



Forensic Sciences Newsletter

Volume 2, Issue 2

Fall 2010

Inside this issue:

Chair's Column	1
Faculty News	2
Alumni News	3
Donations	3
Up-coming Conferences	3
Critical Thinking and the Scientific Method	4
Lindsey Marie Ferris CSI Award	6

Chair's Column

Enrollment in the Department's degree programs remains strong. The Department had fifty-one new students start in the fall semester. Ten started in the Spring 2010 semester and twelve in the summer. We had four students start the Forensic Investigator certificate program.

Ted Robinson developed a CSI Institute for the Summer 2010 semester. Ted converted Forensic Photography and Crime Scene Investigation I and II into hybrid courses. In a hybrid course the lectures are online and the students do their practical work on campus over a short period of time. In this case students completed their laboratory work over one week at the end of the summer. Two more courses required by CSI students have been accepted for conversion to online courses between now and next summer. This will allow the Department to present almost the entire certificate program online.

Prof. Daniele Podini and I team-taught the new graduate seminar course FORS 6292 (yes, in accordance with a new university policy we have renumbered all of our courses). The creation of this course is required for FEPAC accreditation of the MFS degree program. All MFS students will be required to take this one-credit course twice in the course of their studies – once at the beginning and once at the end. In addition to lectures by faculty members there were talks by guest lecturers, including Thomas Roma-

towski of the US Secret Service, Dr. Fennella France of the Library of Congress and Dr. Pete Vallone of National Institute for Standards and Technology. This issue of the newsletter contains a longer article on this course.

The Department held its annual open house CSI: Mount Vernon workshop on October 16th as a part of the University's Colonials Weekend. The fourteen participants investigated a multiple murder whose scenario was loosely based on the infamous Atlanta Day-Trader Murders. This was basically a repeat of the 2009 open house.

On October 27th alumnus Jeff Miller, who taught the Homicide Investigation course for many years, gave a two-hour presentation on the DC Sniper Case on the eighth anniversary of the apprehension of John Muhammad and Lee Malvo. Alumni who were living in the DC area at the time of the sniper attacks will remember the chaos that the attacks caused. Jeff processed the murder scene at the Home Depot in Fairfax. He also played a major role in the task force that prepared the case for trial. His presentation gave a unique perspective on the sniper case.

The Department's pursuit of FEPAC accreditation continues. When we initially applied for accreditation we were told that as it then stood the MFS degree program could not be accredited – indeed, not even the forensic chemistry, forensic molecular biology and the fo-



rensic toxicology concentrations could be separately accredited. The Department was informed that it must either (1) require all students entering the MFS degree program (regardless of concentration) to have bachelors degrees in natural science or forensic science or (2) remove the crime scene investigation and high technology crime investigation concentrations from the MFS degree. The departmental faculty agreed that the first option would severely limit the pool of potential students for CSI and HTCI. Therefore, the Department opted for the second option: the crime scene investigation and high technology crime investigation concentrations were removed from the MFS degree. Two new degree programs were created to replace these concentrations: the Masters of Arts in Crime Scene Investigation and the Master of Arts in High Technology Crime Investigation. Our revised application is now under consideration by FEPAC.

As was explained in the Spring 2010 newsletter, our seeking of FEPAC accreditation (cont' on pg 3)



Professor Daniele Podini

Alumni:
Working on an interesting case?
Won an award?
Have some sage career advice for present students?
Tell us about it!
And we'll feature it in the next issue



Faculty News

Professor Daniele Podini

As announced in the last newsletter, Professor Podini has received a large research grant from the National Institute of Justice. He has been invited to present his research at the NIJ research forum at the annual meeting of the American Academy of Forensic Sciences. Professor Podini's faculty position has been converted from a contract position to a tenure-track position.

Professor Ted Robinson

Professor Robinson has been working on the Lindsey Ferris CSI Prize, for the CSI students with both excellent grades and an excellent research paper or project. He has signed a contract to write a new book with co-author Gerald Richards for Academic Press entitled *An Introduction to Crime Scene Photography*. The book will target students in Introduction to Forensic Science courses in high schools and junior and community colleges, rather than working professionals. As noted in the Chair's Column Ted developed a Summer CSI Institute and converted three of his courses into hybrid courses (part online lecture, part hands-on laboratory).

