

# Young Forensic Scientists Forum Newsletter

AMERICAN ACADEMY OF FORENSIC SCIENCES

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Editor: Sheila M. Estacio, BA; Co-Editor: Shannon A. Lang, BA

## From The Editors

It's hard to believe a year has already passed and we are on our way to Dallas. Get the application forms in by January 21, 2004. Register for the Special Session which is on Tuesday, February 17, 2004, from 8:00 a.m. - 5:15 p.m. Attend the new Posters and Cocktails session that evening from 7:30 p.m. - 9:30 p.m. Present at or listen to the YFSF Bring Your Own Slides session on Wednesday, February 18, 2004, from 5:30 p.m. - 7:00 p.m. Attend the YFSF Annual Breakfast on Thursday, February 19, 2004, from 7:00 a.m. - 9:00 a.m.

Note that attendees of Tuesday's Special Session receive 9.5 continuing education credits. Also if you are a *non-member* and volunteer at the annual meeting, you receive complimentary registration! See page 10 of this issue of *Academy News* for details.

Thank you again to Co-Editor **Shannon Lang** for the input in this year's *YFSF Newsletter* regarding the forensic science programs in the United States and Canada.

A special thanks to Special Session Chairs **Allison Curran**, **Christopher Gojcz**, **Summer Decker**, and **Amy Neumann** for their meticulous planning which produced an excellent, quality program for Dallas 2004.

A special shout-out goes to long time colleague **Claire Shepard**, Chairman of the Special Session, and finally thanks to YFSF Chairman **Amy Shaver** for her guidance this past year and congratulations in advance to the parents-to-be and Baby Boy Shaver.

~Sheila Estacio, BA  
YFSF Secretary

## Call For Posters For YFSF Special Session

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**Tuesday, February 17, 2004**  
**7:00 p.m. - 9:00 p.m.**

Open to both undergraduate and graduate students. Anyone who is interested should email the title of the poster and a brief abstract (one paragraph) to Christopher Gojcz at [chrisgojcz@msn.com](mailto:chrisgojcz@msn.com) or Allison Curran at [allimarz11@aol.com](mailto:allimarz11@aol.com).

## 2004 YFSF Annual Breakfast Spotlight on Resume and CV Development

Do you ever wonder what employers look for in a resume, or what distinguishes those that end up 'on file' from those that prompt an interview? If so, join your peers and benefit from the experience of the panelists. Don't miss out on the opportunity to ask questions, polish up your resume, and enjoy a free breakfast! With the 2004 Academy Meeting in Dallas a month away, it's about that time to remind all attendees of the Annual Breakfast. This year the breakfast will be held from 7:00 a.m. - 9:00 a.m., and will feature a resume workshop. The panel will include Laboratory Directors **Nelson Santos** of North Central Laboratory (Chicago, IL), **Thomas Blackwell** of Northeastern Laboratory (New York, NY) and **Darrell Davis** of South Central Laboratory (Dallas, TX). Speakers will address the challenges of creating a professional CV with topics to include: format, length, references, how to list skills and experience, common mistakes, and much more.

~Amy Neumann, HBSc  
Chair, YFSF Breakfast Session

## Networking Lunch

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**Monday, February 16, 2004**

While attending the AAFS annual meeting, take a productive lunch break on Monday to meet new people and establish networking relationships. Box lunches will be served and participants can engage in "speed networking" - spending a few minutes with each new contact to exchange information and interests. The lunch will provide an enjoyable opportunity to network with many others and will be the perfect beginning to a week of activities at the AAFS annual meeting!

