Meet Our New Chair

An accomplished forensic pathologist and forensic DNA testing pioneer, Victor Weedn, became our new Chair on July 1.

“The opportunity to be part of one of the oldest and strongest forensic science departments in the United States—and one that boasts a very significant alumni base—is very exciting,” said Dr. Weedn, who most recently served as an assistant medical examiner at the Maryland Office of the Chief Medical Examiner in Baltimore, Md.

Dr. Weedn said he hopes to build on GW’s existing forensic sciences programs, which have strong relationships with federal forensic laboratories and investigatory agencies, and increase research efforts and collaborations with the community.

Among Dr. Weedn’s most notable accomplishments are as founder and former chief of the Armed Forces DNA Identification Laboratory. Under Dr. Weedn’s leadership, the organization broke new ground in the use of forensic technologies, and Dr. Weedn oversaw the development for the first portable DNA testing device, which later became the basis for the U.S. Postal Service anthrax-detection equipment.

Dr. Weedn was also instrumental in helping identify the remains of Czar Nicolas II and service members who died in the first Persian Gulf War, the Vietnam and Korean wars, and World War II.

“We could not be more pleased that Dr. Weedn has agreed to lead our Department of Forensic Sciences,” said Peg Barratt, dean of GW’s Columbian College of Arts and Sciences. “He brings impeccable academic credentials and a broad range of experience to the position. I am confident that our degree programs within forensic sciences and the department’s research capacity to develop the forensic science techniques of the future will remain among the best in the world under his guidance.”

Dr. Weedn received his M.D. from Southwestern Medical School and a law degree from South Texas College of Law. He completed his pathology residency at Baylor College of Medicine and University of Texas Medical School and an anatomic pathology fellowship at the M.D. Anderson Hospital and Tumor Institute and a forensic pathology fellowship at the Office of the Armed Forces Medical Examiner (AFIP).

Dr. Weedn—who assisted with the development of molecular pathology standards for laboratories and continues to be involved in proficiency testing of DNA laboratories—is also the treasurer for the American Academy of Forensic Sciences and chair of strategic planning for the National Association of Medical Examiners. He has published nearly 50 articles in peer-reviewed journals and 35 chapters for books on forensic and molecular pathology.

The Department was created in 1968 in the Columbian College of Arts and Sciences. It offers graduate degrees in forensic chemistry, molecular biology and toxicology, as well as high-tech crime investigation and crime scene investigation. (reprinted courtesy of the GW Office of Media Relations)
**Department/ Faculty News**

**Forensic Sciences Department**

We are pleased that Pamela Boland has joined our department as the new Departmental Operations Supervisor and Executive Aide.

Professor Ed Bartick will be joining the Department this Spring as a Research Faculty.

The Department is undergoing a faculty search for a Forensic Chemistry faculty augmenting and further strengthening an area already made strong by Professor Rowe’s expertise, scholarship, and pedagogy.

The Department hosted a judicial delegation of 19 senior judges from the Hubei province of China on Dec 10. They particularly enjoyed meeting two of our Chinese-speaking Forensic Chemistry students, Yue Xi and Guangyu (Connie) Qian.

The Department is hoping to expand its footprint on the Mount Vernon Campus. Estimates of the renovation costs are currently being sought.

**Professor Weedn**

Dr. Weedn has approached Max Houck, the new Director of the DC Metropolitan Consolidated Laboratory, and Marie Pierre-Louis, Chief of the DC Medical Examiner’s Office, for closer ties with GW. The crime lab and ME office are in the process of moving into their new $210M 351,000 square foot building at 401 E. Street S.W., near the National mall.

Dr. Weedn received the President’s Award for “Special and Ongoing Service” at the National Association of Medical Examiners 2012 Annual Meeting in Baltimore.

**Professor Ted Robinson**

Professor Robinson was appointed Outreach Director for the Department of Forensic Sciences.

Professor Robinson’s 2nd book, *Introduction to Crime Scene Photography*, was published Oct 1, 2012. The Intro’ book was written for high schools and community colleges with Introduction to Forensic Science courses, where the entire course is not on Crime Scene Photography. It is much smaller than his original book.

Professor Robinson’s previously published book, *Crime Scene Photography, Second Edition*, was previously required reading for anyone wanting to become Certified by the IAI’s Crime Scene Certification Board. At this year’s IAI meeting in Phoenix, Arizona last July, the Forensic Photography Certification Board decided to also make his text required reading for their certification test beginning in January 2013.

