, faculty and staff of Virginia Tech very special.

As I meet alumni throughout the country, I am always amazed at the generosity of their time and their kindness to others. As Civil Engineers, we have a real impact when we serve others. Our ability to solve problems in the highest quality, most economical way makes us valuable members to any volunteer organization. The leadership and mentoring we provide to young engineers helps them to grow to their fullest potential.

Examples of living by the motto *Ut Prosim* can be found among the students of the CEE department. Our students participate in service projects through student chapters of many organizations, including ASCE and Engineers Without Borders. The VT chapter of Bridges to Prosperity (www.B2PVT.com) designed and built their first bridge in Haiti in January of this year. They have returned this summer to plan the next bridge.

For every student organization, there is a faculty or staff member who gives their time to guide them. Our faculty not only teach, but they continually strive to provide the best learning environment possible. Dr. Chema de la Garza has kept me engaged with his classes to bring the "real world" into the classroom to reinforce their learning.

As a member of the Alumni Board, I have had the privilege to get to know many faculty and staff and see their efforts first hand. Their talents amaze me. Dr. Mike Vorster once told me, "Mine is not to teach, but to cause my students to learn and to build a curiosity that will keep them learning the rest of their lives."

Our faculty members are shaping the future of our industry with their research and their passion for educating our future stars.

The members of the Alumni Board volunteer their time and resources to enhance the experience our students have in the department. We form panels to speak to students about our experiences, offer one-on-one mentoring, and host events to interact with the students.

The Board also provides support to the department in sharing our thoughts on current trends in the industry and how we can continue to prepare our students for successful careers.

The university will undergo a strategic planning process during the 2011-2012 academic year. If you would like to share your thoughts on what is important to the civil engineering profession today and what will be important in the future, we will include them in our discussion as the Board provides its input to Dr. Easterling.

There are many opportunities for alumni to exemplify the Hokie Spirit. I encourage you to continue the great work you are doing and to seek out more opportunities to live the words *Ut Prosim* and be great ambassadors of Virginia Tech.

We continue to look for professionals to speak to student organizations on campus and to share your "real world" experiences in the classroom. You can provide office visits over winter break for CEE students. The student chapter of ASCE is seeking judges for the Virginias Conference to be held in Blacksburg in March 2012 and financial support of all of the student organizations is always needed. There are also regional opportunities to support Virginia Tech.

To learn more about supporting the department, connect with us on Facebook and LinkedIn, or visit the department website. Also visit the website for VT-ENGAGE (www.engage.vt.edu). It is a program to connect members of the Virginia Tech family to volunteer opportunities, including ones in your community.

John F. Kennedy said, "As we express our gratitude, we must never forget that the highest appreciation is not to utter words, but to live them."

We celebrate the experience given to us by Virginia Tech by continuing to serve others and the CEE department as alumni. I look forward to a great year of serving you and our department with the truly exceptional members of the Alumni Board.

Thank you for making us proud every day.

NEW BOARD CHAIR — LISA DECKER

Lisa Decker is a project manager with The Whiting-Turner Contracting Company. Whiting-Turner is a national construction management and general contracting firm, ranked third in ENR's Top Domestic Builders.

Based in Baltimore, Md., Lisa has been with the firm for 16 years. She has built over $235 million in projects, focusing primarily on healthcare, university, and federal government work. She is a LEED Accredited Professional.

Lisa is a graduate of Virginia Tech, where she received bachelor's and master's degrees in civil engineering with a graduate emphasis in construction engineering and management.

In 2000, she was awarded the Virginia Tech Department of Civil and Environmental Engineering Distinguished Young Alumni Award, and in 2008 she was awarded the Vecillio Construction Management and Engineering Program Outstanding Alumnus Award.

Lisa serves on the Board of Directors of the Better Business Bureau of Greater Maryland and as Chair of the Ft. Meade Alliance Wounded Warriors Committee.

She is a former member of the Board of Directors of the American Institute of Architects (AIA) Baltimore Chapter and the Baltimore Building Congress and Exchange (BCE). Lisa remains active in the BCE, serving on the Craftsmanship Committee.

Lisa teaches an introductory construction management course in the Johns Hopkins University Carey School of Business Masters of Real Estate Development Program.

Lisa and her husband, Spencer Alvey, live in Phoenix, Md., with Jason (16), Kayla (14), Kellan (6 mos.) and their dog, Jordan.

CEE *Alumni Board 2011*

NEW BOARD MEMBER — JIM CARTER

CARTER

Jim Carter, P.E. is Chief Engineer Bridges & Structures for Norfolk Southern Corp., headquartered in Atlanta. His duties include responsibility for setting policy for the management of bridges, tunnels, and culverts, and overall responsibility for the structural capital improvement program, and structural repair program for the 20,000 route mile railway, located in 28 states.

He joined Norfolk and Western Railway as a Management Trainee in 1975 after receiving his BSCE from Virginia Tech, where he was also a Co-op student with Southern Railway. Norfolk and Western and Southern merged in 1982 to form Norfolk Southern. He has since served in various field and office positions at several locations on the railway, including being responsible for maintenance of the Railway's large Lamberts Point coal exporting facilities in Norfolk from 1986 until 2000.

Jim was responsible for the Heartland Corridor Clearance Improvement Project, which was completed in 2010 and has been called one of the most ambitious railway engineering projects of the last 100 years. The project increased clearances at 52 locations spread over 354 miles, including 28 tunnels having a total length of 5.5 miles. The work was done in windows, allowing the railway to remain operational as the project progressed. The project allowed a reduction in transit time of a day for Norfolk – Chicago traffic. Jim is a Director of the Structures Functional Group of the American Railway Engineering and Maintenance Association (AREMA); a member of AREMA Committee 15 – Steel Structures; a member of the American Society of Civil Engineers, the Coasts, Oceans, Ports, and Rivers Institute; and is a registered Professional Engineer.

Jim lives in Bold Springs, Ga., with his wife Lynn. He has two sons, Jimmy of Lynchburg, Va., and Jared, a new employee of Norfolk Southern, located in Bluefield, W.Va. He is an avid Hokie fan, and enjoys golf, cooking, and travel.

NEW BOARD MEMBER — STEPHEN R. DeLOACH

Stephen R. DeLoach, PE, LS serves as the Deputy Chief, Engineering and Construction, Headquarters U.S. Army Corps of Engineers, Washington, D.C.

Steve shares the responsibility with the Chief, E&C, for policy, program, and technical expertise in the execution of the Corps' world-wide engineering, construction and environmental missions supporting the Nation's water resources and military construction programs.

Steve has also served as Chief of Engineering and Design for the Smithsonian Institution, principle of a mapping and remote sensing company, EarthData International, and as a research engineer with the Corps of Engineers. His past projects have led to the development of the kinematic method of GPS positioning and airborne LIDAR and digital mapping systems.

