AAFS Career Webinar Series

Presenting!

The General Section

December 4, 2013
7:00 PM to 9:00 PM (EST)

Host - Tom Mauriello, MFS

Heather Mazzanti, MSFS

AAFS – General Section Webinar – December 4, 2013
Thomas P. Mauriello, MFS
Member – General Section

- Former police officer/investigator (8 years)
- Special Agent (retired) – US Department of Defense (30 years)
- CEO - ForensIQ, Inc. – Forensic Consultant Services
- Adjunct Professor – University of Maryland @ College Park Depart. of Criminology and Criminal Justice (36 years)
- Polygraph Examiner/Former Chief of Polygraph w/US DoD
- Forensic Hypnotist
- Host – ForensicWeek.com Weekly Webcast Show
- B.A. degree in Criminology – Suffolk University, Boston, MA
Heather E. Mazzanti, MSFS
Associate Member – General Section

• Assistant Director of the Forensic Science Program, Arcadia University, Glenside, PA
• Assistant Professor of Chemistry
• President of the Council of Forensic Science Educators (COFSE)
• Forensic Genetics consultant
• BA degree in Biology from Bucknell University, Lewisburg, PA
• Master of Science in Forensic Science (MSFS) degree from Arcadia University, Glenside, PA
• PhD in Biological Sciences from University of Denver, Denver, CO – in progress
List of General Section Disciplines

1. Forensic Accounting
2. Forensic Archaeology*
3. Forensic Art and Sculpting*
4. Forensic Aviation and Land Vehicle Accident Investigation
5. Forensic Consulting
6. Forensic Credibility Assessment (Polygraph)*
7. Forensic Death and Crime Scene Investigation*
8. Forensic Education or Research*
9. Forensic Fire Investigation
10. Forensic Firearms Identification*
11. Forensic Geology*
12. Forensic Microscopic Examination
13. Forensic Nursing*
14. Forensic Photography
15. Forensic Radiology
16. Forensic Trace Evidence
17. Forensic Veterinary Science*
• What is Forensic Science?
  • Application of science to law

• What attributes make someone well suited to a career in this field?
  • Attention to detail
  • Natural **science** courses
  • Communication skills (written and verbal)
  • Inquisitive nature
  • Critical thinking abilities

• What type of background check is done for employment? (Every agency is different – federal, state and local)
  • Completion of extensive personnel security questionnaire
  • Criminal history and national agency record checks
  • Background Field Investigation
  • Use and Abuse of alcohol and drugs
  • A successful Polygraph Examination
Are you a person of trust and responsibility?
Security Clearance Processing

POLYGRAPH

AJUDICATION

INVESTIGATIONS

Top Secret

Secret

Confidential

Standard Form 86 (SF86)
Questionnaire for National Security Positions

AAFS – General Section Webinar – December 4, 2013
Personnel Security
Adjudicative Guidelines

1. Allegiance to the U.S.;
2. Foreign Influence;
3. Foreign Preference;
4. Sexual Behavior;
5. Personal Conduct;
6. Financial Considerations;
7. Alcohol Consumption;
8. Drug Involvement;
9. Psychological Conditions;
10. Criminal Conduct;
11. Handling Protected Information;
12. Outside Activities; and
Credibility Assessment Analysis – The Polygraph Examiner Discipline
Credibility Assessment Analysis – The Polygraph Examiner

• Investigative interview and examination with the use of a truth verification instrument.
• Certain states require licensing – not all.
• Federal examiners required to be certified by the National Credibility Assessment Center.

• American Polygraph Association has established basic standards and training.
• Not associated with any particular college major field of study.
• Career focus in law enforcement and counterintelligence fields.
• The Argosy University, American School of Professional Psychology, Virginia campus – Masters in Forensic Psychology, Forensic Psychophysiology track.
THE FEDERAL POLYGRAPH EXAMINER

- Trained investigator

- Graduate of the DACA 13 week basic training program

- Minimum of 80 hours biennial continuing education

- Quality Control/Mentoring Program
How To learn More

• American Polygraph Association [http://www.polygraph.org/](http://www.polygraph.org/)

Why Is Learning More Important?

• Potential Career
• May need to pass a polygraph examination as a condition of employment.
Forensic Death and Crime Scene Investigation Discipline
Forensic Death and Crime Scene Investigation

• Defined:
  • Examining and documenting crime scenes and human bodies dead from unexpected circumstances; and the identifying, collecting, and packaging of physical and forensic evidence for later submission to crime lab.

