Focus on Forensics

Volume 13, Issue 1  Fall 2015

Forensic Science Alumni & Friends Reception
Saturday, October 10 at 5:30-7:00pm

In case you weren’t able to make it to the Forensic Science Alumni Reception last fall, you missed more than 60 alumni and friends who joined in celebrating the 30th anniversary of the Forensic Science master’s program and 10th anniversary of the department. Interim department chair Michelle Peace (Ph.D.’05/M) welcomed alumni and friends and shared exciting updates on the growth of the department, including three newly renovated lab spaces dedicated to Forensic Science research, plans for a new 4,000-square-foot instrument laboratory and the establishment of a new matching gift scholarship fund for the purpose of supporting students and their professional growth and development.

This year, the Instrumentation Facility is completed and we are expanding again, (see page 4 for more information). We want our friends and alumni to re-connect with the Department, see what we are doing and let us know how we can celebrate you! Welcoming remarks begin at 6pm for you to learn about the Department’s growth and successes. You will also have a chance to tour our new research labs, see our Crime Scene room and meet our new faculty members.

In addition, we will celebrate the new scholarship fund that will eventually support every graduate student to attend a national conference with all expenses paid! Right now, contributions will be matched dollar-for-dollar by a friend of the Department. We hope that this year, we will be able to send one student to a conference with your contributions.

The celebration will be on Saturday, October 10 from 5:30-7:00pm in Room 3013 of Oliver Hall, 1001 West Main Street—“The Bridge” over Main Street. Business casual dress is preferred and refreshments will be provided. To help with planning, please RSVP by Oct. 7 to 804-827-0862, cshanbury@vcu.edu or online. If you are unable to attend the reception but would like to contribute to the new scholarship, contact us for more information OR go to Student Professional Development and Travel Fund.

Inside this issue:

Catherine Connon
Tracey Dawson Cruz
Lyndsay Durham
Chris Ehrhardt
Eric Hazelrigg
Marilyn Miller
Michelle Peace
Tal Simmons
Baneshwar Singh
Sarah Seasholes Williams
Bonnie Brown
Sylvia Buffington-Lester
Ann Davis
Susan Greenspoon
Josh Kruger
Linda Jackson
Al Poklis
Robert Steiner
Kevin Whaley
Carl Wolf

Raito

Before

After

Department website Facebook Twitter Blog FSSC Advising
# Department of Forensic Science Diploma Ceremony May, 2015

## Undergraduate Students

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<tr>
<th>Graduate Students</th>
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<tr>
<td>Kali Abernathie</td>
<td>Anthony Davis</td>
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<td>Katherine Ahlfield</td>
<td>Janna Folks</td>
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<td>Abdulla Alhashmi</td>
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<td>Storm-Marie Allmon</td>
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<td>Eduardo Bustamante</td>
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<td>Darianne Cloudy</td>
<td>Yusra Islam</td>
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## Graduate Students

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<td>Erin Lilie-Fisher</td>
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## Leadership and Service Awards

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<td>Undergraduates</td>
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<td>Robert Sharp</td>
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<td>Reynie Spychalski</td>
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## Academic Achievement Awards

**Graduates**

- Chelsea Calloway
- Sara Dempsey
- Kristiana Kuehnert
- Erin Lilie-Fisher
- Lori McLean
- Amanda Mohs

**Undergraduates**

- Darianne Cloudy
- Stephanie Yocca

(Cumulative GPA: Grad - 3.85 or higher, Undergrad - 3.7 or higher)

## Outstanding Graduating Students

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<th>Graduate</th>
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<td>Lori McLean</td>
<td>Darianne Cloudy and Reyne Spychalski</td>
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## Black History in the Making