**You must pre-register to attend this lunch, so be sure to check L-1 on your annual meeting pre-registration form, and plan to be a part of the Networking Lunch!**

## Why Young Forensic Scientists Forum and Bring Your Own Slides?

Last year, as I prepared to attend my first AAFS Annual meeting (my first conference ever), I asked my fellow graduate students what to expect. "Would the people be friendly? What would I learn? Would my academic 'heroes' be human enough to speak to a newcomer like me? And would I even have the courage to approach them?" All of these questions had been swirling in my head as I prepared to leave. I have to admit I was intimidated about the whole process. While looking at the *Advance Program*, I came across the Young Forensic Scientists Forum session. As I read about the group, it sounded like me, new to the field, trying to make contacts, and not knowing where to start. So I decided to take a risk and sign up for the session.

As I got to the conference, I was overcome with different emotions. I felt a bit lost in the huge conference especially not knowing anyone but I wanted to be a part of the whole buzz. Luckily, the YFSF was early in the week. As I waited for the session to start, I was surprised by how many people I met who were in similar situations as me. The "First Time Attendee" ribbon on my name badge actually was a great conversation starter, instead of the curse that I had initially imagined. There were students (graduates and undergraduates), new professionals, and seasoned veterans. By the start of the session, I had begun to relax and feel like I was right where I was supposed to be.

The YFSF session proved to be quite valuable in many respects. I learned about the Academy, how to get jobs, career options, and the various fields in forensic science. The highlight for me was meeting and listening to one of the professionals that I look up to, **Kathy Reichs**. I also learned about the "Bring Your Own Slides (BYOS)" session that the YFSF hosts. The BYOS for the YFSF is held just before the Academy-wide BYOS. It allows people, like myself, the chance to present interesting cases, career paths, etc. It is intended to be fun, relaxed, and educational at the same time. As someone who was trying to garner up enough confidence to present material at the academic sessions, it provided the perfect forum for my first public presentation. I worked up a Power Point presentation on the state of Forensic Anthropology in my city, fabulous Las Vegas. Plagued with questions about "CSI: Las Vegas," I thought I would "set the record straight" about what really goes on here in Vegas. Even though I was really nervous, my presentation went off without a hitch. It made me feel great and I found that confidence that I knew had to be inside somewhere. The audience was comprised of the YFSF group as well as full members who had come early to see what the "younger" crowd was up to. I got tons of great feedback that I never would have expected.

After YFSF Special Session and BYOS, people kept coming up to me and introducing themselves. They had either seen me talk or been in the YFSF Special Session with me. I suddenly felt like I was supposed to be here, like I was a real part of the Academy. On one occasion, I even had one

forensic pathologist from Houston come sit with me for lunch when I was in the enormous exhibition hall. He said that he had seen my presentation and wanted to talk further with me. I knew then, that this is why you go to the YFSF session and why you present at the BYOS. Sometimes when you feel completely lost, you need that outlet to help you. That's why the Academy has these programs. I can personally testify that it helped me in numerous ways. The YFSF and BYOS gave me the opportunity to meet people, learn about the field that I love, to get valuable advice from professionals in the field, and to gain experience that will one day help me be the scientists that I am studying and yearning to be. This year, I am presenting in one of my discipline's academic session (again, my first) and I can honestly say that I will be able to do that, in part, thanks to my experience last year at the YFSF and BYOS. If you are at all like me and want to have a great experience at this year's AAFS Annual Meeting, whether it's your first time or not, come join us at the YFSF Session and at the BYOS presentations. It's a lot of fun and you will definitely take something away from it.

If you are interested in presenting at the YFSF's "Bring Your Own Slides" session that will be held in Dallas on Wednesday, February 18, from 5:30 p.m. -7:00 p.m., we are eagerly accepting submissions. Presentations will also be accepted while at the meeting. Presentations should be between 10-15 minutes. For more information, please email me at [decker@unlv.nevada.edu](mailto:decker@unlv.nevada.edu).

~ Summer J. Decker, BA  
Graduate Student  
University of Nevada at Las Vegas

## Forensic Science at the University of Central Oklahoma

Oklahoma might not appear to be a hotbed of forensic science activity, but you might be surprised. The University of Central Oklahoma (UCO), located in Edmond, has both undergraduate and graduate programs in Forensic Science. Add to the mix the Oklahoma State Bureau of Investigation (OSBI) Crime Laboratory and the crime labs of the various city police departments, and you can find many forensic science opportunities in the area.