• Two separate career fields:
  • Evidence Technician or Criminalist or CSI (not the TV show) – (Employed by Police)
  • Forensic Investigator - (Employed by Medical Examiner or Coroner's Office)

• Who typically employs someone with this expertise?
  • Most larger police agencies are creating their own crime scene units
  • FBI has also created their own crime scene unit for the major investigations.
  • Medical examiners employ death investigators [called Forensic Investigators] who respond to a death scene to take control of the deceased and recover the remains, and conduct preliminary investigation into the death to assist in the forensic autopsy.
Forensic Investigator (FI)

• Full-time employees or on-call part-time contractors
  • Depends on whether the jurisdiction has a Medical Examiner (ME) System or Coroner System.

• Conducting initial scene examination of the deceased, identifying trauma to the body, identifying physical and forensic evidence, coordinating with detectives and the ME.

• Former law enforcement; EMTs; or other medical technicians type career fields

• Training associated with National Standards for Death Investigation and local statutes

• Major areas of study: Criminal Justice; medical related fields; fire and rescue.
Crime Scene Investigator

• Defined: (Not to be confused with the TV show) - Examining and documenting crime scenes, identifying, collecting, and packaging of physical and forensic evidence for later submission to crime lab.

• Career field:
  • Commissioned Police officers
  • Civilian employees

• Certifications:
  • International Association for Identification (IAI)
  • Agencies are encouraging their employees to study to take the test. There are three levels of certification based on training and experience.

• Pros – Job Security and variety.
• Cons – 24 hour on-call status and lack of advancement.
Forensic Geology Discipline
Forensic Geology Discipline

• Also referred to as Forensic “Mineralogy” – the study of evidence relating to minerals, oil, petroleum, and other materials found in the Earth.

• Types of examinations made and information provided:
  • Presence at a particular location (e.g. crime scene);
  • Sequence and possible timing of a visit to that location;
  • Location of buried objects (e.g. bodies, weapons, drugs);
  • Source of imported items (e.g. smuggled items);
  • Geographical origin of unidentified human remains; or
  • Length of time a body has been present at a location.

• Jobs done in this discipline:
  • Crime Scene Investigations, Laboratory examination/analysis, Expert Witness testimony (civil and criminal matters), and Academia.
Forensic Geology Discipline

- **Certifications:**
  - Most agencies self-certify. No known Forensic Geologist cert.

- **Employment:**
  - Law Enforcement Agencies and Academia.
  - Contracted by attorneys and forensic consultants.
  - Law enforcement agencies vary with a mix of sworn and non-sworn forensic scientists.

- **Degree to consider:**
  - A physical science degree in Geology with a minor in Chemistry is most appropriate.
  - Suggested a general field of study; that is, a Master of Science in Forensic Science to further expose you to the other fields in forensic science.
Forensic Art and Sculpting Discipline
Forensic Art and Sculpting Discipline

• Titles given this forensic science:
  • Forensic Artist, Forensic Imaging Specialist, Sketch Artist, Graphics Specialist.

• Types of jobs they do:
  • Facial composites (drawings of suspects, victims and others);
  • Facial reconstructions (2D & 3D);
  • Post-mortem drawings of victims (what they would possibly look like in better times in order to get an ID);
  • Age progressions of suspects and sometimes victims (especially children);
  • Digital imaging (drawing approximations of suspects from video file, Photoshop manipulation of similar photos to the suspect for six packs, and modifications of vehicles or jewelry.)
Forensic Art and Sculpting Discipline

• Who typically employs someone with this expertise?
  • Law Enforcement
  • Coroner’s or Medical Examiner’s Office and Universities are also places where the facial reconstructions are done in order to determine an identity.

• There are 28 fulltime units in the United States with 53 full time artists. In addition across the U.S., there are another 150 individuals who are working within law enforcement at all levels, Medical Examiners Offices and other educational organizations who have another position and in addition create composites sketches.
Forensic Art and Sculpting Discipline

• What might a typical day include for someone in this field?
  • In a smaller agency, a Forensic Artist may have another title, perform this as a collateral duty and draw maybe 2-3 times a month.
  • In a larger agency, a Forensic Artist (FA) may have drawings every week, handle requests from smaller agencies seeking professional courtesy for their services, as well other various forensic art projects.
  • In many instances, the FA gets called out by detectives to attend an autopsy and view a victim’s body for a post mortem drawing. Detectives will also call out an FA after hours to meet with witnesses at a location.
  • The FA must also appear at court to testify on the work done in the field.
Forensic Art and Sculpting Discipline

• How does someone prepare for a career in the field?
  • To start, get a four year degree, perhaps in a dual major – Art & and ... choose one: Science, Criminal Justice, English, or Forensic Science.

• Eventually, go to work for a law enforcement agency. There are not many full time positions for this field, at this time, however the best full time opportunities are with the larger agencies. The agency will send you to the proper Forensic Art training from a reputable teaching program.