Darianne Cloudy

## Emily R. Murphy Scholarship

Chelsea Calloway

## Paul B. Ferrara Scholarship

Stephanie Yocca
Department of Forensic Science Diploma Ceremony May, 2015
We’re partnering and expanding again! As the Department of Forensic Science has grown to nine full time faculty (with more on the way) and a third undergraduate concentration, our need for classrooms, teaching labs and research space has also grown. In the past three years, we have added nine courses that are now being taught in our teaching labs including undergraduate Forensic Pattern Evidence, Forensic Analysis of Firearms and Toolmarks and Service Learning and graduate-level courses in Forensic Entomology, Firearm and Toolmark Identification, Statistics, Forensic Analysis of Paints and Polymers, Analysis of Fire Debris and Explosives, and Developmental Osteology. In addition, we have increased the number of students engaged in research in our labs. Last year, 29 undergraduates and 16 graduate students conducted Independent Studies or Directed Research in the department’s research labs. It was apparent that additional classrooms and labs were needed in order to provide these learning opportunities for our students and faculty. The College of Humanities and Sciences (CHS) Deans’ Office reallocated space for us in Harris Hall South, the Bridge over Main Street (connecting Harris Hall South and Oliver Hall) and in the Temple building.

We are sharing both a new Instrumentation Facility (the Bridge itself) as well as a new wet prep lab with the Chemistry Department. The new facilities contain instrumentation that had been in the Department of Forensic Science, and most of the former Chemistry Instrumentation Lab instruments. The construction of the lab into the Bridge was designed on paper several years ago. The implementation was supported by Michelle Peace (former Interim Chair of Forensic Science) and Scott Gronert (former Chair of Chemistry). Now, not only will the Chemistry and Forensic Science departments be able to teach better, the new space will have a positive impact by fostering collaborations between the departments.

Undergraduate forensic science majors are sure to be thrilled to have such a top notch facility for their upper level courses, and graduate students will be able to conduct their research.

The CHS Deans’ Office was once again generous in reallocating space when the new Chair of the Department, Tal Simmons, joined the Department in January 2015. The department received space on the third floor of the Temple Building and the second floor of Harris Hall South. These rooms have been converted to a classroom, three faculty offices, a Forensic Biology/Trace Chemistry research lab, a Forensic Anthropology research and teaching lab and a Crime Scene room! Still to come is another Forensic Molecular Biology research lab due for completion in October. With these changes, existing space within the department was able to be converted into a Chemistry research lab, a Microscopy and Trace Evidence teaching lab as well as additional space for Biology instruments in the other teaching lab.

It has been exciting to see all the renovations completed this semester and we are definitely enjoying the effects of the additional space in providing more opportunities for our students. If you are in the area, please drop by to take a tour and the new, expanded Department of Forensic Science.
Art in Forensic Science: Microscopy

**Photomicrograph** - a photograph or digital image taken through a microscope to show a magnified image of a microscopic specimen.

**Photomicrography** - the process of taking photographs through the microscope.

The technique of photomicrography is quite old; as old as the photograph itself. Experiments with photomicrography started in England in 1839 with the first really sharp images being produced by 1851. By 1856, photomicrography was well established, using wet colloidal negatives and silver-albumen paper. Through the decades this highly-specialized skill, taking years of practice to achieve good results, has undergone much change. Now, with the invention and availability of digital cameras, it has become a much more uncomplicated technique.

In its simplest form, photomicrography is achieved by coupling a camera to a microscope to produce photomicrographs of very minute microscopical detail. Many modern microscopes incorporate the camera as an integral part of the microscope design.

To make good photomicrographs though, you must know how to use the microscope effectively and therefore you must have a good working knowledge of the instrument. This knowledge includes the selection, capabilities, and limitations of the optical components; how to adjust the microscope; how to illuminate the specimen; and even how to prepare specimens for examination and photography.

After more than a century and a half this technique is still as much art as it is science.

Each year, one of the later labs for FRSZ 673L (Forensic Microscopy) is a photomicrography lab. Students are taught how to prepare samples (usually focusing on re-crystallization of a few birefringent powders). The students then apply what they have learned during the year and use Polarized Light Microscopy to take as many pictures as they want. Each student submits their best three pictures to an “independent committee” (usually Trace examiners, TA’s, other VCU Forensic Science Instructors and a professional photographer). Pictures are judged for clarity, vivid colors, focus, artistic wonder (wow-factor), composition and more. When a single winner emerges, high quality print is displayed on the “Bragging Wall” in the teaching lab in Room 2021.

We hope you are wow-ed by our winners!