Professor Walter Rowe

Professor Rowe has had two articles accepted for publication. His article entitled "Extreme Degradation of Human Hair by Keratinophilic and Keratinolytic Fungi" has been accepted for publication in *The Microscope*; his article entitled "Forensic Hair and Fiber Examinations in Archaeology: Analysis of Materials from Gravesites at the Home of Samuel Washington" has been accepted by the refereed online journal

Technical Briefs in Historical Archaeology. Professor Rowe and graduate student Allison Fuchs are co-authors of two papers accepted for presentation at the 2011 meeting of the American Academy of Forensic Sciences in the Questioned Documents session: "Differentiation of Black Permanent Marker Inks by Thin-Layer Chromatography and Gas Chromatography-Mass Spectrometry" and "Differentiation of Black Permanent Marker Inks by Ultraviolet-Visible-Near Infrared Spectrophotometry and Fourier Transform Infrared Spectrometry." Professor Rowe has become a member of the American Society of Trace Evidence Examiners; he has also applied to become an associate member of SWGMAT.

Professor Moses Schanfield

Professor Schanfield received a research enhancement award from the Dean of the Columbian College of Arts and Sciences and has two students Danielle Tiesma (forensic sciences) and Melissa Aszkler (an undergraduate anthropology major) working on several projects. The last 200 meiosis samples were shipped to Dr Mark Stonking at the Max Planck Institute for Evolutionary Genetics, for a joint study on mutation rates in mitochondrial DNA. The students will also be working on a project to look at X-chromosome STR loci in worldwide populations to evaluate their anthropological and forensic applications. The latter study will be presented at the American Association of Physical Anthropology meeting in Minneapolis, MN in April. The mtDNA mutation study will be presented at the International Society of Applied Biological Sciences meeting, Bol, Croatia in June, 2011

Professor Eva Vincze

Professor Vincze participated in the Techno Forensics and Digital Investigations Conference at the National Standards and Testing Headquarters in Gaithersburg, MD. The conference has become known as a world-class training and networking events now having had attendees register from 40 different countries. The High Technology Crime Investigation Program has been one of the sponsors of this conference for the past three years.

Her paper entitled "Security in Mobile E-learning: A Tale of Sacred Cows and Trojan Horses" has been accepted for presentation at the Society for Applied Learning Technology (SALT): New Learning Technologies 2011 SALT Conference in Orlando, Florida, February 23-25, 2011.

Professor Vincze also participated in the annual FBI Christmas Party for D.C. school children. The event is part of the Junior Special Agent Mentoring Program founded by the agency in 1990. The overall goal of the program is to help students in Washington Metro Area elementary schools improve in their performance and their attendance; as well as develop a positive self image about themselves. It also encourages students to maintain crime-free, drug-free, gang-free, and violence-free lifestyles. Over 200 students participated in a variety of holiday activities.

(Chair's Column, cont' from pg 1)

has led to other changes in the MFS degree program. All MFS students will now be required to take the graduate seminar course ForS 6292 twice and all MFS students will be required to complete a research project and to present the results of that project in a public forum. The Department has adopted a policy that allows students to meet this research requirement using a project completed in one of the core courses in their concentration, a project completed in ForS 6295: Research or a thesis project completed in ForS 6299-6300: Thesis Research.

Donations

Many thanks to recent donors:

Mr. Alan F. Boehm, MS 1988
 Dr. Tod W. Burke, MS 1984
 Mr. Michael D. Coble, MS 1997
 Ms. Joanna Lynn Collins, MS 2003
 Mr. Gary D. Eager, MS 1993
 Ms. Adeena M. Emery, MS 2009
 Ms. Diana L. Freas-Lutz, MS 1994
 Mr. Harold W. Gossett, II, MA 1983
 Mr. William E. Harvard, Jr., MS 1971
 Mr. Bell P. Herndon, MS 1971
 Ms. Beth Carlson Kimmerling, MS 1992
 Mr. Anthony Frank Mauro, Jr., MS 1973
 Mr. Charles Eugene Perrotta, MS 1977
 Dr. George Edward Reed, MS 1988
 Mr. Robert Alan Relick, MS 1980
 Mr. Edward Moore Robinson, MS 1991
 Mr. Roger C. Woods, MS 1973



**AAFS Annual
 Scientific
 Meeting
 February 21 –26,
 2011
 Hyatt Regency
 Hotel
 151 East Wacker
 Street
 Chicago, Il, USA,
 60601**

Alumni News

Ksenia Nasielski , MFS - HTCI (2006) published an article entitled "Tool Collection" in *DFI News*, September 24, 2010 . www.dfinews.com/article/collection-tool-comparison .