**Professor Walter Rowe**

Prof. Rowe gave one presentation at the AAFS meeting in Atlanta:


He has submitted the abstracts for three presentations for the upcoming AAFS annual meeting in February 2013:

“Application of Attenuated Total Reflectance Fourier Transform Infrared Spectroscopy (ATR-FTIR) To The Analysis Of Red And Green Permanent Marker Inks” (with Robert Ge)

“The Use of Attenuated Total Reflectance Fourier Transform Infrared Spectrometry (ATR-FTIR) in the Analysis of Paper” (with Sheila Kwong)

“Tacit Knowledge, Deliberate Practice and the Development of Expertise in the Forensic Sciences”

Prof. Rowe is the point person for the purchase of a new GC/MS system for the department. He has also been asked to consult with Kuwait University on its development of a master’s degree program in forensic science.

**Professor Moses S. Schanfield**

Professor Schanfield attended the American Association of Physical Anthropology, Human Biology and American Association of Anthropological Genetics meeting April 11-14 in Portland, OR, where he presented a poster entitled: Anthropological usefulness of forensically useful ancestry (AIM) and phenotype informative markers (PIM), authored by Moses S. Schanfield, Katherine Butler, Michelle Peck, Jessica Hart, and Daniele Podini.

Professor Schanfield and Dr. Dragan Primorac, Professor of Forensic Science, Split University, have signed a contract for a book entitled: “Forensic DNA Methods and Applications” with Taylor and Francis Press. The book will have 21 chapters on aspects of forensic DNA testing including SNPs, STRs,
mtDNA, Y markers, X markers, mass casualty events, statistics, legal aspects and the latest trends in forensic DNA testing. The book is aimed at graduate, undergraduate, professionals and legal consultants.

Professor Schanfield has submitted a UFF grant on the role of neurotransmitter genes in human migration.

Professor Schanfield has three FMB graduate students and an undergraduate student doing research on projects on the usefulness of different types of forensic markers (STRs vs SNPs) in differentiating US populations, and completing an undergraduate honors project on the Yakut (Sakha) of Siberia.

Professor Schanfield has received approval for a one month special course FORS 6290 Forensic Science in Croatia and will take a group of FMB and Anthropology students to Croatia for a month in Summer 2013, in time for classes, field work and attending the 8th International Society of Applied Biological Sciences intensive course in forensic, anthropological and medical genetics.

**Professor Nick Lappas**
Co-authored a paper and presented a paper with his daughter, Dr. Courtney M. Lappas.

- C. M. Lappas and N. T. Lappas, d-limonene modulates T lymphocyte activity and viability, Cellular Immunology, 279, 30-41 (2012)
- C. M. Lappas and N. T. Lappas, “d-limonene modulates T lymphocyte activity and viability”, presented at the American Society for Clinical Pharmacology and Therapeutics annual meeting, Washington, DC, March 14-17, 2012,

Professor Lappas co-authored a chapter (in press) with Dr. Donald Chace, a graduate of our program: D. Chace and N. T. Lappas, The use of dried blood spots and stains in forensic science, in Dried Blood Spots: Applications and Techniques, W. Li and M. S. Lee (eds.), John Wiley & Sons.

Prof. Lappas established a Memorandum of Understanding with the forensic toxicology laboratory of the DC Medical Examiner’s Office that will provide our students with internship and research opportunities.

**Professor Eva Vincze**
Professor Vincze developed a partnership with the Crime and Punishment Museum to present cybersecurity awareness workshops to the community.

Professor Vincze developed a partnership with CALIBRE to initiate workforce initiatives and research opportunities in cybersecurity.

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**Donors**

Special thanks to the following donors who made gifts during the 2012 calendar year in support of the Department:

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Eckles Library, Mount Vernon Campus
New Online CSI Courses

One of the most important new aspects of our MS with a concentration in Crime Scene Investigations is that it will be possible for you to get our degree with just half the ‘regular’ time spent on campus. That is because of our increased online courses.

Currently, we have five online courses: Crime Scene Investigations I (CSI I), Crime Scene Investigations II (CSI II), Forensic Photography, Medicolegal Death Investigations (MDI) and Biological Aspects of Forensic Science. These on-campus courses were all converted into online course formats with financial assistance from our Summer School, so originally, there were only offered in the summer. This Spring we are offering Forensic Photography and CSI I as both online and on-campus courses. In the Summer of 2013, all five will be offered online again, but three will be linked into a three course Institute. That needs to be explained.

The Summer CSI Institute will include CSI I, CSI II and Biological Aspects. If you sign up for all three courses as part of the Summer CSI Institute, you’ll only pay tuition for two courses: that is a 33% tuition discount!