**FEPAC Re-Accreditation**

The Forensic Science Department will host a visit from the Forensic Science Education Program Accreditation Commission (FEPAC) site evaluators, Dr. Rick Hellman and Dr. Jarrad Wagner, on October 5th-8th. FEPAC was formed to develop academic standards for forensic science undergraduate and graduate degree programs and to provide a system of evaluation and accreditation for those programs at colleges and universities throughout the United States. FEPAC’s purpose is to recognize high quality programs that meet the minimum requirements, as determined by forensic science practitioners and educators alike. This year marks the VCU Forensic Science Department’s five year reaccreditation and the review will include an assessment of all tracks in both the undergraduate and graduate programs. As part of the reaccreditation process, Dr. Hellman and Dr. Wagner will be pouring over course syllabi and program documents, as well as interviewing faculty and select students and alumni.

The accreditation process is an involved undertaking and takes an entire calendar year to complete. The process began for the Department back in March of this year with the submission of the accreditation application. By mid-summer, the Forensic Science Department completed twoa 70+ page Self-Study Reports (one each for the undergraduate and graduate programs), which highlighted the programs compliance with all standards set forth by FEPAC. The site visit and Self-Study provides both FEPAC and VCU an opportunity to engage in discussions about the performance of the Department, future needs and growth of the Department, and identify areas for improvement. This process provides the Department with an opportunity also discuss mechanisms for improvement and to discuss any concerns or recommendations that might arise as a result of the evaluation. The final stage of the process is a vote by the FEPAC Commission on whether they will accredit the program. This occurs during the FEPAC meeting that takes place at the annual AAFS meeting in February 2016. Announcements regarding accreditation status are released to the public shortly after this meeting concludes.
Greetings Alumni, Friends, and Students!

I began as Chair of the department in January and have a real duality of feeling: on one hand, I’m still so excited that it seems only yesterday my daughter and I arrived to VCU and Richmond after spending the last 11.5 years in England – and on the other hand, everyone has been so welcoming that I feel as if I’ve always been here. VCU is every bit as dynamic as I had hoped and here in forensic science we are moving forward at a rapid pace as we enter our second decade as a Department. Our third, five-year accreditation cycle with FEPAC for both the undergraduate and graduate programs is in progress, and the on-site evaluators will be with us during the first full week of October.

We have expanded in physical space (roughly doubling our size with new classrooms and offices, new research and teaching labs), faculty (adding Cathey Connon and promoting Sarah Seashols Williams to a tenure line, both in forensic molecular biology), students (we recently counted almost 400 undergraduate majors and 43 graduate students) and new research collaborations (both within VCU and external). We are still seeking a new tenure track faculty member in forensic chemistry. There are also specific departmental needs concerning research and teaching in the area of forensic pattern analysis.

We have many more exciting changes in store, including adding new courses in forensic entomology, forensic anthropology and forensic taphonomy – as well as research projects for independent studies and directed research in these areas in collaboration with our forensic chemists and forensic biologists. Currently, we are exploring adding a concentration to the Masters program in forensic anthropology/entomology and – yes! – even taking on our first Ph.D. students through the Integrative Life Sciences program.

Stay tuned for future developments – we are definitely “Making it Real” and making things happen in the Department of Forensic Science. It is truly an honor to be here!

VCU Forensic Science Department was awarded FIVE National Institute of Justice Grants for 2015-2016! Big shout outs to Tracey Dawson Cruz, Marilyn Miller, Chris Ehrhardt, and Michelle Peace. In addition, Sarah Seashols Williams was awarded a Jeffress Foundation grant. Total grant dollars for the awards: $1,549,600.

Dr. Dawson Cruz and Dr. Miller and their group are researching Methods for Obtaining STR Quality Touch DNA from Archived Fingerprints ($255,047). Dr. Dawson Cruz will also be working on qPCR Genotype Determination and Mixture Detection Using High Resolution Melting Curve Analysis of STR Loci ($321,328).

Dr. Ehrhardt and his team are looking at Three-Dimensional Craniofacial Variation of Modern Americans: A Visual Reference to Supplement Facial Approximation Methods ($238,863) and Front End Separation of Compromised Blood Mixtures for Single Source DNA Profiling ($295,236).

Dr. Peace and her research group are working on Characterization and Abuse of Electronic Cigarettes: The Efficacy of a Personal Vaporizer as an Illicit Drug Delivery System ($339,126).