Steve earned his BSc. in Civil Engineering in 1978 from Virginia Tech and a Master's Degree in Geodesy and Geomatics Engineering from the University of New Brunswick, Fredericton, New Brunswick, Canada. He is a Fellow of the American Society of Civil Engineers and the American Congress on Surveying and Mapping.

Steve has also served his community as a member of the Town Council and a member of the Board of Directors, The ARC of Frederick, Maryland.

Steve and his wife Danelle, Virginia Tech class of '77 (CTRA), live in Myersville, Maryland. They have a son Michael (21) and daughter Kate (25).

DeLOACH

NEW BOARD MEMBER — JOHN R. HILLMAN

HILLMAN

John R. Hillman, PE, SE is a Senior Associate with Teng & Associates, Inc. in Chicago and is also Founder and President of HC Bridge Company, LLC.

John began his career on the construction of the Varina-Enon cable-stayed bridge in Richmond, Va. Following this assignment, he completed his Master's degree at Virginia Tech in 1990, were he worked on the development of innovative floor systems for steel framed buildings under the mentorship of Tom Murray and Sam Easterling.

John has been employed as a structural engineer in the inspection, construction and design of unique bridges for over 25 years. Some of the more notable assignments include managing the construction of a 1,263 ft., incrementally launched bridge in Puerto Rico in the early 90s and more recently his role as conceptual designer and project manager for the award winning 35th Street Pedestrian Bridge over Lake Shore Drive. John also holds three patents for the unique bridge technology known as the Hybrid-Composite Beam (HCB). His work on the development of the HCB has brought world wide recognition including; Top 25 Inventions for Modern Marvels – Invent Now Competition 2007, Top 10 Inventions of 2008 – *Popular Science* magazine. Most recently John was honored with the 2010 *Engineering News Record* Award of Excellence.

When John's not designing bridges, his hobbies include music and yoga. John and his wife Corey live in Wilmette, Ill., with their three daughters Elisa, Karina, and Nancy.

CEE *Alumni Board 2011*

NEW BOARD MEMBER — JON PORTER

Jon Porter is the Chief Scientist for the Federal Highway Administration's Office of Research, Development and Technology at the Turner-Fairbank Highway Research Center in McLean, Va.

He is responsible for the quality of research across the center's laboratories, long-range planning and investment in research capabilities, crosscutting research initiatives and developing collaboration opportunities. He also provides scientific and technical direction to the Exploratory Advanced Research Program that is focused on high-risk, high-payoff research.

Prior to joining the FHWA in 2009, Jon held several positions in the Department of Defense. In the Office of the Secretary of Defense, he provided oversight and guidance for science & technology laboratory management, policy and quality initiatives as well as basic research programs including the Multidisciplinary University Research Initiative (MURI). Previously, he managed the planning, programming, and budgeting for the Materials and Manufacturing Technology programs for the Deputy Assistant Secretary of the Air Force (Science, Technology & Engineering).

Before being assigned to the Pentagon, Jon was a research engineer with the Air Force Research Laboratory's Force Protection and Air Base Technology branches. He has conducted research on characterization and mitigation of weapon effects on structures, the application of novel materials for antiterrorism and force protection, rapid construction, evaluation and repair techniques for airfields, and the in situ and laboratory characterization of geotechnical materials.

Jon earned a B.S., M.S., and Ph.D. in civil engineering from Virginia Tech.

He and his wife Sarah, also a graduate of Virginia Tech, and their two children are avid Hokie fans.

PORTER

NEW BOARD MEMBER — LAURA MORILLO

Laura Morillo (BSCE '84) is a registered Professional Engineer in Virginia and Maryland. Laura also holds her CDT from the Construction Specifications Institute. She has served on the Board for MASFA (Mid-Atlantic Steel Framing Alliance).

Laura worked as a design engineering and project manager in Dallas and Virginia before transitioning to a role in the Federal Government as a civil engineer with the National Park Service, National Capital Parks Central Region. In this role, she served on such projects as structural upgrades to the Jefferson and Lincoln Memorials and the environmental study of the seawall surrounding the downtown National Parks.

Later, Laura took a position with Hilti, Inc. as a Field Engineer covering Virginia, Maryland and Washington, DC. She supported the design and construction community in the correct use/specification of products manufactured and sold by Hilti, Inc. She also served as a Technical Market Manager before transitioning to her current role, supporting the China Marketing Organization for the AP1000 Nuclear Power Plants being constructed in China. She is also involved with ASME and code interpretation/revisions related to commodity supports.

Laura lives in Fairfax, VA with her husband Luis, their two daughters, Sarah (14) and Anna (11) and their dog Raven. Laura enjoys spending time with her family, jogging, swimming and an occasional round of golf.

MORILLO

NEW BOARD MEMBER — STEPHEN SEAY

SEAY

Stephen Seay is currently the Vice President of Rinker Design Associates, P.C. (formerly Rinker-Detwiler & Associates, P.C.), an engineering, planning, land surveying and transportation services firm of nearly 100 employees with offices in Manassas, Fredericksburg and most recently Richmond. Stephen has spent his entire career with Rinker starting as a Survey Technician, progressing to Field Coordinator and then Director of Surveying and Platting and becoming Vice President in 2004. He currently is a major stockholder in the firm and is a member of the Board of Directors.

As a licensed Land Surveyor since 1990, Stephen has been responsible for hundreds of surveys including ALTA/ACSM Land Title Surveys, route surveys for roadway design/improvements, GPS surveys, topography surveys and construction stakeout surveys. His plat work has consisted of street dedication and easement plats, condominium plats and boundary plats to name just a few. In addition, Stephen's responsibilities include job procurement and overall quality control/quality assurance.

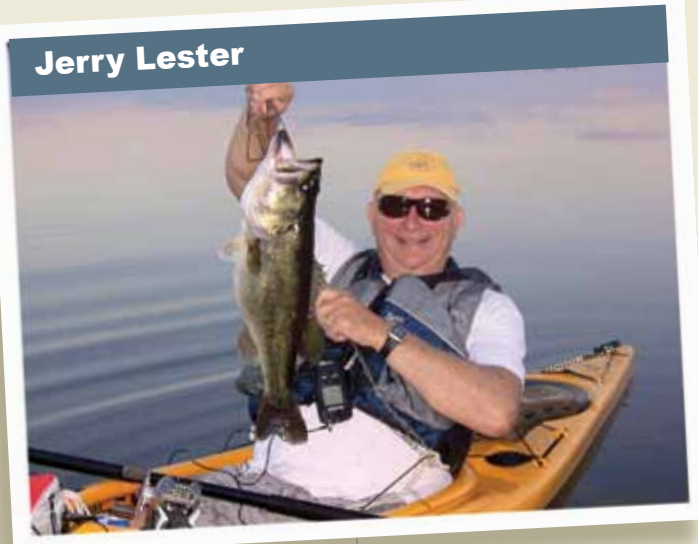
Stephen's interests outside of work included basketball, golf and slow-pitch softball. He is a graduate of Virginia Tech (BSCE, 1986) and is married to Annette Wilhelm Seay, also a Class of 1986 Hokie. They currently reside in Spotsylvania, Virginia with their two children Zachary (17) and Rebekah (13).