Besides saving money, these three courses are also three of the five courses in our Certificate in Forensic Investigations. This Certificate was created for those who did not intend to continue on for the full MS degree. But, just in case you did want to continue for our MS, these three courses are also three of the twelve courses in the MS. And, the five courses required for the Certificate in Forensic Investigations are five of the twelve courses required for the MS.

It is possible to take just the three courses in the Institute if you want to sample forensic science courses. This can be done at a substantial savings. You can stop here if you wish. But, these same three courses can be used as part of the five courses in the Certificate in Forensic Investigations. If the MS is on your mind, the five courses of the Certificate will transfer into the twelve course MS with a concentration in Crime Scene Investigations. The three courses in the Summer CSI Institute are one fourth of the MS degree.

But, it gets better. We have submitted proposals to convert three more on-campus courses into online courses: Questioned Document Examination, Advanced Fingerprint Comparisons and Digital Image Processing.”

Of course, for some, this may not seem attractive. We’ve heard it said more than once that, “I don’t think I’m the kind who can learn in an online atmosphere.” Well that is an endless debate, for some, these options are fantastic. For those not up for Institutes, an online course can also be valuable if two courses one needs are offered on the same day and in the same time frame.

Now, one of the courses can be done online rather than having to wait until the one course is next offered.

As mentioned above, our online courses will also begin to be offered during our regular Spring and Fall semesters in 2013, enabling students in remote locations to take our courses without needing to relocate to Washington, DC immediately, or perhaps allowing them to leave the DC area earlier, for instance, for a job that was offered before their last semester has begun.

Announcing The Bode Technology Fellowship

GW has partnered with Bode for a one to two year paid fellowship for an entering Forensic Molecular Biology student.

We hope that high quality students will choose to apply to our program for this opportunity. It also further establishes our ties to Bode.
Professor Awarded Grant

Professor Daniele Podini has been awarded $263,313 grant from the Department of Justice - National Institute of Justice (NIJ). This two-year project titled “Proximity Ligation Real Time PCR for the Detection of Spermatozoa” will allow FMB students to get involved in cutting edge research in the forensic biology field.

The project addresses one of the major time consuming procedures of forensic biology laboratories: the confirmatory identification of spermatozoa. The preliminary work that allowed generating sufficient data for a successful proposal was supported by Prof. Podini’s startup package, and would not have been possible without the collaboration of Ms. Michelle Peck, MS (class of 2012), now employed as a Research DNA Technician at the Armed Forces DNA Identification Laboratory. Her contribution was paramount for a strong and effective proposal.

In forensic biology laboratories, seminal fluid is presumptively identified using an alternate light source as an enhancement tool, followed by testing for Seminal Acid Phosphatase, an enzyme present in high concentration in semen. If positive, the next step is to test for Prostate Specific Antigen (PSA or p30) with commercially available immunochromatography kits. PSA has been identified at very low levels in other body fluids, thus a positive PSA result may not be considered confirmatory for seminal fluid by all practitioners.

The only indisputable confirmatory test for the presence of semen is the microscopic observation of spermatozoa. This can be extremely time-consuming, particularly in samples with low levels or no spermatozoa; analysts may spend hours searching a slide.

The physical demand of working on a microscope for hours at a time can cause analyst burnout and increases the possibility of sperm cells going unnoticed in low level samples. Automated sperm searcher systems decrease the time spent on a single sample; still these systems can only process samples one at a time. Finally, the cost of fluorescent microscopes and automated sperm searching technology is a large financial commitment for a laboratory.

Sexual assault samples are a large contribution to the backlog that many laboratories face. As technology improves for DNA identification, it is likely that the common time since intercourse restriction (generally 3 days) will be expanded for the collection of sexual assault evidence.

This will only further increase the number of samples that will need to be tested for seminal fluid. The time, cost, and limited automation capabilities of microscopic observation limit the reduction in backlog. Forensic laboratories would greatly benefit from the implementation of a faster, more cost effective, and amenable to automation method for the identification of spermatozoa. Proximity ligation real-time PCR (PLiRT-PCR) has the potential to be the technology that meets these requirements. PLiRT-PCR is a molecular assay that enables detection and quantitation of a target protein. It is a powerful and highly sensitive assay that combines the specificity of an immunological reaction with the sensitivity of real-time polymerase chain reaction, which is commonly used in crime labs.

The goal of this project is the development and optimization of a PLiRT-PCR assay targeting sperm specific proteins. Detection of these proteins will serve as a confirmatory test for the presence of spermatozoa and will allow faster and more efficient processing of sexual assault evidence.

If you are interested in staying up to date with what is going on with the FMB concentration, follow us on our facebook ‘like’ page: GWU Forensic molecular Biology.