Dr. Williams in collaboration with Joseph Reiner in the Department of Physics and their students are exploring Single Molecule Forensic DNA Analysis with Laser-Induced Nanopore Heating ($100,000).
Undergraduate Spotlight  Ardy Azimi

Semester at Sea is a university program that began over 50 years ago. It is a floating university campus that has visited many countries and cities around the world. In the Fall of 2014, I had the opportunity to sail on the MV Explorer, one of the six ships of Semester at Sea, for 108 days. We started from South Hampton, England (where Titanic sailed from). Over the next 108 days, I visited 10 countries in Europe, (Russia, Poland, Germany, Belgium, France, Ireland, Portugal, Spain, Italy), one country in Africa, (Morocco), one country in South America, (Brazil), and two countries in the Caribbean, (Barbados and Cuba). After visiting Cuba, our ship docked for the final time in Ft. Lauderdale, Florida.

On our ship I got to interact with more than 600 students, faculty and staff from universities throughout the country. Over time, we all became a huge family. It made me appreciate how blessed I am at home in the US) and to be thankful for all that I have. Each port has its own unique personality, but my two favorites were Cuba and Italy. I liked Cuba because it felt very special to be there since only recently the relationship between Cuba and the U.S. has become more open. We were welcomed by the University of Havana and were escorted from our ship to the university. Being in Cuba felt almost as if we were stepping back in time, everything seemed so antique. It was very special because not many people have had the opportunity to see this amazing country and its people. My other favorite port was Italy, a country that I have wanted to visit for many years. I got to see the Statue of David in Florence, drive through the country side of Tuscany, eat pizza by the Tower of Pisa, and visit Rome. It was awesome to see different areas of Italy and get to interact with locals, not just be a tourist.

I had worked really hard to get on this program, a once in a life time chance that brought out the best of me. When I came back from Semester at Sea, I was more patient and had the mindset that everything would work out with hard work and dedication. I finished my spring 2015 semester at VCU with a 3.0 GPA, which is the best GPA I have gotten throughout my college career.

Graduate Spotlight  Whitney Simpson

Whitney Simpson, a recent graduate of the master’s program, had the opportunity to work at Illumina in San Diego, California as a forensic genomics intern under the mentorship of VCU alumna, Carey Davis. Her research focused on performing validation studies on the soon to be released MiSeqFGx (Forensic Genomics System) and DNA Signature Prep Kit. This instrument is Illumina’s next generation sequencing instrument created specifically for forensic use. This work is important because when a new product is developed it must be tested and validated by the manufacturer as well as independent laboratories before it can be used for forensic casework. Therefore, studies are performed to compare the results of new technologies with existing validated technology to make sure the results seen are concordant and reliable.

Working at Illumina for the summer allowed Whitney to gain exposure to research and development in a commercial setting. She was able to assist in the validation process of a product that has amazing potential and that she believes will be of tremendous benefit to forensic laboratories and allow analysts to extract as much information as possible from often minute and degraded samples. This internship also allowed her to observe how people of many different expertise work together to produce and optimize products. Working at Illumina made her want to learn more about genomics and sequencing and how they can benefit forensic DNA analysis. Working under the mentorship of VCU alumna Carey Davis was a great experience as well. Her background in forensic science, chemistry, and sequencing both in academic and commercial environments gives her a unique perspective that provided an amazing learning experience. Whitney presented the research from this internship at the American Academy of Forensic Science Annual Meeting in February, 2015.
Military Spotlight  Kelley Burnham

I joined the military in 2007 after graduating from high school. I was not ready for college and did not want to work retail or at a sub shop full time. My only other choice—in my eyes—was to join the Air Force. I enlisted for six years and when my duty ended in 2013 I had reached the rank of Staff Sergeant. I decided that I still wanted to continue to serve, so I enlisted in the Reserves instead of leaving altogether. This helped with my transition from military to civilian life immensely. It let me have some structure and let me keep doing the familiar while also trying something new.

While I was in the service I was in what is known as Services. This job covers Food (dining facilities), Fitness (gym), Lodging, and Mortuary Affairs. While my first four years were in the food service genre, my last two years of service were in Mortuary Affairs. This was what strengthened my resolve to be a forensic scientist. It was also the first time I saw a deceased person, which not everybody can handle.