3RD ANNUAL
VT CEE HOMECOMING
OCTOBER 8, 2011

Come back to Blacksburg with your fellow CEE Alumni to watch the Hokies take on **Miami**! Save the date of **October 8, 2011** for the third annual CEE Homecoming. Activities will include an Open House at Patton Hall, student project displays, refreshments and more.

There is no cost to attend but if you plan to stop by, please RSVP to **Estela Moen** at **epmoen@vt.edu** or **(540) 231-0981** so we can be sure to have enough food and drinks for everyone!

CEE *Alumni Updates 2011*


Jerry Lester

1950s

Lester, Jerry C. – B.S. '59 – is retired from Newport News Shipbuilding and lives in The Villages, Fla. He is one of the founders of a Virginia Tech alumni chapter in The Villages (TVVT Alumni). He spends his time kayaking and fishing in local lakes.

1960s

Walz, Jr., Arthur H. – B.S.'63 – Received the 2010 Lifetime Achievement Award from the United States Society on Dams.

Kamber, Dennis – B.S. '64 - Named one of the Top 25 Newsmakers by *Engineering News Record* (ENR) magazine. Dennis is the senior vice president and director of water-resources practices for Arcadis-U.S. and was recognized for his work in the design and construction of a 350-mile-long surge risk-reduction system in New Orleans. He is a past Chair of the CEE Alumni Board, a member of the CEE Academy of Distinguished Alumni, and a member of the College of Engineering's Academy of Engineering Excellence.

Lorenzetti, Ralph A. – B.S. '69 - Appointed by the West Virginia Attorneys Association to the Board of Directors of the National District Attorney Association.

1970s

Ernest, Charles L. Jr. – B.S. '70 – Retired from Sutton-Kennerly & Associates in Greensboro, NC after 39 years of service. He was an investigative engineer in the building investigation & diagnostic department and a principal with the firm.

Cox, Jim – M.S. '74 – Named Biosolids Program Director at the Water Environment Federation (WEF). In this role, he will serve as project manager for the National Biosolids Partnership (NBP) and lead the implementation of new initiatives that will enable WEF and NBP to better serve the biosolids community.

Burwinkle, Kurt – B.S. '75 – Senior project manager with MACTEC and is responsible for the design group in their Kabul, Afghanistan office. He works with a group of architects and engineers comprised of 7 expats (Americans) and 22 local nationals (Afghanis). They are responsible for the design of facilities for the Afghanistan National Army and Policy including military compounds (kandaks), fire stations, courthouses, police stations, classrooms, roads and recruiting centers.


Kurt Burwinkle

1980s

Haugh, Jeffrey J. – B.S. '86 – Received his doctorate of ministry from Wesley Theological Seminary.

Kilpatrick, Charles A. – B.S. '86 – Named chief deputy commissioner of the Virginia Department of Transportation (VDOT).

Mottley, Ray A. – B.S. '89 – Retired from the U.S. Air Force after more than 20 years of service.

1990s

Peterson, Eric – B.S. '91, M.S. '93 – Promoted to Principal of WDP & Associates. His work has primarily involved forensic investigations of structural and architectural deficiencies in buildings and other structures, as well as building envelope evaluations and non-destructive testing.

Hume, William D. – B.S. '92 – Principal of his own firm, 2MH Consulting Engineers.

Thabet, Walid – Ph.D. '92 – Named the William E. Jamerson Professor of Building Construction by the Virginia Tech Board of Visitors.

Peters, Melinda - B.S. '95 – Named one of ENR Top 25 Newsmakers for 2011. As the Maryland State Highway Administration Project Director for the Inter County Connector (ICC) Project, Melinda was recognized for being the "human face of the largest, greenest and most controversial highway to be built in metropolitan Washington, D.C., in decades," according to *ENR*. Melinda is also one of the 2011 recipients of the CEE Department Outstanding Young Alumni Award.

Tyll, Karen Eckstein – B.S. '95 – Senior engineer for J.R. Holzmacher PE LLC.

Notte, Robert S. – B.S. '97 – Named associate vice president and branch manager for Dewberry in Charlotte, N.C.

Gomez, Jesus – M.S. '96, Ph.D. '00 – Named to the *CE News* Power List in 2011. The Power List is comprised of seven individuals who were honored for their work in advancing the civil engineering profession. Most recently elected as a board member of ADSC, The International Association of Foundation Drilling, Jesus is also a principal with Schnabel Engineering.

2000s

Stroud, Michael – B.S. '00 – Michael and his wife welcomed twin daughters Audrey and Cara in March 2010. He also obtained his PE license in June 2010.

Homer, Francis – M.S. '06 – Named one of *Building Design + Construction*'s "40 Under 40" for his accomplishments in the construction industry. He has been a Project Manager with Whiting-Turner for the past four years working on a multitude of projects ranging from a $12 million Catholic Church project in Leesburg, Virginia to a $42 million award winning Performing Arts Center on the campus of George Mason University. He is active in Engineers Without Borders (EWB) serving as a

Continued on next page

CEE *Alumni Updates 2011*

Professional Mentor for the George Washington University student chapter and helping the EWB-DC Chapter on the design and implementation of a piped water distribution system for a rural community in El Salvador. The work has provided potable water to more than 400 homes in Santa Clara while providing the citizens with the knowledge to operate and maintain the system for many years into the future. He recently obtained my LEED certification and PE license.

Strock, Chris – M.S. '06, Ph.D. '10 – Working for Bechtel in Gabon, West Africa. He works with the Gabonese government on national infrastructure planning.

WE WOULD LIKE TO HEAR FROM YOU!

Please send your updates and announcements such as marriage, births, career accomplishments, retirement, awards and recognitions, by email to Estela Moen at **epmoen@vt.edu** or by mail to the address below:

Estela P. Moen
Via Department of Civil
and Environmental Engineering
Virginia Tech
200 Patton Hall
Blacksburg, VA 24061

Please be sure to include the following information: name (and maiden name, if applicable), address, phone number, and email address.

