

The Forensics Science Training Institute at Cedar Crest College  
presents  
2009 NIJ Supported  
Summer Workshops

- The ABCs of Microbial Forensics
- Forensic Mass Spectrometry
- Bloodstain Pattern Analysis for the Laboratory Examiner
- Quality Assurance in Crime Scene Processing
- Courtroom Testimony for the Forensic Scientist

## The Forensic Science Training Institute at Cedar Crest College

The Forensic Science Training Institute at Cedar Crest College is designed to offer continuing education to both investigative and scientific professionals in the forensic sciences. Along with the FEPAC accredited undergraduate Forensic Science program and the newly implemented Master of Science in Forensic Science program, Cedar Crest College hopes to make a positive contribution in the training and education of current and future professionals.

### **Location**

Cedar Crest College is easily accessible from the Cedar Crest Boulevard exit of Interstate 78 in both the eastbound and westbound directions in Allentown, PA. The entrance to the College is located on Cedar Crest Boulevard just one mile from Interstate 78.

The Lehigh Valley International Airport is located just 10 miles from the College.

### **For Course Information contact:**

Lawrence Quarino, Ph.D., D-ABC  
Director of Forensic Science Program  
Cedar Crest College  
Phone: 610-606-4666 ext. 3567  
E-mail: laquarin@cedarcrest.edu

### **Hotel Accommodations**

Comfort Suites Motel  
3712 Hamilton Blvd.  
Allentown, PA 18103  
610-437-9100

Cedar Crest College Conference Rates - \$79.00 plus tax for a single or double room. Please call Comfort Suites two weeks in advance to reserve your room at these special rates. If rooms are not reserved under the \$79.00/night rate they will not be covered under the NIJ grant, providing the attendee is covered under the grant (or provided the attendee is a local or state public forensic science laboratory employee).

### **Registration**

These workshops are being offered by the Cedar Crest College Forensic Science Training Institute in conjunction with the Northeastern Association of Forensic Scientists (NEAFS) and is being supported by a grant from the National Institute of Justice (Award # 2007-DN-BX-K212). NEAFS members **who work in local and state public forensic science laboratories** will be given priority in registration by being allowed to register early for this workshop (see table for dates). After the NEAFS only registration period, registration will be made available to all others pending space availability.

## Fees

**All registrants who either register early as NEAFS members or are working forensic science practitioners in local and state public forensic science laboratories will have their registration and travel expenses reimbursed or compensated. Federal employees are not eligible for NIJ grant reimbursement.** Those registrants who fall into this category **should not** send in a registration fee upon registering for a workshop but must contact Janine Kishbaugh (610-606-4666, ext. 3643) for travel arrangements and information. Registrants who do not fall into this category will be responsible for their own travel and are responsible for all expenses including the registration fee.

Workshop	NEAFS Members Registration Only	Full Registration
The ABCs of Microbial Forensics	January 19, 2009-March 9, 2009	March 10, 2009-May 29, 2009
Forensic Mass Spectrometry	January 19, 2009-March 9, 2009	March 10, 2009-June 10, 2009
Bloodstain Pattern Analysis for the Laboratory Scientist	January 19, 2009-March 9, 2009	March 10, 2009-June 24, 2009
Incorporating Concepts of Quality Assurance and Quality Control into Crime Scene Investigation	January 19, 2009-March 9, 2009	March 10, 2009-June 29, 2009
Courtroom Testimony for the Forensic Scientist	January 19, 2009-March 9, 2009	March 10, 2009-July 16, 2009

## **The ABCs of Microbial Forensics**

**June 12, 2009**

Amy J. Reese, Ph.D., *Assistant Professor and Health Professions Advisor, Cedar Crest College*

Microbial forensics is a new and important discipline in today's global landscape of potential bioterrorism, biocrimes, sexual assault, and other related incidences of accidental or intentional contamination of microorganisms or their products. Cases such as the anthrax mail contamination and the tracing of sexually transmitted diseases from perpetrators to victims have brought this field into the public light. This blended discipline is now of increasing interest to physicians, forensic science professionals, crime scene investigators, police, and microbiology researchers alike.