I enrolled in Virginia Commonwealth University (VCU) because of its excellent Forensic Science Program. VCU has been very good to both me and my Reserve status. The school has helped me transition back into an educational environment as though I never left. The professors have also been very accommodating if any of my Reserve life has bled into my school life. As an example, I had to go to a two week training in Georgia for my current job as an Air Transportation Specialist. Unfortunately, I was given orders to report for training in the middle of the semester. Luckily, my Professors were all very understanding and let me make up all the exams and labs I missed. My instructors also helped me with any subject I missed that I did not understand on my own. This let me relax and let me focus on my training for the Air Force.

I have wanted to be a forensic scientist for a long time and the Air Force helped strengthen that longing. VCU is helping me accomplish this goal. I cannot wait to see what my future holds both in the Reserves and in the Forensic Science field.

Forensic Science Student Club (FSSC)

Another successful Murder Mystery Dinner Theater under the FSSC’s belt as wedding turned deadly at this year’s MMDT, “I’m Getting Murdered in the Morning.” Guests were treated to a disastrous wedding reception that spun even farther out of control when a guest was killed during the garter toss. It was up to those attending to determine who the killer was. And what an attendance the club had. This year, tickets were sold out only two weeks after they went on sale, leading to a wonderful turn out that the club was proud of. The undergraduates and graduates that came together to put on this show did a marvelous job!

For the fall semester, the FSSC is looking towards having more guest speakers come and present to its club members. The goal is to expose students to the various careers and opportunities that are out there in the field of forensic science. Club members also get to look forward to semester favorites like the Office of the Chief Medical Examiner’s Tour, which occurred on October 1st and the Department of Forensic Science Tour on October 23rd. Shooting range trips are being planned as well as other fun adventures like a ghost tour of the Richmond area and fun social activities that can bring all students interested in forensic science together.
It all started in the year 2000 PC (pre-CSI). Ms. Baldwin, my 11th grade anatomy & physiology teacher, had our class do a blood typing “who dunnit” lab. It was then that forensic science first caught my eye.

Fast forward to September 2002. I was a freshman in intro biology at George Washington University exploring a pre-med option. By the end of the semester, I knew that becoming a doctor was not for me but there was something about chemistry that intrigued me so I declared it as my major. I met with my chemistry advisor and she presented me with several options for concentrations, one of those being forensic chemistry. I remembered how much I enjoyed Ms. Baldwin’s forensic laboratory in 11th grade so I decided to take that route.

Fast forward again to 2005. Uh oh, I don’t want to be a chemist anymore! I loved forensic science but no longer loved the chemistry component (I blame O-Chem) so I decided to explore some other options. I came across an opportunity to become a DNA technician with The Bode Technology Group. Yes, I have finally found my calling! I didn’t know very much about biology, except what I learned in biology my freshman year, but I was willing to play catch up in order to make my dreams come true.

I applied to enter the Master’s of Forensic Science program at Virginia Commonwealth University. After originally being waitlisted, I was accepted and decided to concentrate in forensic biology. When Dr. Tracey Dawson Cruz called to give me the good news, she told me that she had noticed the previous experience I had working in a DNA laboratory and encouraged me to apply to work in her research laboratory. I was hired to work in her laboratory and I spent my two years as a graduate student conducting research, maintaining the laboratory, and eventually managing the laboratory. The hands-on experience I gained was invaluable. I am convinced that the experience I had in her laboratory along with the top-notch education I received at VCU led to the three job offers I received from local, state, and federal laboratories before I had even graduated.

Fast forward again to August 2008. I had graduated from VCU, joined several professional organizations, presented my research at numerous conferences, and now I was working as a full-time DNA analyst with the Maryland State Police Forensic Sciences Division. I was specifically hired to work with the technical unit which meant I was involved with research, validation, training, as well as forensic casework. I was also the laboratory’s tour coordinator which was a position I volunteered for because I enjoyed sharing my love of forensic science with new people. I loved sharing forensic science so much that I became an adjunct professor of forensic biology with the University of Maryland University College. I taught classes after work and that is when I caught the teaching bug.