Mailing or email address updates should be sent to **alumnidata@vt.edu**

Four former Hokies reunite at Utah State University

With over 9,000 living alumni, it is not uncommon for co-workers at a design or construction firm to share their educational "roots" in the VTCEE department. However, one would think that the further from the state of Virginia, the less the likelihood of meeting or working with VTCEE alumni.

But in Logan, Utah, four colleagues may find themselves yelling "Go Hokies!" instead of "Go Aggies!" Assistant Professor Kevin Heaslip (B.S. '02, M.S. '03,), Associate Dean and Professor Jagath Kaluarachchi (Ph.D. '88), Associate Professor Laurie McNeill (Ph.D. '00), and Assistant Professor John Rice (Ph.D. '07) are all faculty members at Utah State University.

They each have a different emphasis (transportation, water resources, environmental, and geotechnical, respectively). The group has amassed multiple honors including awards in research, teaching and advising. Most recently, Lurie McNeill received the Virginia Tech College of Engineering's Outstanding Young Alumna Award for 2011.

Despite the distance, all four faculty members say that they try to keep up with Virginia Tech news and events as much as possible. When asked what they missed most about the university and Blacksburg, Laurie responded, "USU is in a desert, and I miss all the lushness of Blacksburg and how easy it is to grow things. I [also] really appreciated the scale of engineering at Tech. Our department and college at USU are quite a bit smaller than Tech, and that's nice in some ways because it's easier to get to know everyone. But at Tech there were so many diverse people doing so many different things, and I miss that."

Utah State University CEE faculty include four CEE Hokies: (from left to right) Kevin Heaslip, Laurie McNeill, Jagath Kaluarachchi, and John Rice.

While her colleagues echoed much of these sentiments, Jagath Kaluarachchi had to add that he missed "Hokie House … for good beer and munchies!"

Alumni provide leadership for 9/11 memorial project

John Riley, PE (BSCE '97, MSCE '99) is working alongside fellow Hokie Bruce Perretz, AIA (BA Architecture, '78) as part of the leadership for the Freedom Flag Foundation, an organization dedicated to helping make sure that present and future generations in Virginia never forget September 11, 2001.

September 11, 2011 marks the 10th anniversary of the deadliest attack on American soil. Riley notes, "Many of us were instantly taken back to memories of 9/11 when the recent announcement was made about the killing of Osama Bin Laden by U.S. Navy Seals. The thought that it had taken the best resources of the world's military superpower nearly 10 years to find bin Laden seemed stunning in an Internet era that allows us to find the most remote bits of knowledge in fractions of a second." He goes on to say, "In the weeks and months after 9/11, Americans across the country pledged to all of the victims, to their families, and to each other that We Will Never Forget. But how do we adequately reflect on the incredible magnitude of events from that day? And how do we appropriately educate future generations of Americans of the meaning of what happened that day?"

Enter the Freedom Flag. Shortly after the 9/11 attacks, Richmond restaurateur Richard Melito sat in his establishment and wondered these same questions. As he wrestled with his emotions, he drew up the Freedom Flag, a symbol commemorating the events. His intention was to create a symbol for display on the wall within his restaurant that would always remind his patrons of the tragedy and triumph of September 11, 2001.

John Riley (BSCE '97, MSCE '99) with the approved Plan of Development for and a model of the Freedom Flag Monument.

Sixteen months later, the Freedom Flag was designated as Virginia's official symbol of remembrance honoring the victims and heroes of 9/11 by then Governor Mark Warner. Since that time, raising the Freedom Flag has become part of the traditional Patriot Day observation in schools throughout the Commonwealth.

The non-profit organization Freedom Flag Foundation was formed in the months that followed to implement the Flags for the Nation Project, which calls for all schools in America to formalize an annual tradition of raising and flying the Freedom Flag below the American Flag on September 11th. The Project aims to create a unique reminder to future generations of the victims, heroes, and survivors of that day.

The Freedom Flag Foundation has an active Board of Directors including CEE Alumnus and former Via Scholar John Riley and fellow Hokie Bruce Perretz, who are serving as Treasurer and President (respectively) of the Freedom Flag Foundation.

Both Riley and Perretz have strong reasons for getting involved with the Foundation. Riley explains, "9/11 had a deeply personal impact on me when I lost one of my best friends, Doug Ketcham, who worked at Cantor Fitzgerald in Tower 1 of the WTC. That day changed all of us – but time seems to move faster and faster, and the pace we live in during this information age has challenged us to slow down and deliberately reflect on what is really important in life."

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Bruce Perretz (BAARCH '78), Project Architect, with the Freedom Flag and a rendering of the monument.

Perretz adds, "September 11, 2001 ironically, gave this country its patriotism back. I, personally, feel a deeper appreciation for the Armed Services and The American Flag. Patriotism has given me a sense of pride for what we stand for as a nation. Both of my sons were in high school at the time of the attacks and were so moved that they felt the duty to fight for freedom, and have since served in the U.S. Army and are currently still serving their country. We, as a family, will never forget! I am very proud to be a part of The Freedom Flag Foundation and strongly believe in its mission."

To commemorate the 10th anniversary of 9/11, the Foundation is currently in the process of a $2 million fundraising campaign to construct and maintain the Freedom Flag Monument and Virginia 9/11 Memorial. The memorial will be located on a public site in Henrico County, Virginia, where the design for the Freedom Flag originated.

In November 2010, Henrico County's Board of Supervisors provided unanimous approval for the monument, conditional on the completion of raising the necessary funds. To do this, the Foundation is holding a brick campaign that will allow for the placement of 2,976 bricks – one for each victim of 9/11 – in the plaza around the monument.

At the same time, to drive momentum for the Flags for the Nation Project, the Foundation is working on developing grade appropriate lesson plans that will promote a more thorough understanding among our young citizens of the rights, responsibilities, duties and sacrifices required to maintain a free society.

Riley said, "I have four young children, all of whom were born after 9/11, and I cannot think of a better symbol than the Freedom Flag to teach them about the events of that day. The Foundation's efforts to construct a monument in Henrico County to serve as a permanent reminder of the victims and heroes of 9/11 and promote the use of the Freedom Flag to educate future generations stirred up in me what I can only describe as a 'life calling.' It only made sense to apply my time, energies, and consulting engineering expertise to help further the Foundation's cause and see that this monument is constructed."

In the spirit of *Ut Prosim*, John and Bruce are both proud and willing to contribute their time and energies to ensure that current and future generations never forget 9/11/01. To learn more about the Freedom Flag Foundation and its mission, visit www.freeedomflagfoundation.org.