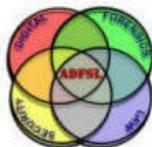
J.D.Durick, MFS - HTCI (2010) published an article entitled: "Ghost in the Machine" in *Digital Forensics Magazine* (Issue 2) <http://digitalforensicsmagazine.com/>

Riad Basalah, MFS (1983) died in Cairo on December 19, 2010.



Techno Security & Digital Investigations Conference

• MYRTLE BEACH, SC • JUNE 5 - 8, 2011 •



**The 2011 ADFSL Conference on
 Digital Forensics, Security and Law
 May 25-27, 2011
 Richmond, Virginia USA**



“Forensic examiners must understand the principles, practices, and contexts of science, including the scientific method.”



Critical Thinking and the Scientific Method by Walter Rowe

One of the curriculum changes that the Department of Forensic Sciences made in order to qualify for accreditation by the Forensic Education Program Accreditation Commission (FEPAC) was the creation of ForS 6292: Graduate Seminar. According to FEPAC’s self-study document: “A formal seminar presented by invited experts, faculty, and/or students covering topics such as published work, original research, and other relevant topics must be offered.” FEPAC also considers ethics and professional responsibilities, as well as quality assurance, to be core forensic science topics. Therefore, the Department decided to incorporate these topics into the graduate seminar: They are pertinent to all forensic science disciplines and our graduate students should be exposed to these topics as early in their graduate studies as possible.

Quality assurance was a relatively easy topic to cover; ethics proved to be a different matter altogether. For the first offering of the seminar course, students were assigned Peter Barnett’s book *Ethics in Forensic Science: Professional Standards for the Practice of Criminalistics* (CRC Press, 2001). They were also asked to read the codes of ethics of the American Academy of Forensic Sciences (AAFS), the California Association of Criminalists (CAC), some forensic science regional professional organizations and selected scientific professional organizations (e.g. the American Chemical Society). It became immediately apparent that existing forensic science codes of ethics have serious deficiencies: That of AAFS is extraordinarily vague and barely touches on professional ethics (two of its four short paragraphs relate to actions of

members inimical to Academy or its goals). Some of the ethical requirements of the CAC code of ethics seem to conflict with others (such as confidentiality).

To encourage thinking about ethics and professional responsibility, students in the seminar course discussed in breakout sessions ethical dilemmas drawn from actual cases (either publicized in the media or known to faculty members). They also had writing assignments in which they had to address ethical issues in scenarios and provide reasoned arguments to support what they regarded as the ethical course of action. They were to try to justify their courses of action based on the AAFS and CAC codes of ethics, if that were possible.

The National Research Council’s recent report *Strengthening Forensic Science in the United States: A Path Forward* (National Academies Press: 2009) in discussing forensic science education stated: “Forensic examiners must understand the principles, practices, and contexts of science, including the scientific method.” One of the texts adopted for the new graduate seminar ForS 6292 was *The Thinker’s Guide to Students and Faculty to Scientific Thinking*, written by Richard Paul and Linda Elder of The Foundation for Critical Thinking. This book (pamphlet really) presents an interesting way of analyzing subjects. These questions can be used by critical thinkers to analyze virtually any subject:

- What is the purpose of studying this subject?
- What kinds of questions do students of this subject ask?

- What information or data do they look at?
- What types of inferences or judgments do they make in this field?
- In what distinctive ways do they gather information relevant to this field?
- What are the fundamental ideas, concepts or theories in the field?
- What are the fundamental assumptions of practitioners in this field?
- What viewpoints regarding the world are promoted by the study of this field?
- What are the implications of this field of knowledge for humanity at large?

The concept of multiple realization can be illustrated by a drop of blood found at a crime scene. While the deposition of that drop of blood is governed by the laws of physics and its composition is governed by the laws of genetics, molecular biology and chemistry, the deposition of a drop of blood from a particular person in a particular way (drip or spurt or cast-off) at a particular time is not governed by any laws in those supposedly more fundamental sciences. The circumstances of the deposition of that drop of blood could not have been predicted using laws from any of those sciences. There are multiple ways in which a drop of blood on a surface can be realized: Different sources, different mechanisms of deposition, and different times during the event.

Critical Thinking, cont”

One hates to give scandal to the innocent. However, discussing scientific method with students in the graduate seminar course led inevitably to discussing pseudo-science.

The students were required read the late Martin Gardner’s seminal paper “Hermit Scientists” which appeared in *Antioch Review* in the early 1950s. Gardner later expanded this article into the book *In the Name of Science* (which is still available from Dover Press under the revised title *Fads and Fallacies in the Name of Science*). The students read Nobel laureate Irving Langmuir’s famous “Pathological Science” (the transcript of a seminar that Langmuir gave at General Electric in the 1950s) and Peter Huber’s “Pathological Science in Court.” The latter deals primarily with “toxic tort” litigation, rather than forensic science *per se*.