I spent five wonderful years with the MSP-FSD when my husband was offered a new job in Virginia after we had just had our baby boy. I decided to follow him to Virginia. I applied to work at George Mason University and was offered a position as a STEM Accelerator and assistant professor in the forensic science program. At GMU, I teach undergraduate and graduate classes in forensic science and I also coordinate the STEM outreach activities for the College of Science. Now I get to teach and share my love for forensic science every day! My path was not the easiest or the most straight forward, but every step has been integral to making me the forensic scientist I am today.
Sports Spotlight Briana Ratchford

Athletics have always been a big part of my life. Since I was young, my parents kept my sisters and I involved in sports throughout the school year and during the summer. Playing sports was something I enjoyed doing for fun; I never imagined that I would be a part of a collegiate sports team.

I wasn’t aware of VCU’s athletic program when I first discovered the school. I found VCU’s accredited Forensic Science curriculum in a book called Opportunities in Forensic Science; suggested to me by my science teacher. I have been interested in forensic science for as long as I can remember, and after taking this course in high school, I decided that I wanted to pursue this field in college. After researching and visiting schools, VCU would be the only university I would be truly happy attending.

As I developed academically, I also developed as an athlete. I excelled in several sports in high school and hold the Roeper high school’s record in multiple track events. I was the two time state champion in the 100meter hurdles. In AAU track and field, I was the national champion in the javelin throw. When I visited VCU, I met the track and field throws coach, Ethan Tussing, and was offered a scholarship to throw shot put and javelin.

Being a student athlete is rewarding yet challenging; the athletic department provides resources to succeed academically. They provide a great support system that ranges from study spaces, to professional seminars to community service opportunities. Not only am I immersed into a network of teammates and coaches, there is a great sense of camaraderie amongst the different sports teams.

Being on a sports team is a huge time commitment; as a consequence, there are numerous social and academic events that I miss. While in season, I travel upwards of 12 hours to a meet, missing classes almost every weekend. The experience, competition and great friendships I have made are all worth the commitment. In my three years as an athlete, I have broken the school record in javelin, I have medaled in the indoor and outdoor conference championships three times, and I have been a member of the history making, 2015 Indoor Women’s Atlantic 10 Conference Championship team. I had high hopes for a great outdoor season, but due to an ACL injury in my first meet, my season came to an abrupt end.

I am very fortunate to attend a school that fulfills my academic and athletic aspirations; I love that my forensic science curriculum is challenging and fulfilling. I enjoyed taking my core classes such as Scientific Crime Scene Investigation, and Forensic Law and look forward to what awaits this upcoming school year. I’m excited about my upcoming cancer research internship at Beaumont Hospital’s Bio Bank in Royal Oak, Michigan. For my senior year, I look forward to working towards my degree, getting more involved within the Forensic Science department and obtaining a research internship in the Virginia Area.

Sport Spotlight Tough Mudder

What is Tough Mudder? According to their website, it “is a team-oriented 10-12 mile obstacle course designed to test physical strength and mental grit” that includes hardcore military-style obstacles. To the uninitiated, it can be hard to explain the appeal of Tough Mudder. Why would anyone pay to jump into a dumpster of ice water, run through live wires that zap you with 10,000 volts, or crawl through a tunnel of tear gas? Only insane people you would think. However, at its heart, Tough Mudder is a group-bonding exercise. It is truly about camaraderie. It takes a team to overcome the 20+ obstacles, to help each other over walls, under logs, and through the mud.

Running through the finish line with your teammates is one of the most rewarding feelings. Not only have you and your teammates conquered the “toughest event on the planet,” but you have become better friends. The cuts, scrapes, and bruises you earn are temporary. But the memories you create while out on your 10-12 mile adventure last forever. The laughs you shared when one of your teammates face-planted in the mud or the “helpful boost” from a friend that brought you closer together will be remembered over the moment at mile 6 when you thought you couldn’t go any further.

Tough Mudders have to state their pledge before each race, but it is a philosophy that applies beyond the course. Adopting the same principles for everyday life develops camaraderie and leadership skills, both of which help you get the most out of the Forensic Science program at VCU. As graduate students, we also found that Tough Mudder is a great escape from the stresses of graduate school. Similar to intramural sports, it gives us an opportunity to focus on something other than coursework and research. It also allows first year and second year students to get to know each other outside of the school setting. The IVNVI team is on its third consecutive year of Tough Mudders with no sign of stopping!
During the summer I had the opportunity to participate in a month long faculty led study abroad program for biology and anthropology in South Africa. The trip began in Johannesburg where we went to different fossil museums and then on a tour of the Sterkfontain, which is one of the fossil sites in the Cradle of Humankind. We spent the next week working at Gondolin, another part of the Cradle of Humankind. We learned about the dig site & the proper process for digging. We then had the chance to dig in several areas, look for fossils in rocks near the dig site and photograph and sketch another area. After these tasks were completed we began excavation of the cave.