Love among the rocks and sludge

While there is no hard reliable data, it has been quoted that roughly 10-15% of married couples were high school or college sweethearts. This may seem like a small percentage but the CEE department has seen its share of lovebirds go the distance. One example is Randy and Jen Boe (both B.S. '91 and M.S. '93). In Jen's own words:

"It all started in Geology class, and the rest, as it is said, is history! Randy Boe and Jennifer Barber were sophomores in Civil Engineering when they met in the fall of 1988. Randy, from Herndon, Virginia, was honored to be among the first group of undergraduate Via Scholars. After graduation in spring of 1991, they were married in Jennifer's hometown of Naples, Florida, that August. Both came back to Virginia Tech in the fall as graduate students in the Environmental Engineering Department (Randy continuing as a Via Scholar). They were paired as graduate teaching assistants in the environmental lab in Norris Hall, and graduated with Master's degrees in 1993. First jobs were found in Charlotte, North Carolina, where Randy and Jennifer spent 6 years. Jennifer joined other Virginia Tech CEE graduates at Black & Veatch, where she worked on many water and wastewater treatment plant and conveyance projects. Fast forward to 2011, which finds the Boe Family (now with Collin, 12, and Ryan, 9) living in 'the swamp' – Gainesville, Florida. Randy recently logged 15 years service with CH2M Hill and is currently the wastewater treatment technology leader for the firm's Eastern Region. Jennifer splits volunteer time between church and school, where she gets many opportunities to bring engineering education into the classroom."

The Boes on a recent visit to Randy's family in Virginia (view of Shenandoah National Park in background). L to R: Randy, Collin, Jennifer, Ryan.

Capt. Craig Mills

CEE alumnus Mills named Hokie Hero

By Maj. Carrie Cox

CEE and Virginia Tech Corps of Cadets alumnus Capt. Craig Mills, U.S. Air Force, who earned a degree in civil engineering and a minor in leadership studies from the Virginia Tech Corps of Cadets Rice Center for Leader Development in 2002, was selected as the Hokie Hero for the ACC (Atlantic Coast Conference) Championship game.

The corps Hokie Hero program, started in 2006 by ISP Sports and sponsored by the University Bookstore, honors Virginia Tech Corps of Cadets alumni who are currently deployed.

Recipients of this honor are highlighted by Bill Roth and Mike Burnop during the radio broadcast of Virginia Tech football games, on the corps website, on the corps alumni website and in the *Corps Review* magazine.

Mills is currently stationed at Bagram Airfield, Afghanistan, as a member of the 577th Base Emergency Engineer Group and is serving as a group project officer supporting the Army, Navy, and Marine Corps with construction and engineering expertise throughout Afghanistan.

He is originally from Johnstown, Pa., but currently lives in Melbourne, Fla., while stationed at Patrick Air Force Base. This is his second combat deployment.

Mills is a proud alumnus of the Virginia Tech Corps of Cadets Golf Company. His father Dave Mills is also an alumnus of the corps from the Class of 1971 and earned a degree in industrial engineering from the College of Engineering.

Mills says he would like to thank his friends and family for their support throughout his military career and deployment. Most importantly, he sends his love to his wife Stephanie and his son Logan. His wife is also a captain in the U.S. Air Force and Mills says her love and support are what make his service possible.

CEE *Senior Perspective 2011*

Dear CEE Alumni,

Seven years ago I could not have guessed where my academic career at Virginia Tech would take me. And finally, I'm receiving my degree!

This wild ride began "so long ago" arriving here at Virginia Tech as a freshman, floundering as I sought purpose, adventure, and direction. Academic challenges, responsibility as a Resident Advisor, and extracurricular activities playing intramural sports and enjoying the Appalachian Mountains, all helped shape my thinking as I began to ask myself and those around me tougher questions. "What am I really doing here?" "What is my purpose?" "How can my time studying at Virginia Tech help me live the life that I want to lead?" "What kind of life do I want to lead?"

Those questions became the real theme of my journey, one that was both internal and external. As I led a small group with InterVarsity Christian Fellowship my sophomore year, I challenged those around me about how much we wanted to live to serve ourselves or to live a life of love as we serve those around us.

The motto of Virginia Tech, *Ut Prosim*, was a lifestyle that challenged me, and I began to seek to internalize it in such a way that it would define my life in a more radical way.

Over the next few years, opportunities arose to serve villagers in the Amazon Jungle of Peru for over a year as well as learn from non-profits working in slums around South and Central America.

A year later as I worked in Houston as a summer intern, I had the opportunity to live among and serve the homeless, drug addicts, and mentally ill under bridges in Houston. With growing excitement I have jumped into these situations and found more and more joy.

Virginia Tech has offered me a community that is both encouraging and challenging. There is an increasing restlessness among many young people for purpose and meaning. This growing trend is ultimately driving so many of my friends and peers towards our university motto, *Ut Prosim*.

Two days after I graduate, I will be flying to Zambia in south central Africa for at least four months to teach and dig water wells. I could not be more excited. My time at Virginia Tech has equipped me with the technical means to serve, but it has done so much more. The community at Virginia Tech challenges each and every Hokie to become an ambassador to the world.

With the academic know-how and community-fostered love that this campus ingrains in students, our university equips many ambassadors to leave and make an impact.

Leo Tolstoy said, "Everyone wants to change the world, no one wants to change himself." Those who pass through Virginia Tech are changed. In turn, we have the growing joy, excitement, and passion that can change the world.

May we all continue to change, to learn, and to grow,

Bryan Carey

Virginia Tech CEE, Class of 2011

Bryan Carey is the 2011 Outstanding Senior in the Via Department of Civil and Environmental Engineering. Continuing his passion for service abroad, Bryan is spending his summer in Africa where he will serve rural villagers in Western Zambia for four months. Upon his return, he will move to Brazil where he has accepted a job with Global Geophysical.

ASCE

A proactive year filled with noteworthy accomplishments

The Virginia Tech Chapter of the American Society of Civil Engineers (ASCE) has been very proactive throughout the 2010-2011 academic year.

The ASCE professional meetings functioned to highlight noteworthy engineering topics and often featured a guest speaker from a major civil engineering or construction company.

This year saw an increase in meeting attendance, a trend that ASCE hopes to continue in the coming year.

On a more active standpoint, ASCE hosted a tailgate in the fall with the CEE department, and participated in several others, including a College of Engineering Alumni Tailgate, and the annual CEED picnic hosted by the department of engineering education.

ASCE also continued the newly established tradition of visiting the New River Gorge Bridge, near Fayetteville, West Virginia, traversing the 3000 foot span with exclusive access to the maintenance catwalk below the bridge deck.

Taking advantage of Virginia Tech's rapid growth, the club toured construction sites around campus with the help of Professor Vickie Mouras.

ASCE ended the year with a social at Awful Arthur's in downtown Blacksburg.