SAVE THE DATE

GW Alumni Reception at the AAFS Annual Meeting
Marriott Wardman Park Hotel
Wednesday, Feb 20th, 7-9 pm in Maryland A
2660 Woodley Road NW
Washington, DC 20008 USA

Join us for our annual alumni reception, in conjunction with the meeting, for the opportunity to network with your fellow alumni and reconnect with the GW Forensic Sciences Department.
The Forensic Sciences Department Designs New Challenge Coin and T-shirts

At the beginning of the semester, students in The Forensic Sciences Department were asked to participate in a contest to design the Forensic Sciences Department’s new t-shirt and Challenge Coin. The winner of the design contest for both was Kasima Brown.

A challenge coin is a small coin or medallion bearing an organization’s insignia or emblem and carried by the organization’s members. Traditionally, they are given to prove membership when challenged and to enhance morale. In addition, they are also collected by service members. In practice, challenge coins are normally presented by unit commanders in recognition of special achievement by a member of the unit. They are also exchanged in recognition of visits to an organization.[1]

References

There are several stories about the origins of the challenge coin, dating back as far as the Roman Empire, when coins were presented as an award or for an achievement. But the most common story was that during World War I, American volunteers from all parts of the country filled the newly formed flying squadrons. Some were wealthy young men who left colleges such as Yale and Harvard in order to enlist in the military. In one squadron, a wealthy lieutenant ordered solid bronze medallions embossed with the squadron emblem for every member of his squadron. He carried his medallion in a small leather sack about his neck. Shortly after acquiring the medallions, the lieutenant’s aircraft was severely damaged by ground fire during a mission. He was forced to land behind enemy lines; where he was captured by a German patrol. In order to discourage his escape, the Germans took all of his personal identification except for the small leather pouch around his neck.

He was eventually taken to a small French town near the front lines where he managed to escape during a night bombardment. During the attack, he donned civilian clothes and fled without personal identification.

After escaping, the brave pilot succeeded in avoiding German patrols until he reached the front lines. With great difficulty, he crossed no-man’s land and stumbled into a French outpost. Unfortunately, the French in this sector had been plagued by German saboteurs, who sometimes masqueraded as civilians and wore civilian clothes. Not

History of the Challenge Coin
The origins of the challenge coin tradition may date back to the Roman Empire. Recognizing the young pilot's American accent, the French thought him to be a saboteur and made ready to execute him. Just in time, the American remembered his leather pouch containing the bronze medallion. He showed the medallion to his would-be executioners. When the French captors recognized the squadron insignia on the medallion, they gave the pilot enough time to confirm his identity. Instead of shooting him, they gave him a bottle of wine.

Eventually the pilot made it back to his squadron, where it became a tradition to ensure all members carried their medallion or coin at all times. This was accomplished through a challenge. A service member would ask to see the coin. If the challenger could not produce his coin, he was required to purchase a drink of choice for the member who had challenged him. If the challenged member produced his coin, then the challenging member was required to pay for the drink.

This tradition continued through the war and for many years after while surviving members of the squadron were still alive. Today, military service members often trade these coins while deployed. In some cases, a coin can be earned meritoriously for a job well done. Regardless of how they are required, the history of the challenge coin remains a part of military tradition, and servicemen and servicewomen will continue to display them proudly for years to come.

Through the years the challenge coin tradition has spread to other military units, in all branches of service, and to non-military organizations, such as law enforcement and firefighters. Today, challenge coins are given to members upon joining an organization, as an award to improve morale, and sold to commemorate special occasions or as fundraisers. Reprinted from Secret Heroes

Examples of Challenge coins from a variety of agencies

Rules of the Challenge Coin

Just as there are several stories about the origins of the challenge coin, the rules vary. The most common are:

1. The challenge is initiated by drawing your coin, holding it in the air by whatever means possible and state, shout or otherwise verbally acknowledge that you are initiating a coin check. You may also place it or strike it on a hard surface such as a table. If you accidentally drop your coin and it makes an audible sound it is still considered a challenge.

2. The response consists of all those present responding in a like manner within 15 seconds. At the time of the challenge you are allowed one step and an arms reach to locate your coin. All coin holders present will participate during a challenge. A response can be with any other challenge coin.

3. If there is a challenge and a person is unable to respond then the individual(s) without their coin are required to buy a drink (or meal) for the member who had challenged him. If the challenged member produced his coin, then the challenging member was required to pay for the drink.

4. If everyone being challenged responds with their coin then the person who challenged is required to buy a drink/meal for all those he/she challenged.

5. Failure to buy a drink/meal is considered despicable and a failure of unit trust. Some units require that you return your coin should you do so.