Our next stop was Kruger National Park where we got to see many of the animals native to South Africa, including elephants, giraffes, lions, hippos, birds, crocodiles, baboons, zebras, hyenas, jackals, kudu, impala, nyala, warthogs, and a leopard. The best part was just being able to spot the different animals and getting to see them in their natural habitat.

We then flew to Cape Town where we went to the Signal Hill with a good view of Table Mountain and Lion’s Head and saw the sunset, which was one of the coolest things I have ever seen. We had tours of Robben Island where Nelson Mandela was imprisoned and Khwattu where a San person led a tour and told us about their traditions and history. Other experiences in Cape Town included a community service project, visiting a fossil site and viewing penguins on the beach.

While the trip wasn’t forensic science related, I definitely could relate it back to the major. If given the chance, studying abroad is a wonderful way to learn new information as well as see the way others live.

During the summer, our second year graduate students were busy working on their Directed Research. While many students remained in Richmond with our own faculty, some traveled long distances to focus on their areas of interest.

- Jena Baldaino, FBI in Quantico- Counterterrorism and Forensic Science Research
- Amelia Russel, Virginia Anatomical Program (housed in the OCME, Richmond) & Singh Laboratory- Embalming and the effect on microbial and fungal communities; Effects of embalming on DNA analysis
- Karen Butler, Peace Lab at VCU– Use of Solid Phase Microextraction (SPME) to sample the aerosol produced by an electronic cigarette (e-cig) and to analyze it using DART-MS and GC-MS
- Claire Cartozzo, Simmons Lab at VCU- Looking at three different extraction methods (classic organic phenol/chloroform, DNeasy Blood and Tissue kit, and ChargeSwitch gDNA Plant Kit) for the isolation of quantity/quality DNA from waterlogged pig bones over 500 ADD interval
- Julia Chun, Toxicology Lab, VCU Dept. of Clinical Pathology- Method validation for alcohol analysis in brain and effects of matrix matching and salting out on analysis
- Kemper Gibson, Dawson Cruz Lab at VCU-Differential extractions performed on a rotation driven microfluidic platform
- Jesteen Horn, Alabama Department of Forensic Sciences, Birmingham, AL - Opioid Method Development using Quadrupole Time-of-Flight and Triple Quadrupole Liquid Chromatography Mass Spectrometry Systems
- Megan Jackson, FBI in Quantico- Soil geographic attribution project
- Melissa Johnson, Forensic Lab Division, San Francisco Office of the Chief Medical Examiner-Development of a procedure for solid phase extraction (SPE) and UP-LCMSMS analysis of opiates, their glucuronides, and opioids from post- and ante-mortem samples, such as blood and urine
- Tiffany Layne, Williams Lab at VCU and FBI Quantico-Stability of microRNA for body fluid identification
- David Millard, Virginia DFS, Eastern Lab- Chamber marks: fired vs. cycled through the action
- Emely Morales Colon, Instituto de Ciencias Forenses (ICF) in Rio Piedras PR- Evaluation of direct extraction methods for bones and teeth samples for the development of DNA profiles
- Joe Parian, DART Lab at VCU– Transfer of explosive residue
- April Solomon, Dawson Cruz Lab at VCU-Best DNA analysis techniques to obtain STR profiles from archived fingerprints
- Nancy Stokes, Virginia DFS, Central Lab-Cell separation within mixtures from touch samples to facilitate STR profiling
- Joey Stone, Peace Lab at VCU- E-cigarettes used as an illicit drug delivery system
- Rebecca Thielen, Santa Clara County District Attorney's Crime Lab, San Jose, CA- Analysis of Tire Rubber Traces Using Pyrolysis-Gas Chromatography/Mass Spectrometry and ICP
- Shane Woolf, Singh Lab at VCU- Determination of Long Term PMI Based on Bacterial Community Succession in Porcine Remains
Hello, VCU! It’s good to be back…