As an exercise in critical scientific thinking students critiqued a statement made by a defense expert witness in a Federal drug case. The expert PhD chemist stated that he was able to elute LSD from blotter paper with paper chromatography and that therefore LSD on blotter paper was not a mixture. This testimony had the intended effect of diminishing the sentence imposed by the trial judge by excluding the

weight of the blotter paper from the calculation of the sentence. (Parenthetically, I would note that ultimately the US Supreme Court ruled that including the weight of blotter paper or sugar cubes was not what the Congress intended when it crafted sentences based on the aggregate weights of drug mixtures.) In chemistry we do not have too many options as to what LSD on blotter paper is: Element, compound or mixture. Moreover, even BA and BS chemists know that chromatography exists to separate the components of mixtures.

The errant PhD chemist was not a forensic science professional. He didn’t work in a crime laboratory, nor was he a member of the American Academy of Forensic Sciences. He clearly hoped to parlay his testimony into a lucrative forensic consulting career; however, he was not able to realize this goal because the problems with his testimony came to the attention of US attorneys prosecuting drug cases in which he was to appear as an expert witness for the defense. Seminar students were also introduced to the forensic career of Prof. Louise Robbins, an anthropologist who testified again and again in criminal cases about footprints and shoe impressions. Robbins had made legitimate contributions to

science. For example, she had examined the famous hominid footprints uncovered at Laetoli. However, at the trial of Rolando Cruz, Alejandro Hernandez and Stephen Buckley for the rape and murder of nine-year-old Jeanine Nicarico Robbins had testified that Buckley’s Payless shoe could have made the shoe impression on the Nicarico’s front door. Bill Bodziak, one the FBI’s best shoe impression examiners, later demonstrated that the shoe impression was made by a Fava brand shoe. Despite Robbins’ testimony the jury hung on the issue of Buckley’s guilt; Cruz and Hernandez were convicted and spent almost two decades on Illinois’ death row before being cleared by post-conviction DNA testing.

The seminar students also read a series of articles in *Reason* magazine on weird forensic science in Mississippi. Dentist Michael West claimed in several cases to be able to visualize patterned deep tissue bruising using a special light source. Although Dr. West had published articles on the *Journal of Forensic Sciences* on photography of bruises, he was not able to produce photographs of the patterned bruises he claimed to have seen. Ultimately, West resigned from the American Academy of Forensic Sciences after an ethics investigation.



Jeanine Nicarico, age 9

Cruz and Hernandez were convicted and spent almost two decades on Illinois’ death row before being cleared by post-conviction DNA testing.



GW Summer Institutes 2011

Crime Scene Investigations

Online Courses
May 16—June 17
July 6—August 5
On Campus Component
August 8 - 12

Contact the Office of Summer Sessions or visit our website at:
<http://departments.columbian.gwu.edu/forensicsciences/>



Brian Dugan indicted for the actual murder of Jeanine Nicarico on Nov. 2005. Presently on death row.

THE GEORGE
WASHINGTON
UNIVERSITY



Forensic Sciences Department
The Mount Vernon Campus
Somers Hall-Lower Level
2100 Foxhall Road NW
Washington, D.C. 2007

Phone: 202-242-5758
Fax: 202-242-5761

E-mail: forsc@gwu.edu
Web: [http://
departments.columbian.gwu.edu/
forensicsciences/](http://departments.columbian.gwu.edu/forensicsciences/)
Facebook: [GWUforensics](https://www.facebook.com/GWUforensics)
Twitter: [twitter.com/
gwuforensics](https://twitter.com/gwuforensics)

Photo credits:

Pg 4: AAFS: www.aafs.org
Pg 4: Ethics: www.seounity.com

Pg5: Jeanine:
www.weblogs.cltv.com
Pg 5: Dugan :
www.mylifeofcrime.wordpress.com



**Department of Forensic Science
Lindsey Marie Ferris Crime Scene Investigation Prize**

The Department of Forensic Science Lindsey Marie Ferris Crime Scene Investigation Prize is intended to recognize 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 this 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 on 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.

Note: For only the 2010-2011 academic year (the first year this Prize will be awarded), applicants may submit research completed at any time while a GWU CSI student.

Eligibility: Must be a current student in the GWU 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 fellow-ships, 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!