The Master's program is unique in that students have three options to choose from for their Forensic Science degree: Criminalistics, Technical Investigations, and Forensic Nursing. Students who don't have an undergraduate degree in science are not turned away. They can either choose the Technical Investigations option or take the prerequisite science classes needed for Criminalistics. All three options result in a Master of Science. Future employers are often more impressed by completed course work than the degree you have.

Criminalistics focuses on the laboratory aspects of Forensic Science while Technical Investigations concentrates on the physical recovery of evidence. Forensic Nursing is an option for those who are already a Registered Nurse. The

core classes that all students must complete are Biological Aspects of Forensic Science, Physical Aspects of Forensic Science, Crime Scene Investigation and Reconstruction, Ethics and Testimony, Constitution and Criminal Procedure, and Death Investigation. In addition to full-time professors teaching classes, we have prominent community members who take time out of their schedules to educate the Master's students at UCO. **Tom Bevel**, a former Oklahoma City Police Captain and current Forensic Consultant, teaches Crime Scene Investigation and Reconstruction. Death Investigation is taught by the Chief Medical Examiner of Oklahoma, and Lt. Gravel of the Oklahoma City Police Department teaches Bloodstain Pattern Analysis.

The required course work varies by option. Criminalists' course work is heavily based on the natural sciences. Criminalistics have seven required option classes with four electives. In addition to the requisite Biological and Physical Aspects of Forensic Science classes, they can take the laboratory classes. Other classes and labs to choose from include: Forensic Toxicology and Lab, Advanced Forensic Serology and Lab, Microtechnique and Lab, Forensic Science Analysis and Lab, Biometrics, and Molecular and Population Genetics.

Technical Investigators have classes that deal with information they might encounter at crime scenes. They have five required courses and three electives to choose from; electives can be chosen from any courses from the Criminalistics or Nursing options for which prerequisites have been met. Such courses include: Bloodstain Pattern Analysis I and II, Forensic Arson Investigation, Victimology, and Techniques of Forensic Photography. Nursing classes include Domestic Violence, Child Abuse Forensics, Psychiatric Forensic Nursing, and Sexual Assault Forensics. Students must complete a minimum of 34 semester hours of graduate level work, including a core of 13 hours and a minimum of 21 additional hours in one of the options.

Although the undergraduate program has been in place at UCO for 25 years, the graduate program is fairly new. The first class was admitted in January of 2000. Faculty members conferred with community members to develop the program based on what they wanted students to know upon graduation. They have done an excellent job of attracting students so far, but the program still needs some adjustments. A Master's student who will graduate next month had this to say about the program, "The University of Central Oklahoma needs to incorporate more hands-on coursework and have instructors who are trained in the field. The school has done a fine job of attracting a student base since their inception just a few years ago, but now they need to fine tune their program in order to keep those students who are hungry for real life experience and courses that test their forensic ability."

As a requirement for graduation, Criminalists or Technical Investigators can choose to complete a practicum, which is equivalent to an unpaid internship, or a Master's thesis in Forensic Science. Nurses are not required to complete either one. Most students choose to do a practicum, not only for the hands-on experience, but also for the chance of potential

employment. Students can arrange to find practical locations locally or out-of-state, if the agency cooperates with the school's requirements. The options in the Oklahoma City area are somewhat limited since there are so many competing for spots. Choice assignments include the OSBI labs, the Office of the Chief Medical Examiner/Toxicology Lab, and the Oklahoma City Police Department. Out-of-state students might prefer to look for assignments in their hometowns, if they plan to return after graduation. The amount of time spent on location depends on the number of credit hours a student chooses. One hundred twenty hours must be completed on site for each credit hour; most students select two to four credits.