I’m happy to say that returning to the VCU Department of Forensic Science was a wise choice for me, and I’m delighted to be the newest member of this growing department’s faculty. Over ten years ago, I joined VCU as a forensic science graduate student / GTA, as well as an adjunct instructor for the Biology and Forensic Science departments. After earning my Master’s in Forensic Science from VCU, I ventured into a forensic DNA career at a private crime lab in North Carolina – LabCorp’s Forensic Identity Department. While at LabCorp, I processed DNA casework, validated new procedures, served as our Quality Assurance representative, and worked with several undergraduate and graduate student interns. The part I enjoyed most was working with students and delving into research projects, which led me down a path to pursue my PhD while still working at the crime lab.

As inconvenient as life may be at times, my job threw me a curve ball the first day of my second semester of my doctorate program at NCSU. It was announced that our lab was closing down and relocating to Dallas, TX to join our newly acquired sister lab, Cellmark Forensics. So, I packed up my family and we headed off to Dallas, where I joined Cellmark and transferred into a PhD program at the University of North Texas.

While at Cellmark, I worked in the Research and Development department, and helped with casework on an as-needed basis. I developed, optimized, and validated new procedures, trained lab staff, and manufactured/reviewed forensic serology and DNA proficiency tests. Oh, and I got my PhD in my spare time! To say the least, it was a busy time for me and my family. The week after I defended my PhD research, another curve ball came my way – Cellmark was closing and relocating to northern Virginia to join another newly acquired LabCorp specialty testing group, Bode Technology (now Bode Cellmark Forensics), where I had been asked to join their renowned R&D group.

But at the heart of it all, academia had never stopped tugging at my sleeve. Graduate school had left such an astounding impression on me, and since the day I spoke at our gradation commencement, I knew that someday I would return. Over the past nine years, I have shaped my career to include forensic biology and teaching experience, and furthered my own education towards that return. I achieved other professional goals that I had set for myself, including being an active member of the American Academy of Forensic Sciences (AAFS) and becoming certified as a Forensic Molecular Biology Fellow through the American Board of Criminalistics (ABC). And, now I am happy to have arrived at my final destination. I am looking forward to providing you students with what I hope will be a rewarding and memorable – not to mention, educational – experience!
Forensic Science Department Tours

As the Forensic Science major continues to hold the interest of so many prospective students, the University Open Houses just did not provide enough opportunities to get to learn about the program in person. We are happy to now offer monthly department tours during which prospective students will learn about the major, tour our space and have a chance to ask questions. While we still encourage people to attend one of the Undergraduate Open Houses, (Saturday, October 3 or Saturday, October - more information can be found at http://www.ugrad.vcu.edu/openhouse/), these department tours provide an alternative if scheduling is an issue. If you know someone who might be interested in forensic science at VCU and can’t make it to an Open House, have them visit bitly.com/frsetour.

Advising Changes

Beginning this fall, all Forensic Science majors will meet with the department’s undergraduate academic adviser at least once per semester. This exciting change means that forensic science majors will be advised from the time they enter the university to the time they graduate by the Forensic Science departmental adviser.

Students are also paired with a faculty mentor based on mutual areas of interest to talk about educational goals, career aspirations, and opportunities to get engaged. As students get close to graduation, the faculty mentors will assist with post-graduation planning, resume development, networking and help with preparing for interviews.

Community Engagement

Our students are taking their knowledge outside of the classroom and the labs to share their love of forensic science with the community. The Service Learning class has brought after school programming to seven middle schools in the City of Richmond and Henrico County. In addition, they have provided Career and STEM Days to local schools as well as on-campus activities and tours to schools and organizations. With the enthusiasm and support of our graduate students, we have partnered with Discovery Camp, Richmond Parks and Recreation, the University of Virginia and the Boys & Girls Club of Metro Richmond to provide forensic science to their summer camps.

Did you know that some of our local schools do not have working microscopes? Through the Service Learning Project Small Grants Program, the Department of African American Studies and the Community Foundation’s NextUp, we have obtained funding to purchase eight portable microscopes and other needed supplies that improve the quality of these community activities. We hope to continue to impact our community with our next goal being to develop a partnership with Highland Springs High School and the Department of African American Studies to create a career pathway for students to obtain a forensic science job.