This workshop will consist of lectures and demonstrations to address the following topics: the concept of microbial forensics; an overview of potentially involved microbes, viral agents, and toxins; historical impact and uses of biocrimes; potential impact on human, animal and farm crop targets; safety; sample collection and preservation; laboratory methods of identification of different microbes; involved agencies; quality assurance; databases; and available resources. The workshop is aimed at forensic science professionals and others who may be less familiar with microbiology or with this blended field.

Maximum Number of Registrants: 30

**Registration Fee: \$100.00**

## Forensic Mass Spectrometry

June 24-26, 2009

Glen P. Jackson, Ph.D., *Assistant Professor of Chemistry and Biochemistry, and Interim Director of the Forensic Chemistry Program, Ohio University*

When performed correctly, mass spectrometric analyses of forensic samples can provide evidence that is among of the most reliable, specific and discriminatory of any other method. Although mass spectrometry is most commonly used to confirm the identification of suspected drug samples, it is finding an increasing number of new applications related to forensic science.

The first part of the course will provide a survey of the mature, novel and future applications of mass spectrometry in the different areas of forensic science, as well as providing a background perspective on the history and development of mass spectrometry. The second part of the course will focus on the interpretation of EI, CI, ESI, and MALDI mass spectra. This course will develop the ability to understand, carry out and interpret mass spectrometric analyses. Experience with- or previous knowledge of mass spectrometry is not required, but a solid scientific or technical background is preferred. The following topics will be covered:

- 1) Introduction and historical perspective of mass spectrometry, including the history of mass spectrometric evidence used in criminal and civil law.
- 2) Instrumentation. This will include a brief description of the different types of ion sources and mechanisms, mass analyzers/detectors, and the types of applications for which each configuration is best suited.
- 3) Data acquisition/interpretation. This section will include a discussion on tandem mass spectrometers, hyphenated techniques and derivatization methods, especially regarding substances such as drugs of abuse.
- 4) Applications: these will include mature and novel applications such as drugs of abuse, sports testing, ignitable liquids, explosives, isotope ratio mass spectrometry, glass and polymer analysis, inks and paints, bullets and gunshot residues.
- 5) Interpretation of spectra: This section will include determination of molecular weight, chemical formulae, isotope peak ratio and ion charge states, identifying structural motifs/characteristic functionalities, understanding common fragmentation pathways and finding ways to confirm the determination results. Emphasis will be placed on common drugs of abuse, explosives and toxic compounds.

Students will be given sample spectra to manually interpret (in their own time) and present in class.

Maximum Number of Registrants: 25

**Registration Fee: \$300.00**

## **Bloodstain Pattern Analysis for the Laboratory Scientist**

**July 8-10, 2009**

Brian Gestring, M.S., *Forensic Science Program, Cedar Crest College*

Over the past 25 years, the individualization of biological evidence has improved dramatically. Forensic DNA testing has literally transformed forensic science. As useful as forensic DNA testing has become, it is not a panacea. A blood sample collected from a pool under the copiously bleeding victim will most likely be from that victim.

Since all of the bloodstains on a case are not usually tested, understanding the basic mechanisms of bloodstain pattern formation are necessary to adequate sample evidence for DNA testing. Also there can be times when understanding basic bloodstain patterns can provide more information than the subsequent DNA analysis. A good example of this when a suspect claims that they received the victim's blood on their clothing after the suspect attempted to help them. This issue cannot be resolved with DNA. The suspect has already admitted that it was the victim's blood. In this case the pattern produced by the blood can be more useful than the knowledge of whose blood it is.

The information provided from bloodstain patterns have been used in criminal investigations and court rooms since the late 1800s, but the rapid growth of Forensic DNA analysis has blinded modern analysts to the power of this basic pattern evidence. This workshop will provide the forensic scientist with valuable information that will help them recognize and document significant bloodstain patterns encountered in forensic casework.

Maximum Number of Registrants: 16

**Registration Fee: \$300.00**

**Incorporating Concepts of Quality Assurance  
and Quality Control into Crime Scene Investigation**

**July 13-15, 2009**

Brian Gestring, M.S., *Forensic Science Program, Cedar Crest College*

The most important part of any criminal investigation will always be the most challenging as well, the scene of the crime. Millions of pieces of potential evidence must be evaluated before significant evidence can be identified, protected, documented, and successfully collected. If the proper evidence is not collected, correct interpretations are not possible regardless of the sophistication of the subsequent laboratory techniques.