• You must have the ability to draw well. Having strong drawing and rendering skills, with the understanding of anatomy and the skeletal structure of the human face is vital.
Forensic Art and Sculpting Discipline

• Certification and Professional Organizations:
  • There is no national certification available in the United States at this time.
  • The American Academy of Forensic Sciences, the International Association of Identification are two organizations that support Forensic Art.

• Job market:
  • Rare but important to connect with an agency and work toward that opportunity.
  • An agency would rather promote/train a stake holder within their agency than hire someone as freelance.
Forensic Education and Research Discipline
Forensic Science Education and Research

• Defined
  • Scholar who delivers forensic science coursework usually being an expert in a given area
  • Professor (Ph.D.), Associate and Assistant Professor (Tenured [Permanent Hire] or Non-Tenured), Adjunct, Laboratory Instructor, Teaching Assistant (TA), Researcher, Trainer, and Public Speaker/Lecturer

• Typical job responsibilities
  • Designing and teaching forensic science specific courses: both practical and theory based
  • Conducting and overseeing forensic science based research
  • Advising
  • Other administrative responsibilities

• Who they work for
  • Community colleges
  • Colleges and universities
  • Federal, State and Local Law Enforcement Academies
Forensic Science Education and Research

• How would you get a job as a Forensic Educator
  • Degree requirements: MS or PhD
  • TA → post doc → adjunct → professor
  • Work in a forensic lab → adjunct/professor
  • Student or assistant teaching may also be required
  • Stay current in the field

• How do you build your resume once you have the job?
  • Maintain contact with forensic laboratories or consult

• Certification Requirements? If so, what is it?

• Research
  • Forensic Institute for Research and Education – Middle Tennessee State University
  • Center for Education and Research in Forensics – University of Texas @ San Antonio
  • The Center for Forensic Science Research & Education – Willow Grove, PA

• MASSIVE OPEN ONLINE COURSES (MOOC) in Forensic Studies
  • Stevenson University
  • Strathclyde University
Council of Forensic Science Educators

• A membership organization comprised of program directors and faculty from forensic science programs

• Mission - To encourage the exchange of ideas and information regarding academic programs in laboratory based forensic sciences and the discussion of problems of common interest.
Forensic Firearms Identification
Forensic Firearms Identification

• Forensic Technologist:
  • Gathers information from the firearm;
  • Test fires the firearm;
  • Screens the test fired cartridge cases under comparison microscope;
  • Enter test fired cartridge case into NIBIN (National Integrated Ballistics Information Network); and
  • Assists the Crime Laboratory Analysts

• Crime Laboratory Analyst:
  • Function tests (includes trigger pull and safeties functionality);
  • Distance determination test, Serial Number Restoration,
  • Bullet and Cartridge case comparison, and Court testimony.
Forensic Firearms Identification

• Who hires in this disciple?
  • State and County Forensic/Crime Laboratories, ATF, Other government agencies.

• Typical work day:
  • Lab work and expert testimony in court

• How you prepare for this disciple:
  • Education in forensics; internships, self-knowledge/learning, working within the field such as at a firearms manufacturing plant (potential help if unable to find firearms position right away).
  • Science courses such as Chemistry and Biology, Forensic Science courses such as Forensic Chemistry, Forensic Law courses, Introductory Criminal Justice Courses.
  • Some enter after a career as a police officer.
Forensic Archeology
Forensic Archaeology

- Defined
  - The application of archaeological methods & techniques to legal work

- Typical job responsibilities
  - Search for human remains – buried bodies, surface scatter, mass fatality, fatal fire
  - Development of search and recovery protocols
  - Recovery of forensically significant remains in the above listed contexts

- Who they work for
  - Local, State or Federal Law Enforcement
  - CIL/JPAC
  - International organizations / NGOs
  - Universities

- How would you get a job as a forensic archaeologist
  - Undergraduate degree in archaeology or anthropology w. archy concentration
  - Excavation experience
  - Masters program in forensic archaeology

- How do you build your resume once you have the job?
  - Hands on excavation experience
  - Internships
  - Professional organizations (SAA, RPA, AAFS)
Defined as the application of the forensic aspects of health care combined with the bio-psycho-social education of the registered nurse in the scientific investigation and treatment of trauma and/or death of victims and perpetrators of abuse, violence, criminal activity and traumatic accidents.

**Job Roles of the Forensic Nurse:**
- Death Investigation; Psychiatric Nursing;
- Clinical Forensic Nurse; Sexual Assault Examiner;
- Nursing Jurisprudence; Forensic Nurse Examiner;
- Corrections/Custody Nurse; Legal Nurse Consultant;
- And Nurse Educator

**Employed by:**
- Hospitals, law enforcement agencies, Interpersonal Violence Units, legal entities, medical examiner and coroner’s offices, colleges and universities, psychiatric facilities, jails/prisons
How to prepare for a career in Forensic Nursing

• First, a degree as a Registered Nurse. The push in the United States is for all forensic nurses to have a minimum of a Bachelor’s Degree in Nursing (BSN). The nurse also needs to have a current license to practice issued by the state(s) in which they work.