6. Coin checks are allowed anytime, anywhere and anyplace.

7. There are no exceptions to the rule.

8. An organization or unit coin is a coin. Belt buckles are belt buckles, key chains are key chains. However a coin placed in some fashion around the neck is considered a coin.

9. You are responsible for your coin. If someone else is looking at or accidentally drops your coin on a hard surface you are responsible for the consequences of the challenge. However, no one can borrow your coin and force a challenge.

10. Once you agree to carry a coin it comes with an obligation of group loyalty and traditions of the coin. Don’t accept a coin if you do not share the values and beliefs of the group shared with a willingness to respect the traditions of the challenge coin.
News From “Across the Pond”

**HTCI Students Spreading the Word About Cybersecurity Awareness**

During Fall semester, our HTCI students had an opportunity to participate in a unique experience as part of their Project Management class. In partnership with the Museum of Crime and Punishment in Washington, D.C., they presented a series of workshops on Cybersecurity and White Collar Crime. Topics included identity theft, mass marketing fraud, protection against child sexual offenders and internet safety for children and adults. The goal of the workshops was to increase cybersecurity awareness within the community and demonstrate how everyone can play a part in increasing cybersecurity.
Two MS-HTCIA students, Michael Suh and Micah Batchelder, coached by part-time Professor David Vargas, participated in the National Cyber League (NCL) Fall Pilot Challenge.

The NCL is a virtually distributed “capture the flag” style challenge that gives students the opportunity to compete against their peers in cybersecurity. 564 student participants from 89 colleges in 26 states plus the District of Columbia started the season, working with 104 faculty mentor/coaches. More than 6,000 flags were successfully captured during the competition.

Individuals and teams of students were tasked to solve 14 lab challenges covering topics including Linux passwords security, Windows passwords security, basic cryptography, advanced cryptography, steganography, Windows security log analysis, Windows security log recovery, Linux authentication, log analysis, Linux authentication log recovery, Apache logs analysis, network data analysis and web application exploitation.

The NCL Challenge began with a “pre-season” that consisted of two rounds allowing the students to practice cybersecurity in a safe, yet challenging environment. The top ten from each Region then competed in a third play-off round. Suh was ranked 3rd for the Eastern Region and 5th Nationally in the play-offs. Batchelder, who is brand new to the cybersecurity field, ranked at an impressive 82nd. He is looking forward to competing again next year.

Suh, along with nine others, then advanced to the National Championship round. He completed the competition at 21st.

All participants received a certificate of appreciation for collaborating on the challenge, and the top ten received a certificate of completion along with bragging rights for their resumes.

“These workshops were well attended and students received excellent feedback and thanks from the participants.”
Eva Vincze, PhD

HTCI Students Compete in NCL Cyber Challenge

Michael Suh

Micah Batchelder
Department of Forensic Science
Lindsey Marie Ferris Crime Scene Investigation Prize

Stephanie Kingsbury, MFS ’12, was recognized as the 2011-2012 recipient in May 2012.

The Department of Forensic Sciences’ Lindsey Marie Ferris Crime Scene Investigation Prize recognizes a current CSI student in memory of Lindsey Ferris, BA ’01, who earned her Master of Forensic Science degree in 2003, and died suddenly of an illness while serving as a civilian Special Agent with the Air Force Office of Special Investigations. The recipient of the Prize will have demonstrated both academic excellence and the ability to conduct high quality research.

Applying for the Prize:

The Lindsey Marie Ferris Crime Scene Investigation Prize will be awarded by May 1st each year. Applicants for the Prize should submit a copy of their research completed during the previous twelve months, a resume, and an unofficial transcript. These materials should be turned in by March 15th. Applications will be reviewed by at least three full-time faculty members.

Eligibility: Must be a current student in the GW Forensic Science Department with a concentration in Crime Scene Investigation.

Support: The Prize offers $1,000 for the most qualified student each year.

Gifts

Gifts to the Department of Forensic Sciences allow us to provide support for faculty and student research and academic travel, graduate student fellowships, and student enrichment activities including guest speakers, visiting faculty, and symposia. Each gift, no matter how large or small, makes a positive impact on our educational mission and furthers our standing as one of the nation’s preeminent liberal arts colleges at one of the world’s preeminent universities. You can make your gift to the Department in a number of ways:

- Securely online at www.gwu.edu/give2gw. Just choose "Other " under designation and type in the name of the department.
- By mailing your check, made out to The George Washington University with “Forensic Sciences Department” in the memo line, to:

  The George Washington
  University
  2100 M Street NW, Suite 310
  Washington, DC 20052

- By phone: call the GW Annual Fund at: 1-800-789-2611

Thank you!