The distinctiveness of the Master's of Forensic Science program at the University of Central Oklahoma lies in its options. You can choose the option that best fits what you want to study. However, make sure you know what each option prepares you for. If you choose the Technical Investigator option thinking you will be hired as a crime scene investigator upon graduation, you will be disappointed. Many areas, Oklahoma included, require crime scene technicians to be sworn police officers. Not even a graduate degree can substitute for the years of patrol duty required before applying to other departments. The Criminalistics option, while the most demanding, offers the most versatility for those hoping to find a job in Forensic Science. As with anything, get all the information you can before making a decision.

~*Maria Devore*  
Graduate Student, BA  
University of Central Oklahoma

## Armed Forces DNA Identification Laboratory

The idea of the Armed Forces DNA Identification Laboratory (AFDIL) was first conceived in Fall 1990, when then Major **Victor W. Weedn**, Medical Corps, United States Army Program Manager, and James J. Canik, Deputy Program Manager, were tasked with developing a DNA specimen collection-storage-retrieval system and a laboratory for the typing of DNA specimens. On December 16, 1991, Deputy Secretary of Defense Donald J. Attwood authorized the Assistant Secretary of Defense (Health Affairs) to develop policies and requirements for the use of DNA analysis in the identification of remains. These included the formal establishment of a DNA Registry, to include a repository of DNA specimens (Armed Forces Repository of Specimen Samples for the Identification of Remains- AFRSSIR) and a DNA service laboratory (Armed Forces DNA Identification Laboratory-AFDIL). Since the inception of AFDIL in 1991 and the AFRSSIR in 1992, the goal of the organization has been to ensure the United States would never again have to entomb the remains of an unknown American among the Unknowns in Arlington National

Cemetery. With the continued refinement of this unique forensic tool, AFDIL has brought this dream to a reality.

Currently under the leadership of Director Colonel **Brion C. Smith** and Deputy Program Director Mr. James J. Canik, AFDIL's mission is to provide worldwide scientific consultation, research, and education services in the field of forensic DNA analysis to the Department of Defense (DoD) and other agencies. It's mission is to also provide DNA reference specimen collection, accession, and storage of United States military and other authorized personnel. AFDIL, which is part of the Armed Forces Institute of Pathology, is divided into three main sections: the mitochondrial DNA (mtDNA) section, the nuclear DNA (nucDNA) section and the research section.

AFDIL's mitochondrial DNA (mtDNA) section, under the direction of **Suzanne M Barritt**, aids the Central Identification Laboratory-Hawaii (CILHI) with the identification of all soldiers whose remains have been repatriated from past theaters of operation (Vietnam, Korea, and World War II) as well as individuals lost during the Cold War era. This time consuming process begins with anthropological teams from CILHI going to known battlefield and crash sites to recover human remains. When needed bone samples are sent to AFDIL for mtDNA testing. Upon receiving a bone specimen, the bone is cleaned and the DNA extracted using conventional organic extraction procedures. The mitochondrial hypervariable regions one and two (HV1 and HV2) are then amplified with either four primer sets or eight mini-primer sets depending on how degraded the sample is. The amplicons are then sequenced and the generated mtDNA sequences (mitotype) are sent to CILHI. In addition to mtDNA testing of human remains, the mtDNA Family Reference team is responsible for generating control region mitotypes for maternal references that have been collected from the family members of soldiers missing in action. These references are compared to the unknown bone mitotype. By using mtDNA technology coupled with other circumstantial evidence collected by CILHI including any anthropological or historical items identifications are now possible where previously they were not. Thus mtDNA sequencing may once again provide the critical link to bringing final closure for the families of these missing service members.