• In addition to the BSN, a Master’s in Forensic Nursing or Forensic Science is valuable along with specific courses for the nurse’s specialty, such as death investigation or Sexual Assault Examiner.

• http://www.all-about-forensic-science.com/forensic-nursing-degree-degree.html

• Depending on the employer a certificate may be required, specific to the field of Forensic Nursing. For example currently the IAFN offers a certificate as a Sexual Assault Nurse Examiner (SANE) in adult and pediatric specialty areas.
International Association of Forensic Nurses

- An international *membership organization* comprised of forensic nurses working around the world and other professionals who support and compliment the work of forensic nursing.

- Mission - To provide leadership in forensic nursing practice by developing, promoting, and disseminating information internationally about forensic nursing science.
Forensic Veterinary Science
Forensic Veterinary Science

Today’s sophisticated animal agriculture and companion animal industry requires the inputs of professionals trained in advanced scientific disciplines such as:
1. Animal Nutrition,
2. Animal Medicine
3. Animal Production
4. Animal Genetics
5. Animal Behavior
6. Animal Pathology
7. Animal Physiology
8. Animal Husbandry
9. Animal Biochemistry
10. Animal welfare

Forensic Veterinary science must be inclusive of professionals that are experts in their respective fields.
Forensic Veterinary Science is a unique combination of all activities involved in the raising, care, feeding, housing, and training of all types of animals.
Examples of jobs or work done in the field of “Forensic Veterinary Science.”

- Animal cruelty investigations for pets; production livestock; and horses.
- Animal Forensic Nutrition
- Protecting the animal, and the food that is being produced; and the impact a food imbalance, contaminant or additive, has on the final product.
Forensic Veterinary Science

Forensic Animal Nutritionists are involved in:

• Investigating death of large numbers of production animals
• Determining which nutritional inputs might have a harmful affect on humans consuming animal based products.
• Supporting local law enforcement agencies to see if animal foods are poisoned or contaminated by deliberate actions
• Investigating what nutrient supplements are used illegally or that are in non compliance with regulatory agencies.
• Help determine if animals were fed tainted feeds in order to collect insurance money associated with performance activities or breeding value.
Preparing for a career in the field:

- Define an area or specialty that you are most interested in; pathology, microscopy, nutrition, medicine, husbandry, breeding, genetics, etc.
- Apprentice with an excepted expert. In your chosen field.
- Volunteer or work on animal production facilities or enterprises that derive their living from the specialty you are interested in.
- Develop an extensive knowledge in statistical analysis and critical review of collected data.
- Attend professional meetings in your chosen career path.
Forensic Veterinary Science

Type of degree, type of coursework, balance of science versus criminal justice coursework, etc.

- Attending an excellent university that offers M.S and PhD programs in Animal science with the addition of a specialty is an excellent choice for most Forensic Veterinary Professional. M.S. and PhD students have the advanced qualification needed in forensics that Veterinary schools do not offer.

- Courses that emphasize levels of advanced scientific course work beyond a Veterinary students curriculum is required for the best Veterinary forensic scientists in a specialized field of expertise.

- A PhD in Nutrition is preferred over a DVM in all cases of forensic investigation involving advanced nutrition skills and competency. There is currently no US veterinary schools that teach advanced nutrition required for forensic work.
www.ForensicWeek.com
Weekly Webcast

- Episode 2 – Forensic Anthropology
- Episode 3 – Forensic Pathology
- Episode 4 – Forensic Chemistry
- Episodes 7 & 8 – Polygraph
- Episode 14 – Forensic Expert Witness
- Episode 25 – Forensic Nursing
- Episode 26 – Animal & Agricultural Forensic Services

- Episode 30 – Death Investigation
- Episode 31 – Forensic Accounting
- Episode 34 – Security Clearance Process
- Episode 37 - MASSIVE OPEN ONLINE COURSES (MOOC) in Forensic Studies
- Episode 40 – Computer Forensics
- Episode 41 – Fingerprint Examination

Every Thursday 7:00 PM to 8:00 PM (EST)
Thanks to the following AAFS General Section Members who provided information for their respective disciples in preparation for this Webinar:

- Karen Wolsiffer - Forensic Firearms
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- Steve Chancellor – Forensic Death and Crime Scene Investigation
- Melanie E. Boeyer – Forensic Archaeology
- Dr. Gary Pusillo – Forensic Veterinary Science
- Dr. Amy Carney, NP - Forensic Nursing
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