In addition, ASCE still maintains student representation in the Student Engineers' Council, participating in this year's E-Week festivities, and assisted the CEE department during the Engineering Open House.

The chapter also continued its community outreach efforts, sponsoring the annual Concrete for Kids event, in which students from Virginia Tech visit local grade schools and provide a hands-on workshop for children on the basic fundamentals of concrete.

Organizationally, the chapter made tremendous strides in increasing their membership, with emphasis on sophomore and junior level undergraduates. A revamped student outreach program, including collaboration with professors of entry level courses and a new display board, drew attention to club activities, increasing meeting attendance, and simplifying the procedure of establishing competitive teams for the Virginias' Conference.

The Concrete Canoe teams poses for a picture with their canoe, the Event Horizon, at the 2011 Virginia's Conference at West Virginia University.

Steel Bridge team constructing their bridge during the Virginias Conference in April

In mid-April, ASCE sent 30 students to Morgantown, West Virginia for the 2011 Virginia's Conference, hosted by West Virginia University, participating in nearly every event.

Mallory Barkdull placed first for the Robert Marr Technical Paper Composition and the Hardy Cross Technical Paper Presentation, allowing Virginia Tech to bring home the Hardy Cross Cup for the second year running.

Joining her in the top ranks were the Concrete Bowling and Mini-Golf Hole Building and Construction teams.

As always, the Concrete Canoe and Steel Bridge teams did well at the conference, with the Concrete Canoe team winning second place for their report and their technical presentation, while Steel Bridge won second place overall, and first place in structural stiffness.

With a second place finish, the Virginia Tech Steel Bridge Team has again secured a bid to the national steel bridge competition, held this year at Texas A&M University.

ASCE will be hosting the 2012 Virginia's Conference at Virginia Tech. In preparation for the event, the club has established a planning committee, comprised of students and faculty, with goals of hosting the most memorable conference in recent years.

The conference will be held from March 29 to March 31, 2012. Nearly 400 attendees are expected, with representatives from 14 different universities in the region.

Hosting the conference is both a great honor and a great challenge that the chapter embraces. However, the chapter realizes that such a feat cannot be achieved without the help of Hokies around the world, both financially and logistically. ASCE is currently looking for sponsors and judges for the events held during the conference, and hopes that CEE alumni will continue to provide their support as they have in the past.

The past year has been full of enriching opportunities, trips, and a fair dose of Hokie pride.

ASCE is looking at the coming academic year as a defining moment for the chapter, and invite CEE alumni to join in the challenge.

ATES

Reaching out to the student and business communities

Virginia Tech Alliance of Transportation Engineering Students (ATES) reaches out to the business community with the main intention of developing VT's future transportation professionals by bridging the gaps between academia and industry. The major goal of the alliance is to promote the broadcasting of knowledge and information related to transportation infrastructure and systems issues, problems and solutions. The chapter stayed active throughout the year with a number of educational and networking opportunities.

Last summer, to facilitate the formation of friendships within the group, the ATES officers organized a tubing trip down Virginia's New River. Once the academic year began in the fall, the chapter held the annual ATES barbeque to welcome students back to campus. There was a great turnout which included around thirty students, several professors, and a few members of the Transportation support staff.

On October 1, ATES was part of one of the biggest events for the Graduate School at Virginia Tech: "Graduate Recruitment Day". The event includes lab tours, meetings with faculty and students, and professional development discussions to guide potential students through their choices for graduate school. ATES had the opportunity to represent the transportation engineering field and hopefully attract new students to participate in the program.

Students serving themselves at the ATES end-of-the-semester potluck.

The annual Virginia Section ITE meeting was held at the Wintergreen Resort in central Virginia on October 7-8. After spending the day attending presentations, Miloš Mladenoviç, Ismail Zohdy, and John Sangster competed against UVA in the Traffic Bowl. Although UVA lead throughout most of the competition, VT won in the end by 100 points. This victory was the return of the tradition and title to VT!

Barrier Systems, Inc. was very involved with the chapter this year in two major ways: sponsoring a paper competition and guest lecturing this fall. This year was the first for the ATES paper competition. The goal was to get students engaged and connected with the corporate sponsor, Barrier Systems, Inc., who provided the topic and suggested guidelines for the competition. The students then conducted research to determine the presence of convertible lanes around the world that do not have some sort of positive protection. Submissions were permitted to be individual or team efforts. As a part of our department's fall seminar series, ATES organized to have a speaker talk to the students about the innovative techniques that Barrier Systems has created in order to increase highway safety. The visit included a tour of the Virginia Tech Transportation Institute (VTTI), lunch at a local restaurant, and a tour of campus to see the gorgeous architecture of Virginia Tech.

(Left to right) C. Patrick Sankey (President & CEO, International Road Federation), Martha Gross, Mohammed Saied Dehghanisanij, Ismail Zohdy, Kelly Donoughe, Michael Dreznes (Chairman, IREF and VP-Sales & Marketing for Barrier Systems, Inc.).

This January, ATES gathered a group of 32 students to attend the 90th Annual Transportation Research Board (TRB) Meeting in Washington, D.C. This event was a great way to showcase our research achievements and to network with transportation professionals around the world. Our students presented their research in many poster sessions and podium sessions in addition to attending committee meetings and workshops. The chapter also made their presence known in the paper competition held by the International Road Federation. Out of five categories, Virginia Tech students claimed four of the awards at the Federation's annual awards luncheon at the TRB Annual meeting.

Finally, the chapter held an end-of-the-semester potluck in Patton Hall a few nights before final exams that included international dishes representing home countries for ATES students!

It was another great year of networking, education, and fun for ATES.

CMAA

Providing valuable networking opportunities and information

The CMAA Student Chapter at Virginia Tech has completed its fifth successful year. The officers continue to provide students interested in Construction Management as a profession with a sense of the roles and responsibilities of a Construction Manager. Visit us online at **http://www.cmaa.org.vt.edu**.

National Conference & Trade Show

In fall 2010 the Virginia Tech CMAA student chapter was privileged to send three representatives to the National Conference in San Diego, Calif. President, C. Jacob Brown, and Members at Large, Sara Lehman and Todd Power, had the opportunity to network with top executives of companies across the nation. The weekend was filled with activities including the Trade Show, where the latest construction technologies were demonstrated. Companies offered information on the newest innovations from computer programs to wall insulation systems. The numerous educational sessions offered unique insight into the working world of construction management, and provided opportunities to meet with individuals from different areas. The trip was not only educational but opened amazing opportunities for networking in the world of construction management and growth of the Virginia Tech CMAA student chapter.