Over the last decade and a half, forensic laboratories have been implementing methods to improve the quality of their work product. Currently, no such effort exists for the crime scene. This workshop will introduce participants to concepts of quality assurance and quality control and demonstrate how they can be successfully implemented at the crime scene. Participants will see how scene notes, photography, and the quality of the evidence collected can all substantially improve through the implementation of effective QA/QC procedures at the crime scene.

Maximum Number of Registrants: 30

**Registration Fee: \$300.00**

## **Courtroom Testimony for the Forensic Scientist**

**July 30-31, 2009**

Lawrence Quarino, Ph.D., *Director of Forensic Science Program, Cedar Crest College*  
Robert P. Biancavilla, J.D., *Suffolk County (NY) District Attorney's Office*

This two-day workshop will begin with a discussion of the concepts of legal and scientific proof and the ethical dilemmas often posed to scientific expert witnesses during courtroom testimony. Examples of ethical dilemmas typically encountered by forensic scientists during court testimony and in interactions with the criminal justice system will be discussed with suggestions for resolution provided. The role that professional codes of ethics play in resolution of ethical dilemmas will be offered.

The workshop will focus on proper pretrial preparation and direct and cross-examination of expert forensic witnesses. Instruction on expert testimony specific for common types of forensic evidence (e.g. DNA, blood alcohol) will be given. The effect of both the Frye and Daubert standards for the scientific admissibility of evidence on testimony dealing with various types of physical evidence will also be discussed. The instructors will provide opportunity for participants to engage in direct and cross examination.

Finally, the workshop will review important practical criteria useful in persuasive and effective expert witness testimony during trial. The workshop will review recent studies assessing the effect of pay, frequency of testimony, and expert credentials on the perceptions of expert testimony on juries.

Maximum Number of Registrants: 30

**Registration Fee: \$200.00**

2009 Summer Workshops Registration Form

Complete separate registration forms for each attendee. Consult the brochure for the individual workshop's registration deadlines. Please be sure to include your email address below.

I am a returning participant

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Name (as it will appear on Workshop Certificate)

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Affiliation

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Mailing Address

---

City

State

Zip

---

Day Phone Number

Fax Number

---

Email Address (required)

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NEAFS Member Number

Courses available:

**The ABCs of Microbial Forensics**

Registration Fee: \$100.00

June 12, 2009

Maximum Number of Registrants: 30

**Forensic Mass Spectroscopy**

Registration Fee: \$300.00

June 24-26, 2009

Maximum Number of Registrants: 25

**Bloodstain Pattern Analysis for  
the Laboratory Scientist**

Registration Fee: \$300.00

July 8-10, 2009

Maximum Number of Registrants: 16

**Incorporating Concepts of  
Quality Assurance and Quality  
Control in Crime Scene  
Investigation**

Registration Fee: \$300.00

July 13-15, 2009

Maximum Number of Registrants: 30

**Courtroom Testimony for the  
Forensic Scientist**

Registration Fee: \$200.00

July 30-31, 2009

Maximum Number of Registrants: 30

I have enclosed a check for \$\_\_\_\_\_ made payable to Cedar Crest College.

Please charge my credit card:      \_\_ MasterCard      \_\_ Visa

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Credit Card Number

Expiration Date

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Cardholder's Name

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Cardholder's Signature (required)

**Mail to and contact:**

Janine Kishbaugh  
Cedar Crest College  
Department of Chemical and Physical Sciences  
100 College Drive, Allentown, PA 18104.

**Email:** [jmkish@cedarcrest.edu](mailto:jmkish@cedarcrest.edu)

**Phone:** 610-606-4666, ext. 3643

**Telephone Registration:** Register by telephone and charge it to your MasterCard or VISA.  
Telephone 610-606-4666, ext. 3643.

**Fax Registration:** Complete the registration form and fax your information to 610-740-3787. Please be sure to include your MasterCard or VISA number.

**Register online:** [www.cedarcrest.edu/forensic](http://www.cedarcrest.edu/forensic)