The NuclearDNA (nucDNA) section, under the direction of **Demris Lee**, has contributed to the ongoing mission capability of the Office of the Armed Forces Medical Examiner (OAFME) to identify service members killed in current theaters of operation or military training accidents as well as helping other state, government, and local agencies with mass fatality incidents. Over the past 12 years, the nucDNA Section has not only supported numerous high profile cases including the Alaska Air crash, the Georgia Crematory and Operation Iraqi Freedom, but also has contributed significantly to the quality control efforts of the AFRSSIR. Specimens typically received from the OAFME are bone, tissue and blood and these are extracted and purified using state of the art DNA technologies. The purified DNA is then amplified using commercially available STR (Profiler Plus, Cofiler and Power Plex 16) and Y-STR kits that have been validated for use at AFDIL. Samples are currently analyzed on the ABI-377 DNA sequencer but in the near future, AFDIL will be moving all casework to the ABI-3100 Genetic

Analyzer. The generated genotypes are then compared to known references samples and identification reports are generated.

Supporting the Nuclear and Mitochondrial DNA Casework sections AFDIL's Research section, directed by Tom Parsons, develops new technologies to improve specific casework, as well as general forensic, DNA identification capabilities. Recent and current projects include the development of efficient, cost-effective protocols for sequencing the entire mitochondrial genome; entire mtDNA genome SNP (single nucleotide polymorphism) assays to resolve individuals who share common mitochondrial control region haplotypes; robotic, high-throughput procedures for control region sequence databasing; and improved extraction and amplification protocols for the typing of nuclear DNA from degraded bones. In addition to supporting the AFDIL mission by developing new techniques, the Research Section is also dedicated to improving the utility of forensic DNA testing by increasing general understanding of population genetics and molecular biology. Efforts are underway to expand the number and scope of forensic databases available for analysis, and characterize basic properties of populations, genetic loci, and biological systems as they relate to DNA identification. In addition to the three main sections, AFDIL has added two new sections the Consultative Services (AFDIL CS) and the validation section. AFDIL now offers its nucDNA and mtDNA typing expertise to outside civilian and private laboratories through its new consultative services section, AFDIL CS. The consultative service section is supervised by Kimberly B. Murga, MFS and potential case inquires should be emailed to [afdilcs@afip.osd.mil](mailto:afdilcs@afip.osd.mil). The validation section, under the supervision of Dr. Timothy McMahon was instituted to bridge an important gap between the research section and the nuclear and mitochondrial casework section, which is the validation of all new forensic technologies developed in the research section for implementation into casework. Likewise, the validation section is also responsible for validating any new commercial reagents or technology as well as trying to streamline current methods so as to be able to process greater numbers of samples more efficiently to save time and money.

Opportunities for permanent employment at AFDIL are continuously arising as the laboratory sections grow to meet the increasing number of case samples that must be processed yearly. Current job opportunities are posted on the AAFS web site. In addition to permanent employment, AFDIL offers non-paid internship opportunities to students looking to gain forensic laboratory experience. Both the Research Section and the Validation Section often draw upon the assistance of students and interns for these projects, benefiting from their participation, while at the same time providing practical experience in advanced techniques of forensic DNA analysis. If interested feel free to contact **Theodore Anderson** at [andersont@afip.osd.mil](mailto:andersont@afip.osd.mil) for information regarding internship opportunities in the validation, nuclear and mtDNA section and Tom Parsons at [parsons@afip.osd.mil](mailto:parsons@afip.osd.mil).

~Dr. Timothy McMahon  
AFDIL Validation Coordinator

## John Jay College

As is often the case, students seem incapable of appreciating our academic pursuits until it is finally over. It is only then that we look back and begin to appreciate both our failures and successes, finally free to see the big picture. Although it would be foolish of me to compare John Jay's Master's program to any other, I can confidently say that I would not trade my time here for any other experience. That is not to say that my graduate studies left me unscathed at all times, nor that the program is without faults. Nonetheless, I finally find myself in a position to stand back and evaluate my experiences from a new perspective.