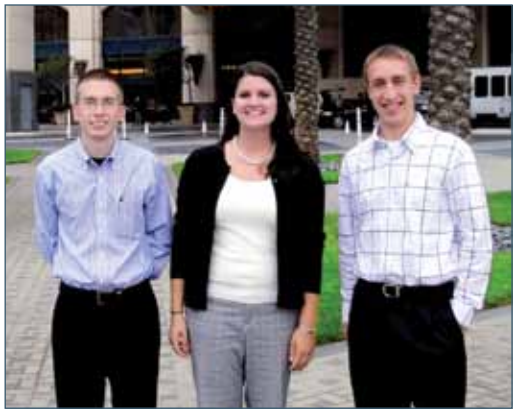
ICTAS II Field Trip

On September 22, 2010 three CMAA officers and eight Virginia Tech students went on a tour of the ICTAS II building (Institute for Critical Technology and Applied Science — Phase II). This building is a three-story 42,000 SF research facility. The General Contractor on the project is Skanska USA Building, Inc. and Jason Kovac, a project manager, gave the tour. This field trip was a follow up to a previous trip that was taken in 2009 when construction of the building was just beginning. This building will include state-of-the-art research facilities with highly specialized research laboratories, which will support multi-disciplinary research areas including bio-nanotechnology, bio-materials, communications technology and sensor technology.

Advisor Dr. de la Garza and 2010-2011 VT CMAA Student Officers.

Peri Concrete Comes to Virginia Tech

In early November of Fall 2010, our chapter had the privilege of hosting individuals from Peri Concrete Formwork, the world's largest engineered concrete formwork company. Peri and our chapter organized an information session open to all Virginia Tech students and faculty. At this session, Peri discussed what its role in a construction project is, some of the state of the art formwork systems they provide, as well as shared information about real world projects. Overall, the students who attended were able to learn about and interact with a company that provides a vital service for any construction project.



CMAA Student Officers attending the National Conference & Trade Show

Industry Day

For the third year in a row, Industry Day was held on the Virginia Tech Drillfield on April 6, 2011. This is an event sponsored by the Myers Lawson School of Construction Young Alumni Committee. The exhibition offered a comprehensive overview of the construction industry. Students had the opportunity to learn about the management, skill, innovation and education it takes to obtain a career in this field. This was a great opportunity for our chapter officers and student members to network and meet alumni and other professionals from the construction industry.

CMAA Owner's Forum

This spring the CMAA Owner's forum was held in San Antonio, Texas from May 15-17. The three main topics discussed at the forum were building strategies, water and wastewater and transportation. Owners lead the discussions and provided their analysis and expertise of the future's challenges through educational sessions as well as offline networking breaks. This annual forum provides our officers with excellent networking opportunities and allows them to bring back valuable information to our members.

Rising CM Conference

Throughout the spring semester the chapter was busy with planning and organizing the Rising CM Conference. This will be the first ever student run conference for CMAA student chapters around the country. This event will be held in Washington, D.C. on November 5th and 6th, 2011 and will include various construction topics such as CCM and CMIT as well as case studies presented by student chapters. This conference will occur before the fall CMAA National Conference & Trade Show. The chapter is looking forward to making this event a success and seeing it continue in years to come.

GSO

Conference attendance, field trips, tours highlight year

The Virginia Tech Geotechnical Students' Organization (GSO) had a remarkable year. The student group was started just two and a half years ago, and its mostly graduate student membership now numbers more than 70 students.

The GSO serves as Virginia Tech's ambassador to the Geo-Institute of the American Society of Civil Engineers (ASCE).

In the fall semester, the GSO organized several field trips. The first was a visit to a deep soil mixing project for the new performing arts space near Shultz dining hall on campus.

Philip Wunderly (CEE MS, 2005) of the U.S. Army Corps of Engineers, hosted an excursion to Gathright Dam near Convington, Virginia.

The chapter also visited Kimballton Mine, a limestone mine in Giles County to observe lime and cement production and tour the mine.

Generous contributions made by Emeritus Professors James K. Mitchell and J. Michael Duncan, as well as Professor George Filz helped to fund a trip for students to attend ASCE Geo-Institute's annual conference.

This year's event, Geo-Fronters 2011, was held in March in Dallas, Texas. Aided by the faculty's generosity, GSO students spearheaded a fund-raising effort and raised all of the funds necessary to send 28 students to the conference.

Highlights of Virginia Tech student participation included: Laura Kosoglu, Joel Sloan, and Mike McGuire giving technical presentations, Kate Gunberg and Manisha Rai competing in the Student Poster Competition, and James Brickman placing in the top five finishers of the "Geo-Predictions" competition.

Geotechnical students, faculty, and their families at the annual holiday party at the home of Professor George Filz.

The Center for Geotechnical Practice and Research, Virginia Tech's cooperative between practitioners and researchers in geotechnical engineering, and the Organizational Members of the Geo-Institute of ASCE helped to make this possible.

The sense of community among GSO members and faculty is one of the truly remarkable aspects of the GSO. The annual "Icebreaker" dinner party was held in the Fall semester at the home of Emeritus Professor J. Michael Duncan and his wife, Ann.

Professor George Filz and his wife Lindy graciously opened their home for the holiday party in December.

Michael McGuire and his wife Tish have hosted campouts twice this year on Pilot Mountain.

GSO students have also enjoyed hikes, football games, and ski trips outside of the classroom this year.

As part of the geotechnical group's Open House weekend in February, Russell Green and his wife Christine invited all of the students, faculty, and prospective future members of the GSO to their home. The dinner was part of the major recruitment effort held each year that is planned and run largely by the GSO.

Open House events this year also included a campus tour, dinner at the Farmhouse Restaurant in Christiansburg, lab and campus tours, and a student life presentation.

This year's visiting group was the largest ever at 30 students with a great variety of university and industry experience.

In the midst of final projects and looming exams, the GSO organized an outreach trip to Eastern Montgomery High School, where local high school students learned about the profession of civil engineering and participated in a mechanically-stabilized earth (MSE) wall competition.

The GSO makes trips to local school at least once per semester to give hands-on demonstrations and they enjoy the chance to act as mentors.

The GSO thanks the loyal Virginia Tech alumni who provide the GSO with ideas and financial support. Thanks for helping make the GSO's great experiences possible this year.

To learn more about the GSO's activities, or to offer a suggestion for a geotechnical field trip or other opportunity, please contact our president, Kevin Foster, at kmfoster@vt.edu or follow the VT-GSO on Facebook.

NASTT

Trenchless technology better manages underground infrastructure

The Virginia Tech student chapter of North American Society for Trenchless Technologies (NASTT) has been actively organizing lectures, field trips, and live demonstrations to introduce trenchless technologies and their important applications in the underground infrastructure industry.

In Fall 2010, the Virginia Tech NASTT student chapter worked closely with the Town of Blacksburg and Ultraliner to organize a site visit to a live sewer relining project near South Main Street in Blacksburg.

Students were given the chance to see how trenchless technologies are applied for infrastructure rehabilitation and were able to better understand the benefits realized by adopting trenchless technologies.

To help students understand and visualize the working mechanisms and application of Closed-Circuit Television (CCTV) in sewer pipe inspections, the NASTT team brought the CCTV trailer to the construction site of the South Main project for a live demonstration.

Students were able to operate the equipment and see how it works first hand for pipeline condition assessment.

In February 2011, NASTT participated in the Kids' Tech University event in Lane Stadium as part of our outreach program.

NASTT officers showed videos of trenchless technology uses, displayed samples of trenchless pipeline renewal technologies, and brought the CCTV equipment for live demonstrations.

Visitors were allowed to control the camera head of the CCTV robot, and watch the video feed on the TV monitor.

Kids and their parents were very intrigued with the organization and the demonstrations alike.

The NASTT student chapter also participated and won third place in the Graduate School's "Grad Olympics" as part of the initiative to expand student awareness of the organization and the application and benefits of trenchless technologies.

VT NASTT President Kristi Steiner shows kids how to operate the CCTV equipment during the Kid's Tech University Program in Virginia Tech's Lane Stadium.

Finally, in the "No-Dig" show in Washington, D.C., in 2011, the Virginia Tech NASTT chapter won first prize for the student chapter presentation.

Our chapter members, Nisha Thuruthy and Shaoqing Ge won second place in the CCTV competition; Kristi Steiner and Alison St. Clair were awarded the NASTT Michael E. Argent Memorial Scholarship; Nisha Thuruthy was awarded the Rain for Rent Scholarship; and Dr. Jai Jung won second place in poster competition.

Other attending members also participated in the poster competition, CCTV competition, paper submission and industry exhibitions.

Research work from Virginia Tech was well represented, and students were provided an excellent opportunity to network with experts from the trenchless industry and academia.

The Virginia Tech NASTT Chapter won first place in student chapter presentation at the "No-Dig" show in Washington, DC

SLDC

Sustainable land development club celebrates year of growth

For the Sustainable Land Development Club (SLDC), the 2010-11 academic year was the busiest in its three year history. With the aid of faculty advisors Randy Dymond and Kevin Young, and working closely with the Land Development Design Initiative (LDDI), the club continues to bring together students with a common interest in sustainability as it relates to land development design. Graduating senior Stephen Litsas served as club president this year, and did a tremendous job of organizing various events focused on enriching the academic development of club members. Senior Nathan Bales served as the club's vice president, while senior and former SLDC president Mallory Barkdull acted as the club's treasurer.

During the fall semester, the club completed its first service project. Working closely with engineers from Draper Aden Associates, club members prepared a feasibility study for proposed renovations to the Mill Mountain Zoo in Roanoke. Following multiple site visits, the club compiled a summary report which included information on the site's topography, soils, environmental features, and regulations that would impact the proposed site improvements. The engineers from Draper Aden Associates with whom the club worked were very complimentary of their efforts, and in December several members of the club were invited to give a presentation to members of the zoo's Advisory Committee. The service project provided an opportunity for club members to work in the new Land Development Design Lab in Patton Hall. The lab was funded through the generous donations of Mr. Julian B. Bell, Jr. (CEE '62).

Club members gather in northern Virginia for the annual SLDC field trip.

Following the success of the club's inaugural service project, during the spring semester the club actively sought other similar opportunities. In early April, Kevin and a group of six students met with representatives from Camp Alta Mons in Shawsville. During the site visit, the camp's Program Services Director offered several opportunities for the club to put their site design skills to use on the 840 acre facility operated by the Roanoke Methodist Church. Rising senior Kelley O'Such is taking the lead on these service project opportunities, and the students will begin working with the camp when they return to campus this fall.

In March, Randy led a group of SLDC members on a field trip to various site development projects in northern Virginia. The trip marked the second consecutive year that LDDI has facilitated an out-of-town field trip, having last spring arranged for students to visit sites in and around Richmond. The site visits, hosted by representatives from J2 Engineers, Inc. and Bowman Consulting, encompassed a variety of project types in various stages of construction. These types of field trips are intended to help young engineers bridge this gap between land development design and the "built product." LDDI covered all of the students' travel, lodging, and meals expenses while on the trip.

Along with the educational endeavors in which the students participated, the club also held a number of social events. In the fall and spring semesters, the SLDC coordinated with LDDI to host "career nights" on the eve of the CEE Career Fairs. These events provide an opportunity for students to meet and mingle with industry professionals in a relaxed environment prior to the potentially stressful setting of the Career Fair. On April 1st, the club assembled for a social with the LDDI Advisory Board. Outgoing club president, Stephen Litsas stated, "The SLDC has seen tremendous growth this year. All of the students in the club are really excited about the opportunities they have been given through the club, where they can apply their classroom knowledge to real world experiences. Another benefit to students is the networking opportunities provided through the club's relationship with LDDI."

Alumni who are interested in finding out more about the club are encouraged to contact Kevin Young at keyoung@vt.edu.

Congratulations to the Top 25 Graduates for the 2010-2011 Academic Year

Congratulations to the following students who finished in the Top 25 of all CEE graduates (215 students) completing their undergraduate degree requirements between Summer I 2010 and Spring 2011:

Mallory Barkdull, Bryan Carey*, Gregory Cole, Jacquelyn Dalrymple, Christopher Dowling, William Duncanson, Michael Emili, Sabina Fedrowitz, Jonathan Grace, Tyler Harrington, George Herceg, Stephen Litsas, Margret Mascaro, Nicholas Mason, Francis Pesce, Nash Pleasant, Kyle Polk, Stephen Rogers, Sara Sanders, Andrew Sottile-Jackson, Justin St. Clair, James Taylor, Ashley Thompson, Katherine Travers,** and **Paul Zheng.**

** *Valedictorian, *Salutatorian*

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Looking for some new Virginia Tech apparel? Check out the newest polo shirts, button-down shirts and baseball caps embroidered with the "VT" logo and the department name. Polo shirts and baseball caps are available in both maroon and black, and button-down shirts are available in khaki only. Shipping and handling are *included* in all costs. *Complete the form below* or call (540) 231-6635 to place your order.

Modeled by Claire McKenzie White (CEE '10), Kyle Lawson (BS '09, MS '10), and Paul Zheng (BS '10)

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		Men's Or Women's							
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Polo & Khaki Shirts @ $26 each									
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If you need further information, please call Donna Sanzenbach or Val Dymond at (540) 231-6635.

Checks should be made payable to *"Virginia Tech Foundation, Inc."* and mailed along with this form to the following address:

Donna Sanzenbach
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