At the start of my first semester I was one of many students who had decided to relocate to New York City to pursue graduate studies in forensic science. The city itself was a combination of pleasant, unpleasant, and somewhat unusual surprises. Attending Jay meant that most students sought out living space in various boroughs, bringing with it the incomparable experience of finding housing in a city with an exceptionally low vacancy rate, coupled with exorbitant prices. Despite this, we adjusted. Many grew to love the city, while others learned to appreciate it the trials of being a "New Yorker." Regardless of your opinions about "The City," there are some basic truths that we have all discovered. New York is a tough place. It will test your character. You will grow. And you will miss it when you leave (if you leave).

We began our graduate work with Advanced Criminalistics, which most students would argue is the cornerstone course at Jay. I would argue that it is a right of passage - something to survive and yet only appreciated when completed. Don't be deceived by the allocation of credits for FOS 710 and 711. These classes come with a minimum expectation of nearly 20 hours per week in lab. You will learn the theoretical and practical fundamentals of trace evidence analysis. You are given a goal and expected to research the best method available to you in solving that goal. Students learn to think rather than simply follow instructions. You realize that you and your fellow classmates have become a scientific community, capable of discussing problems and working toward solutions. This is why we came here. We have pursued higher academic learning in an effort to "be scientists." Our experiences at Jay have solidified these efforts. We have continuously been asked to think independently and solve problems without rote instructions. This growth has been fostered in large part due to the lofty expectations of the faculty. We were pushed, but in the end, we gained so much.

The remainder of the course load at Jay allowed us to meet and interact with a host of professionals. Students select from a broad range of seminars, including Forensic Medicine, Crime Scene Reconstruction, Scientific Firearms Examination, Scientific Fire Investigation, Forensic Human Identification, Advanced Topics In Physical Evidence,

Advanced Polarized Light Microscopy, Scientific Evidence & Expert Testimony, and Forensic Investigations in Environmental Protection. These courses allowed us to forge contacts and gain real-life perspectives on the profession that we were hoping to embark upon. Lecturers were selected based upon their years' of expertise gained from working in local and national crime laboratories, medical examiner offices, industry and private consulting.

While at Jay many graduate students were given the opportunity to view the classroom from the other side as laboratory and lecture instructors. Consequently, we re-learned former concepts from this new vantage point while acquiring skills that will help us to explain science to others, including future legal professionals and juries.

In the hopes of providing an honest and realistic picture of forensic graduate studies at John Jay, I would be remiss if we omitted to mention some shortcomings. All universities are plagued with problems. Historically, forensic science programs are plagued with more than their fair share. John Jay College (JJC) is no exception. If Jay's strengths are her academics, her weakness is research. Inadequate funding, space and equipment mean students must turn to area crime labs in an effort to complete thesis research. Naturally, there are several advantages to this, with the most obvious being real-life experience and networking opportunities. Nonetheless, many students have research interests not easily supported by a working crime lab.

As mentioned before, Jay's strengths are her academics. A clear demonstration can be found by observing the numerous JJC alumni that are, and continue to be, absorbed into the local and national work force. This is a testament to the superior educational instruction offered by the John Jay faculty, such that students can seamlessly begin their professional careers at places such as NYC OCME, NYPD, DEA, NJ State Police, FBI, ATF, CDC, etc.

John Jay has big plans for the future, largely revolving around the construction of a new \$140 million facility. Although in the planning stages, the building has a framework for an indoor shooting range and state of the art equipment. We as students are hopeful that the future will see continuity in academics, coupled with research advancements.

Experience has brought with it perspective. I have no regrets. As I have tried to give you a realistic view of John Jay, any student wishing to pursue academic studies in forensic science should seriously consider visiting universities and consulting with professionals in the field. JJC has provided a strong foundation upon which I will continue to build. I believe that most students share my sentiments regarding Jay. In the future, I hope to somehow contribute to the improvement and advances of my graduate school. And there is much to be said for such sentiments....

~ Jack Hietpas, MS  
Forensic Science  
John Jay College of Criminal Justice